The Massachusetts Fire Problem

2013 Annual Report
Massachusetts Fire Incident Reporting System

Charles D. Baker, Governor
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Department of Fire Services
Division of Fire Safety • Fire Data and Public Education Unit

www.mass.gov/dfs • (978) 567-3380

ABOUT THE COVERS

The original drawings shown on the front and back covers are the year 2014 First and Second Place winning entries of the 32nd Annual Statewide Arson Watch Reward Program Poster Contest, sponsored by the Massachusetts Property Insurance Underwriting Association (MPIUA), on behalf of all property and casualty insurance companies of Massachusetts. The poster theme was **"FIRE PREVENTION – EVERYONE / EVERY DAY".**

A countywide contest was held for all students in grade 6-8. Twelve out of 14 counties participated with approximately 1,200 posters submitted. Posters were judged, and First and Second Place County Winners were chosen at MPIUA by an impartial panel of judges. All First Place County Winners were then entered into the Massachusetts Statewide Contest. An Award Ceremony was held in honor of all county winners at the Sheraton Framingham Hotel on May 29, 2014, wherein the three State Winners were announced and presented with their awards.

The front cover shows a drawing submitted by Matt Skrzynski, a student at the JFK Middle School, Florence, Massachusetts. Matt's poster was chosen as the First Place Winner in the Hampshire County Poster Contest, and as a result, was automatically entered into the statewide contest, along with 11 other county winners, where it was chosen as the First Place State Winner.

The back cover shows a drawing submitted by Caitlyn Marat, a student at the Cohasset Middle High School, Cohasset, Massachusetts. Caitlyn's poster was chosen as the First Place Winner in the Norfolk County Poster Contest and was also automatically entered into the statewide contest where it was chosen as the Second Place State Winner.

MPIUA has generously sponsored the printing of the 2013 Annual Report of the Massachusetts Fire Incident Reporting System (MFIRS), as well as, the use of the first and second place posters for the covers, for the last 31 years.

Massachusetts Fire Incident Reporting System

2013 Annual Report

Publication Number: 15 – 131 - DFS - 01
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This report is also available in an electronic format through the Fire Data section of the Department of Fires Services website:

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Fireman's Prayer

When I am called to duty, God
Wherever Flames may rage
Give me the strength to save some life
Whatever Be its age
Help me embrace a little child
Before it is too late
Or save an older person from
The horror of that fate
Enable me to be alert and
Hear the weakest shout
And quickly and efficiently
To put the fire out
I want to fill my calling and
To give the best in me
To guard my every neighbor
And protect their property
And if according to your will
I have to lose my life
Please bless with your protecting hand
My children and my wife

-Unknown

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Executive Summary

"All…fires or explosions by which a loss is sustained shall be reported… to the State Fire Marshal on forms furnished by the department, and shall contain a statement of all facts relating to the cause and origin of the fire or explosion that can be ascertained, the extent of damage thereof, the insurance upon the property damaged, and such other information as may be required."

-Massachusetts General Laws, Chapter 148, Section 2.

Civilian Fire Deaths Up 13% From 2012
Forty-four (44) civilians died in 40 Massachusetts fires in 2013. Civilian deaths increased by seven, or 13%, from the 37 fire deaths in 2012. Twenty-four (24) men, 17 women, and three children died in Massachusetts' fires. Of the 44 civilian deaths in fires in 2013, 28 occurred in residential structures. Fifty percent (50%) of civilians died at night, at home, while they were sleeping and did not have working smoke detectors or residential sprinklers. It is important to remember that detectors only provide an early warning of a fire. They do not guarantee an escape. Residential sprinklers provide the best opportunity to safely escape from a fire in your home. It is also important to make and practice an escape plan.

Ten (10) deaths occurred in six motor vehicle fires and six people were killed in six outside fires in 2013.

0 Fire-Related Firefighter Deaths in 2013
There were no fire-related fire service fatalities in the Commonwealth of Massachusetts in 2013.

17,353 Structure Fires, 2,587 Vehicle Fires, 9,888 Outside & Other Fires in 2013
There were 29,828 fire and explosion incidents reported by fire departments to the Massachusetts Fire Incident Reporting System (MFIRS) in 2013. The 17,353 structure fires, 2,587 motor vehicle fires, and 9,888 outside and other fires caused 44 civilian deaths, 323 civilian injuries, 478 fire service injuries, and an estimated dollar loss of $244.6 million in property damages. In 2013 there were 1.48 civilian deaths for every 1,000 fires.

Structure Fires & Outside Fires Down in 2013
The total number of reported fires decreased by 5% from 31,353 in 2012 to 29,828 in 2013. Structure fires decreased by 1% from 2012 to 2013. From 2012 to 2013, motor vehicle fires increased by 3%. Outside, brush, and other fires decreased by 12% during the same time period.

Although the law states that only fires where a loss is sustained must be reported, many fire departments are wisely reporting all of the fire incidents that they respond to, giving a more accurate picture of the fire problem in Massachusetts. Many departments are also reporting the non-fire calls to which they respond. Emergency medical and rescue calls

represent over half, or 57%, of the 773,645 total responses that were reported to MFIRS in 2013. The total number of calls reported to MFIRS increased by 10,267, or 1% in 2013.

Cooking Was the Leading Cause of Residential Building Fires & Injuries & Deaths
Sixty-nine percent (69%) of all residential building fires were caused by unattended and other unsafe cooking practices in 2013. Seventy percent (70%) of residential fires originated in the kitchen. Cooking also caused the most fire-related civilian injuries and deaths. Cooking fires caused six, or 22%, of residential fire deaths in 2013. The careless disposal of smoking materials tied with electrical fires as the second leading cause of fire deaths each accounting for five, or 19%, of residential fire deaths.

Detectors Operated in 63% of Fires
Smoke or heat detectors operated in 9,042, or 63%, of the residential building fires in 2013. There were no working detectors in 4% of these incidents. Based on information reported, smoke detector performance was undetermined in 3,394 incidents, or 23%, of Massachusetts' 2013 residential building fires.

Detectors Operated in 57% of Building Fires that Caused Injuries
Detectors operated in 57% of the building fires that caused injuries. This may be because when the occupant is alerted to the presence of the fire, they may try to extinguish it themselves and injure themselves during the escape after the situation has considerably worsened. When alerted to the presence of a fire, occupants should vacate the building and notify the fire department as soon as possible, letting the professionals with the proper training and gear extinguish the fire.

Arson Down 23%
Nine hundred and two (902) Massachusetts fires were considered arson in 2013. The 195 structure arsons, 75 motor vehicle arsons, and 632 outside and other arsons caused four civilian deaths, nine civilian injuries, 30 fire service injuries, and an estimated dollar loss of $6.6 million. This is a 23% decrease in arson from the 1,165 reported in 2012.

Structure arsons increased by 31%, while motor vehicle arsons fell by 40% from 2012 to 2013, although motor vehicle arson has fallen by 99% since 1987. The steady decline of motor vehicle arsons can be explained by the enactment of the Burned Motor Vehicle Reporting Law. It took effect in 1987, and requires owners of burned motor vehicles to complete and sign a report that must also be signed by a fire official from the department in the community where the fire occurred, before they can collect on their fire insurance. Outside and other arsons decreased by 17%.

Firefighters Injured at 1 of Every 5 Vacant Building Fires
One of the most dangerous types of fires for firefighters in 2013 was vacant building fires. Vacant building fires accounted for 56, or 12%, of all firefighter injuries in 2013. These 56 injuries also represent 13% of the number of firefighter injuries at all structure fires. On average there was one firefighter injury for every five vacant building fires.

Conclusion
Most people die in fires at night in the so-called safety of their own home. While the overall trend in the number of deaths continues to decline, cooking fires overtook smoking as the leading cause of all fatal fires. Cooking is something that we do everyday but it is still the leading cause of fires in the home and the leading cause of civilian fire injuries and we must all work to address this problem.

The lack of working smoke alarms or sprinkler systems are contributing factors to these tragedies. It is important to remember that properly maintained detectors provide an early warning of a fire, and residential sprinklers provide the opportunity to safely escape. It is important to make and practice an escape plan.

Massachusetts Fire Departments

Today's firefighters do far more than fight fires. Many are emergency medical technicians or paramedics. All firefighters must be trained to offer first aid if they arrive first at an emergency. They are the first ones called to deal with hazardous materials incidents ranging from the suspected presence of carbon monoxide to a leaking propane truck. They may be called to rescue a child that fell through ice or that locked himself in the bathroom. They get people out of stuck elevators and wrecked cars. They test and maintain their equipment, ranging from self-contained breathing apparatus to hydrants to hoses and trucks. They know the basics of construction, electricity and chemistry. Some undertake the calling of fire prevention and become inspectors or public fire educators. They report their fire incidents through the Massachusetts Fire Incident Reporting System so we can spot trends, problems and successes.

When most people think of the fire department, they think of fire trucks, sirens and flames. Actually, the priority of a fire department is to prevent fires. If prevention fails, then the alarm comes in and the trucks roll.

Fire Department Enforces M.G.L. Chapter 148 and 527 CMR
The fire department is legally required to enforce the provisions of 527 Code of Massachusetts Regulations (CMR). This contains regulation sections on fireworks, dry cleaning, oil burners, gas stations, liquid propane, plastics, transportation of flammable liquids, above ground storage tanks, electrical systems, explosives, storage of flammable substances, marine fueling, model rockets, lumber yards, bulk plants, tentage, salamanders, flammable decorations and curtains, cannon or mortar firing, fire extinguishers, smoke detectors, obstructions and hazards, combustible fibers, rubbish handling, crop ripening, pesticide storage, welding and cutting practices, carbon monoxide, and unvented appliances. The fire department must also enforce the laws contained in Massachusetts General Law Chapter 148.

Inspectors must know the regulations they are enforcing and they must know how to apply the regulations to situations in the community. They must communicate information about weaknesses in plans they review, educate people on violations and perform follow-up inspections. Just as firefighters are sent to the Massachusetts Firefighting Academy to learn the principles of suppression, fire prevention personnel must go to classes to learn the ins and outs of the regulations. These functions also produce a corresponding amount of documentation that is critical to be maintained.

Firefighters Teach the Community Fire and Burn Prevention
Firefighters go out in the community to teach children, seniors and interested community groups how to protect themselves from fire and burns. The statistics in this report are critical to these educators in developing injury prevention programs. As we review our reported calls it may lead to a better-rounded prevention program.

The S.A.F.E. Program
The Student Awareness of Fire Education or S.A.F.E. program was implemented in fiscal year 1996. The Legislature appropriated $1,078,666 to fund public fire education grants. These grants provide local fire departments with funding to educate children about the dangers associated with fire, particularly fires caused by smoking. Any city or town, whose fire department is committed to working with school systems, public health or other community agencies to develop a well-conceived and coordinated fire safety education program message, is invited to apply for these grants. In fiscal year 2013, 209 fire departments shared the $1,090,975 in S.A.F.E. funding.

SAFE
STUDENT AWARENESS OF FIRE EDUCATION

Upton Young Hero – Alexis Sherwin
On Tuesday, May 21, 2013 at 3:30 a.m., 14-year-old Alexis Sherwin awoke from sleep by the sound of smoke detectors in her home. The smoke detectors were activated by smoke from a fire in the garage that was attached to her home. Alexis went to her

younger sister's room, wrapped her in a blanket, and carried her down the stairs and out of their home to the meeting spot outside. Firefighter Bonnie Lopez, S.A.F.E. Educator on the Upton Fire Department credits Alexis' actions as heroic and a credit to the lessons that she learned in school from Upton's S.A.F.E. Educators.

Ms. Tina Gorman, Director, Westfield Council on Aging
Tina Gorman is the director of the Westfield Council on Aging and in the leadership in the statewide Mass. Councils on Aging and Senior Center Directors. She responded to four fire deaths among older adults in her community by creating the *Retire the Fire!* program. She forged partnerships with the local fire department, the Office of the State Fire Marshal, the Westfield News, the local Ace Hardware store and the city's leadership for a full court press on fire safety for older adults during the week in March when we changed our clocks. Her goal was to make sure that older adults had working smoke and CO alarms in their homes, to get the batteries replaced, and to educate the public about senior fire safety. Using flyers, the Mayor's local television show, radio and print media, she promoted the program. The newspaper printed a series of four articles she wrote on four fire safety topics and printed them in English and Spanish. Older adults were encouraged to ask someone they know to test their alarms and replace batteries if need be, and people with older adults in their world were encourage to offer to do so. Meals on Wheels drivers who are trusted home visitors asked clients to complete surveys about whether smoke alarms were working and in many cases were able to test the alarms. The local hardware store provided discount coupons and the Senior Center had a limited ability to send volunteers to test alarms or replace batteries. The Senior Center held a health fair with a focus on fire safety – especially cooking safety. During the week, Westfield residents saw "Retire the Fire!" flyers hung throughout the city. Buttons with the "Retire the Fire" slogan were worn by Council On Aging staff, seniors, and community leaders. The flyers and buttons were reminders that fire safety for Westfield's older adults is a personal, family, and community effort. People were encouraged to take the time to check on older relatives, friends, and neighbors and to volunteer to drive them to the store to purchase a smoke alarms or to help by changing the batteries in their smoke alarms. The City plans to repeat the program again this year.

70 MA Departments Receive $26.2 Million in Federal Grants
Seventy (70) local Massachusetts fire departments received $26.2 million in federal grants during fiscal year 2013.

In the eleventh year of the Federal Assistance to Firefighters Grant program, 60 Massachusetts fire departments received $8.8 million. Thirty-nine (39) departments received $4.2 million for fire operations and firefighter safety. Eight (8) departments received $3.6 million for the purchase of firefighting vehicles. Eight (8) departments received $682,170 under the combination department category and six departments received $366,558 under the all paid/career department category.

Nine (9) fire departments were awarded $17.3 million in Federal SAFER grants that allow for the hiring and recruitment of more firefighters, and one fire department was awarded $31,309 for fire prevention programs. In addition the Massachusetts Firefighting

Academy at the Department of Fire Services also received a grant of $496,956 for personal protective equipment.

98.1% of Massachusetts Fire Departments Participated in MFIRS

By law, fire departments are required to report any fire or explosion resulting in a human casualty or dollar loss to the Office of the State Fire Marshal. This is done through the Massachusetts Fire Incident Reporting System (MFIRS). Three hundred and forty-five (345), or 94%, of Massachusetts' fire departments reported at least one incident to MFIRS during 2013. Fourteen (14), or 3.8%, certified that they had no fires that met the criteria. As an added incentive to comply with the law, a community had to be participating in MFIRS to be eligible for the federal FIRE Act, SAFER grants and state S.A.F.E. funding.

Non-Fire Incidents

Fire Departments Do More Than Just Fight Fires

Massachusetts fire departments do much more than just fight fires. Over the past couple of decades they have branched out and taken on the added responsibilities for EMS responses, multiple types of specialized rescues, hazardous materials incidents, responding during and after natural disasters, as well as the typical service calls, good intent calls, false alarms and the special types of incidents that do not fit neatly into any of the other categories. These numbers have risen as more fire departments automate their reporting and have voluntarily reported all of their incidents to MFIRS.

57% of All Massachusetts Calls Were EMS Incidents

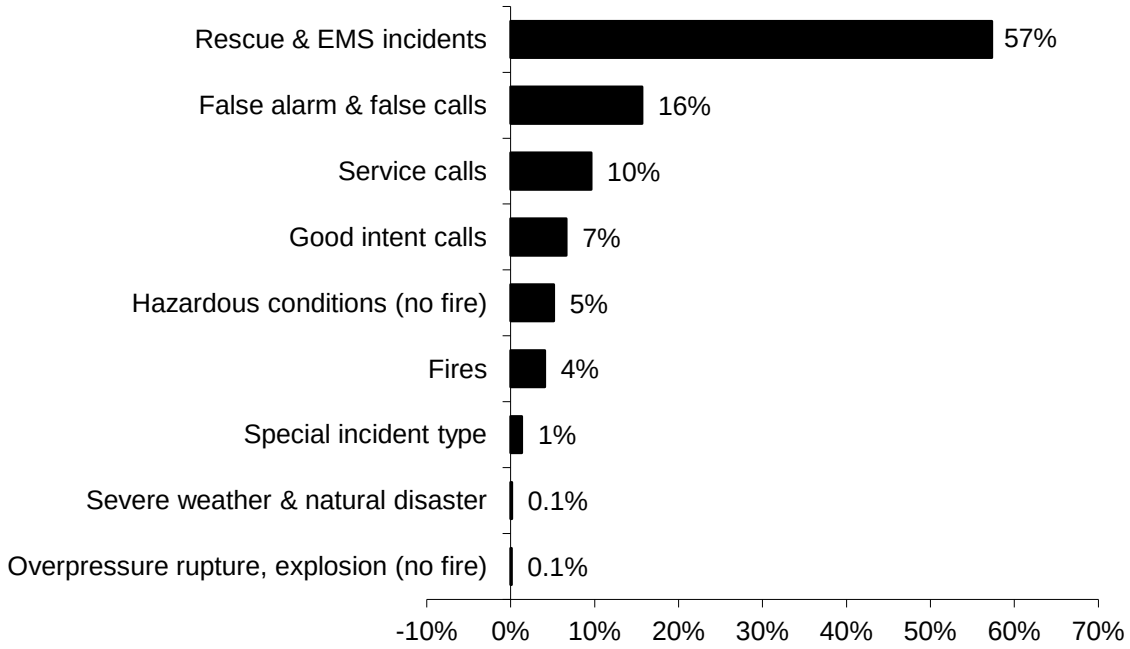
In 2013, 346 fire departments in Massachusetts reported 773,645 responses[1] to MFIRS. Of these 773,645 responses, 742,173 non-fire calls were voluntarily reported.

Of these 742,173 non-fire incidents there were 443,932 (57%) reported rescue and emergency medical services (EMS) calls; 111,072 (16%) reported false alarms or false calls; 71,581 (10%) reported service calls such as lock-outs, water or smoke problems, unauthorized burning or public service assistance; 51,322 (7%) reported good intent calls; 40,356 (5%) reported hazardous condition calls with no fire; 10,391 (1%) reported special incident type calls such as citizen complaints; 1,012 (0.1%) reported severe weather and natural disaster incidents; and 868 (0.1%) reported overpressure rupture, explosion or overheat calls with no fire.

Thirty-one thousand four hundred and seventy-three (31,473), or 4%, of the total responses submitted by Massachusetts fire departments were fires.

[1] These figures include responses in which fire departments gave mutual aid to other fire departments.

2013 Responses by Incident Type



Most Large Cities Voluntarily Reported All of Their Incidents
Boston, the largest city in the Commonwealth, reported 73,680 non-fire incidents in 2013. The City of Worcester, the second largest city in Massachusetts, reported the second most non-fire incidents in 2013 with 28,894 incidents. The next five cities in terms of the number of non-fire calls reported were: Brockton with 20,829; Springfield with 15,662; Lowell with 14,560 calls; New Bedford with 13,599 calls; and Cambridge with 12,763 reported incidents in 2013.

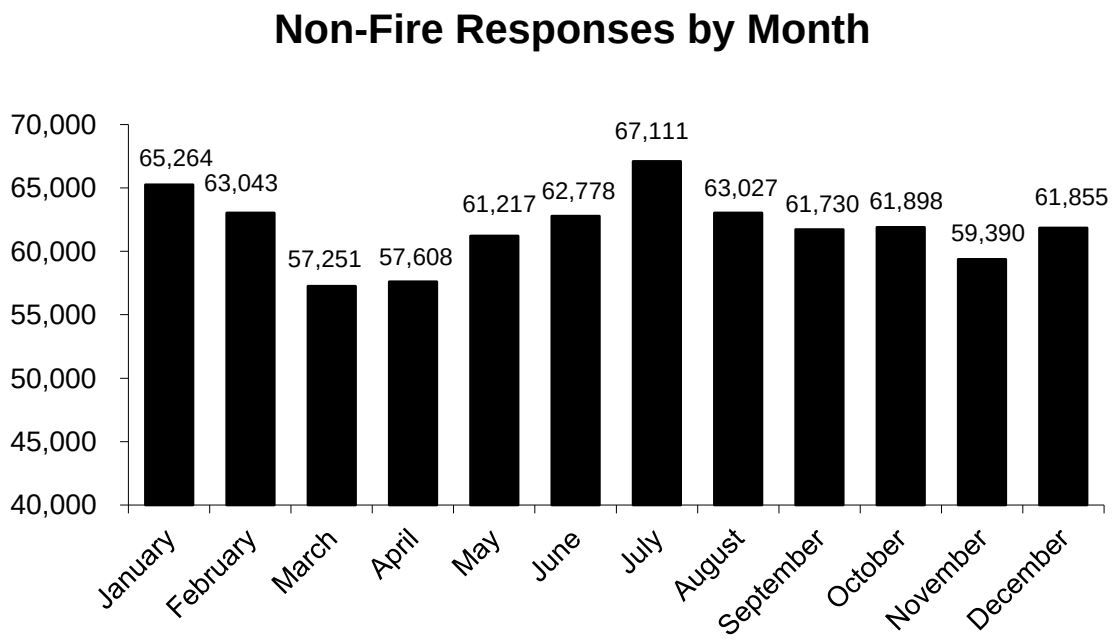
57% of All Fire Department Responses Were EMS Calls
Fifty-seven percent (57%) of all reported 2013 fire department responses in the Commonwealth were emergency medical service calls. The top four types of all calls were all EMS type incidents. Over one-third of all reported incidents, or 35%, were EMS calls excluding vehicle accidents with injury. Twelve percent (12%) were calls where firefighters assisted the EMS crews. Three percent (3%) were classified as rescue, EMS call, other. Three percent (3%) of all reported incidents in 2013 were motor vehicle accidents with injuries. The fifth most reported call type in 2013 was smoke detector activation, no fire - unintentional, accounting for 2% of all reported incidents.

Middlesex & Suffolk Counties Reported 1/3 of All Non-Fire Incidents
Middlesex and Essex Counties reported a combined 33% of all non-fire incidents to MFIRS in 2013. Middlesex County reported 20% of these types of incidents and Essex County reported 13%. Suffolk County submitted the third most non-fire calls, totaling 12% of all the 2013 non-fire incidents. Nantucket County reported 2,673 (0.4%) non-fire

incidents and Dukes County[2] reported 436 non-fire incidents, accounting for 0.1% of all non-fire incidents reported to MFIRS in 2013.

For a complete breakdown of non-fire incidents by incident type and county, refer to the Appendix.

Non-Fire Incidents by Month
July was the month with the most reported non-fire incidents in 2013 (9%), followed by January (9%), and February (8%). March was the month with the least reported non-fire incidents (8%). Interestingly in 2012 February was the month with the least amount of calls. Statistically these incidents are spread evenly from month to month. Ten (10) months each accounted for 8% of the incidents and two months each accounted for 9% of the incidents. The average number of monthly reported non-fire incidents in 2013 was 61,848 calls.



Aid Given & Received
In 2013, Massachusetts fire departments reported that they received mutual or automatic aid at 11,257, or 1%, of all calls. They also reported that they gave mutual, automatic or other aid to other fire departments 16,279 times, or 2% of all calls.

Plymouth County Fire Departments Received the Most Aid
Plymouth County fire departments reported receiving the most aid, accounting for 2,210 incidents, or 20%, of all aid received calls reported by Massachusetts fire departments in 2013. These 2,210 calls represent 3% of their total calls. Norfolk County accounted for

[2] Only 4 local fire departments in Dukes County, Aquinnah, Oak Bluffs, Tisbury and West Tisbury reported non-fire incidents to MFIRS in 2013.

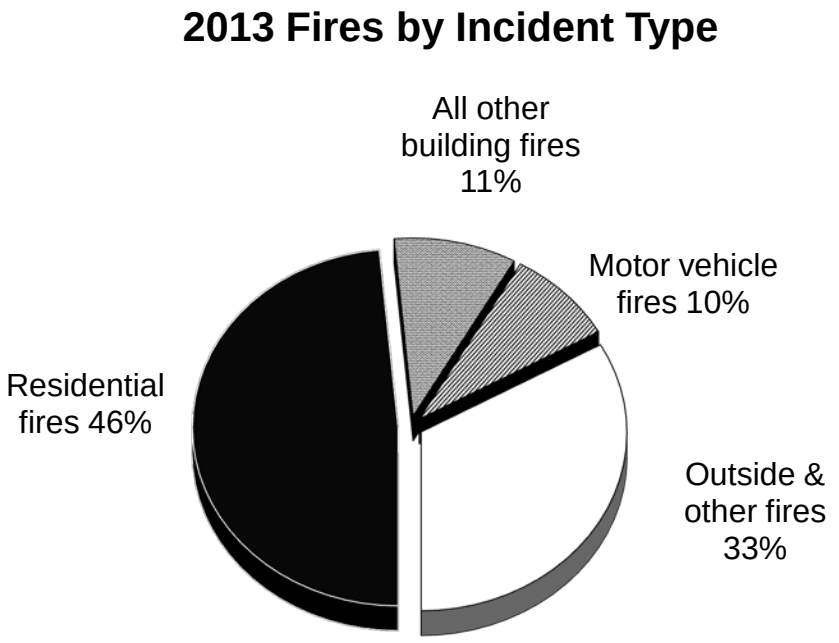
17% of all aid received calls, but these calls only accounted for 2% of their total calls. Middlesex County accounted for 14% of all aid received calls, but these calls only accounted for 1% of Middlesex County's total calls.

Norfolk County Gave the Most Aid
Norfolk County fire departments reported giving the most aid, accounting for 3,002 incidents, or 19%, of all aid given calls reported by Massachusetts fire departments in 2013. These 3,002 calls represent 4% of all of Norfolk County's reported calls in 2013. Middlesex County accounted for 18% of all aid given calls in 2013, but these calls only accounted for 2% of their total calls. Plymouth County accounted for 16% of all aid given calls, but these calls only accounted for 3% of their total calls. Worcester County accounted for 12% of all aid given calls, but these calls only accounted for 2% of their total calls.

Fires by Incident Type

17,353 Structure Fires, 2,587 Vehicle Fires, 9,888 Outside & Other Fires in 2013
There were 29,828 fire and explosion incidents reported by fire departments to the Massachusetts Fire Incident Reporting System (MFIRS) in 2013. The 17,353 structure fires, 2,587 motor vehicle fires, and 9,888 outside and other fires caused 44 civilian deaths, 323 civilian injuries, 478 fire service injuries, and an estimated dollar loss of $244.6 million in property damages.

The following graph depicts the percentage of the major types of fires as part of the whole Massachusetts fire problem. In 2013, 57% of all reported fires were structure fires.



The majority of fires were in people's homes. Forty-six percent (46%) of all fires in the Commonwealth and 83% of all structure fires occurred in someone's home; only 11% of all fires, and 17% of all structure fires, occurred in a type of building other than a residence. Ten percent (10%) were reported motor vehicle fires, while 33% were classified as outside and other fires.

17,353 Structure Fires, 28 Civilian Deaths & 275 Civilian Injuries
Massachusetts fire departments reported 17,353 structure fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2013. These fires killed 28 civilians and caused 275 civilian injuries, 416 fire service injuries, and an estimated $212 million in property damage. Structure fires accounted for 58% of the total incidents and 64% of the civilian deaths in 2013. Structure fires were down 1% from 2012. There were 195 structure arsons in 2013. Structure fires in the Massachusetts Fire Incident Reporting System include any fires that occur inside or on a structure.

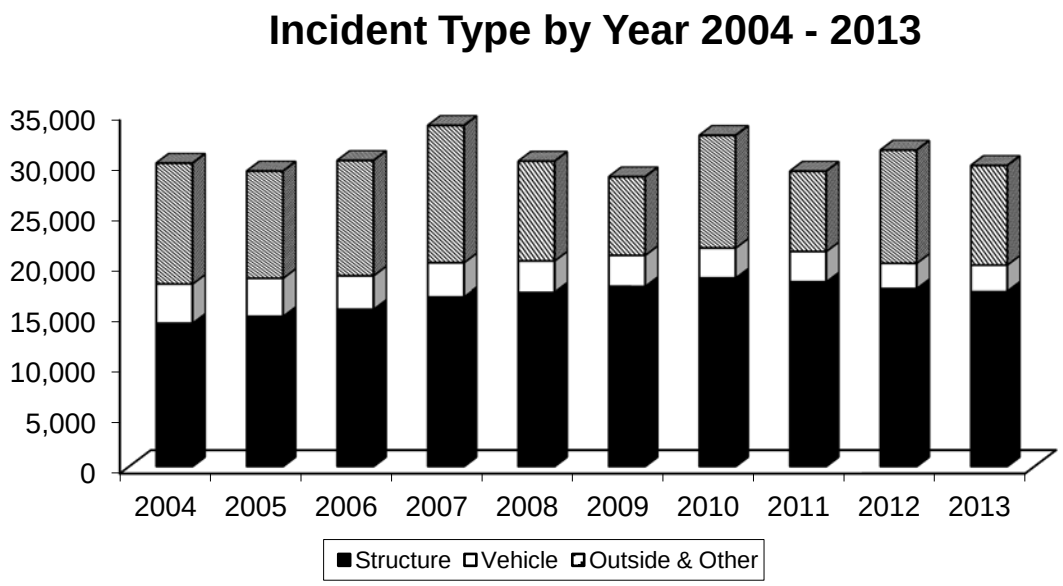
2,587 Motor Vehicle Fires Account for 10% of Reported Fires
The 2,587 motor vehicle fires caused 10 civilian deaths, 24 civilian injuries, 16 fire service injuries, and an estimated $27.3 million in property damage. These incidents accounted for 10% of the reported 29,828 fires in 2013. Motor vehicle fires accounted for 23% of civilian fire deaths. Motor vehicle fires were up 3% from 2012. There were 75 motor vehicle arsons in 2013. According to MFIRS, a motor vehicle fire is defined as one involving a car, truck, boat, airplane, construction equipment or other mobile property that does not occur inside a structure.

9,888 Brush, Trash, and Other Outside Fires
The 9,888 outside and other fires caused six civilian deaths, 24 civilian injuries, 46 fire service injuries, and an estimated dollar loss of $5 million. The 4,968 trees, grass and brush fires, 3,045 outside rubbish fires, 850 special outside fires, 48 cultivated vegetation or crop fires, and 977 other fires accounted for 33% of the total fire incidents in 2013, and 14% of civilian fire deaths. These fires were up 40% from the 7,974 outside and other fire incidents reported in 2012. There were 632 outside and other arsons in 2013. Fire departments are required to report any fire or explosion resulting in a dollar loss or human casualty to MFIRS. Fires that do not result in a loss may be reported. Many fire departments, particularly those that submit data electronically, voluntarily report these fires. These figures should be considered an underestimate of the "no loss" fire incidents to which fire departments actually responded.

The following table indicates the total number of fires and the subsequent breakdown into structure fires, motor vehicle fires and outside and other fires for the years 2004 through 2013. The total number of fire incidents in 2013 was down 5% from the 31,353 incidents reported in 2012. Overall, fires have been on an increasing trend since 2001. This is due the increased number of departments that have automated their incident reporting and because of this automation, have begun to use the codes for confined fires inside of structures, Incident Types 113 – 118. In the past many of these confined fires may have been coded as smoke scares or other non-fire types of incidents.

Year	Total Fires	Structure Fires	Vehicle Fires	Other Fires
2013	29,828	17,353	2,587	9,888
2012	31,353	17,607	2,511	11,235
2011	29,255	18,266	3,015	7,974
2010	32,817	18,653	2,978	11,186
2009	28,705	17,818	3,081	7,806
2008	30,254	17,269	3,085	9,900
2007	33,806	16,837	3,346	13,623
2006	30,324	15,607	3,270	11,447
2005	29,272	14,909	3,717	10,646
2004	30,057	14,226	3,831	12,000

The following graph depicts the same numbers in a different manner. It shows what portion of the fire problem each incident type represents. Since 2001[3], the number of structure fires steadily increased, but in 2012 and again in 2013 they decreased. During the past 10 years motor vehicle fires have steadily declined. However, the trend for outside and other fires seems to be developing a 'wave' pattern where the number of these types of fires rises or 'crests' every two to three years mostly due to the dry and hot weather patterns in the spring and summer that allow for an increased vulnerability of vegetation to brush fires.



[3] 2001 was the first year of MFIRS v5.0.

Structure Fires

17,353 Structure Fires Account for 58% of Reported Fires, 64% of Fire Deaths
The 17,353 structure fires caused 28 civilian deaths, 275 civilian injuries, 416 fire service injuries, and an estimated dollar loss of $212 million. The average structure fire caused $12,234 in property damage. Structure fires accounted for 58% of reported fires and 64% of the civilian fire deaths in 2013.

According to the MFIRS definition, any fire occurring inside or on a structure is considered a structure fire. This includes chimney fires, cooking fires, indoor waste basket fires, fires on a back porch, exterior trim fires, and vehicle fires that occur inside a garage that extend beyond the vehicle. The number of structure fires dropped by 254, or 1%, from the 17,607 reported in 2012.

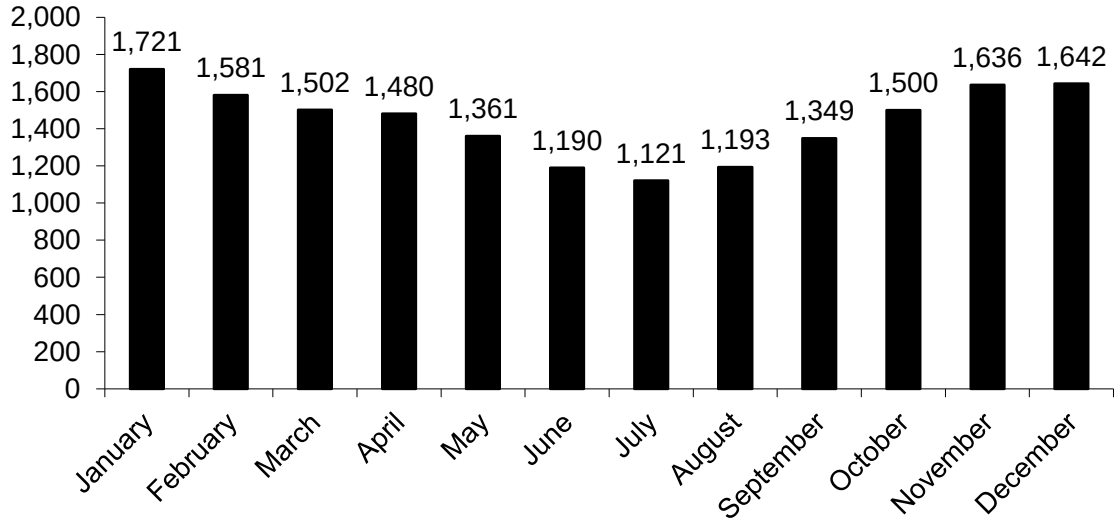
Building Fires

Most, but not all structure fires occur in buildings. It is important to distinguish between the two because many structures that are not buildings, like bridges, tunnels, and towers, do not have the same fire prevention and alarm devices that many buildings are required to have, and their inclusion in this discussion could skew the figures.

There were 17,276 building fires of different types in Massachusetts in 2013. These 17,276 building fires accounted for 99.6% of all structure fires in Massachusetts.

Building Fires Most Common in Colder Months
Heating equipment is the second leading cause of building fires. It is not surprising that January was the peak month for these incidents in 2013. December ranked second and November had the third largest number of building fires. The warmer months had significantly fewer building fires. The fewest fires occurred in July, and June had the second lowest frequency of these incidents; August had the third lowest number of building fires in 2013.

2013 Building Fires by Month

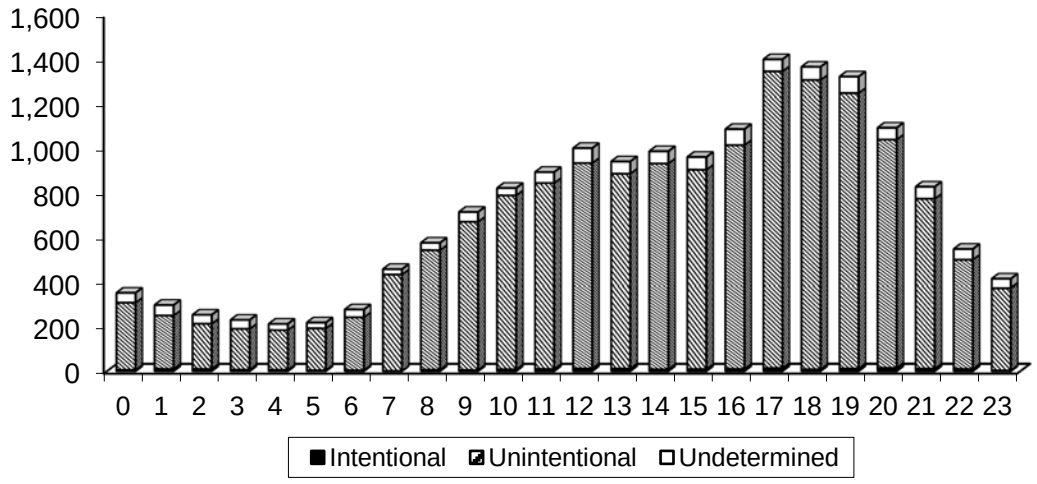


Building Fires Most Common Around Dinner Time

Cooking is the leading cause of building fires. Predictably, building fires occurred most often around dinnertime. Intentionally set building fires were most common between 7:00 p.m. and 11:00 p.m. Unintentional building fires reached their lowest point between 3:00 a.m. and 5:00 a.m. and increased fairly steadily to a peak between 5:00 p.m. and 7:00 p.m.

This graph shows fire frequency by time of day on the 24-hour clock for building arsons, unintentional building fires and building fires of undetermined origin. A fire is considered arson when the ignition factor is incendiary or suspicious. Midnight to 1:00 a.m. is represented by 0, 1:00 a.m. to 2:00 a.m. is represented by 1, etc.

Building Fires by Hour



84% of Building Fires Occurred in Residential Occupancies

Eighty-four percent (84%) of the state's 17,276 building fires and 27 of the 28 civilian building fire deaths occurred in residential occupancies. The following table shows the number of building fires, civilian deaths, civilian injuries, fire service injuries, estimated dollar loss and the percentage of total building fires for each occupancy group. Institutional properties are those used for purposes such as medical or other treatment of persons suffering from physical or mental illness, disease, or infirmity; for the care of infants, convalescents, or aged persons; and for penal or corrective purposes. Industrial facilities, utilities, defense facilities, laboratories, agricultural and mining facilities are considered basic industries. Special properties include buildings such as outbuildings, bus stop shelters and toll booths.

Boston & Hyannis Building Fires Have Most Injuries

- On April 28, 2013, at 6:36 a.m., the Boston Fire Department was called to a fatal smoking fire in a two-family home. The 22-year old female victim was a college student at Boston University living in off-campus housing. Approximately 20 people were living in the home. The victim was living in an attic apartment. She was trapped above the fire and her exits were blocked by the flames. Abandoned smoking materials started the fire in an interior stairway. There were eight other civilian injuries and seven firefighter injuries at this fire. Heat detectors were present and alerted the occupants. There were no sprinklers. Damages from this fire were estimated to be $610,000.
- On December 29, 2013, at 4:38 a.m., the Hyannis Fire Department was dispatched to a candle fire in a five-unit apartment building. The fire began when a candle ignited curtains in a second story living room. Five (5) civilians were injured at this fire. Detectors were present but did not operate because of a power failure. There were no sprinklers. Damages were estimated to be $17,000

BUILDING FIRES BY OCCUPANCY TYPE

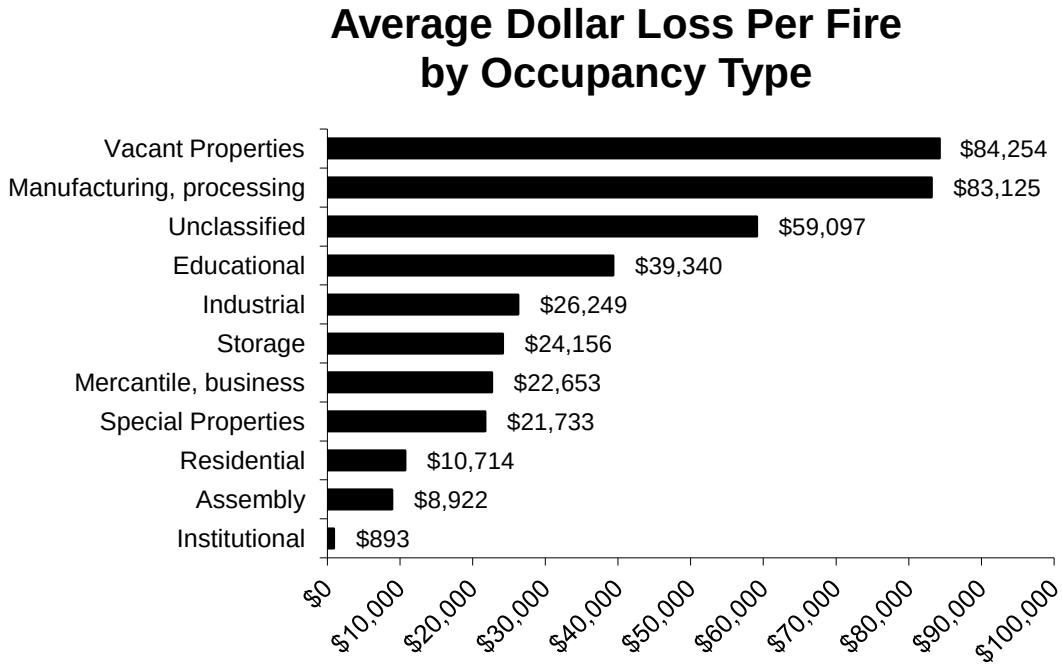
Occupancy	# of Fires	% of Total	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss	Avg. Dollar Loss
Public assembly	678	4%	13	4	0	0	$6,049,268	$8,922
Educational	290	2%	4	0	0	0	11,408,659	39,340
Institutional	489	3%	1	6	0	0	436,726	893
Residential	**14,476**	**84%**	**355**	**253**	**0**	**27**	**155,089,310**	**10,714**
1- & 2-Family homes	*5,324*	*31%*	*194*	*140*	*0*	*19*	*92,165,141*	*17,311*
Apartments	*7,270*	*42%*	*156*	*101*	*0*	*8*	*60,446,440*	*8,315*
All other residential	*1,882*	*11%*	*5*	*12*	*0*	*0*	*2,477,729*	*1,317*
Mercantile, business	708	4%	13	5	0	1	16,038,407	22,653
Basic industry	57	0.3%	2	1	0	0	1,496,168	26,249
Manufact., processing	110	1%	8	1	0	1	9,143,696	83,125
Storage properties	238	1%	11	5	0	0	5,749,160	24,156
Special properties	185	1%	4	0	0	0	4,020,563	21,733
Unclassified	45	0.1%	5	0	0	0	2,659,358	59,097
Total	**17,276**	**100%**	**416**	**274**	**0**	**28**	**$212,091,315**	**$12,277**

Occupancy Group Definitions

- **Public assembly**: This category includes amusement and recreation places such as bowling alleys, skating rinks, ballrooms, gymnasiums, arenas, stadiums, playgrounds, churches, funeral parlors, clubs, libraries, museums, courtrooms, restaurants, taverns, passenger terminals, theatres and studios.
- **Educational**: This category includes classrooms from nursery school through college, and trade and business schools. Dormitories are considered residential.
- **Institutional**: This category includes institutions that care for the aged, the young, the sick or injured, the physically restrained, the physically inconvenienced and the mentally handicapped.
- **Residential**: This occupancy group includes one- and two-family homes, apartments, rooming, boarding or lodging houses, dormitories, hotels, motels and home hotels, and residential board and care facilities. Seasonal homes are included here.
- **Mercantile, business**: Retail establishments, service stations, laundries, offices, banks, medical offices and post offices are included in this category.
- **Basic industry**: This category includes nucleonics, energy production plants, laboratories, communications facilities, defense facilities, document facilities, utility and energy distribution systems, agriculture, forests, hunting and fishing, mining, and manufacturing of mineral products such as glass, clay or cement.
- **Manufacturing, processing**: Manufacturing that is not listed under Basic Industry is listed here.
- **Storage property**: This category includes warehouses, barns, garages and tool sheds.
- **Special property**: This category includes, dumps, sanitary landfills, recycling collection points, outbuildings, bus stop shelters, phone booths, bridges, roads, railroad properties, outdoor properties, water areas, aircraft areas and equipment operating areas outbuildings.

Vacant Properties Have Highest Average Dollar Loss Per Fire
Vacant properties[4] had the highest dollar loss per fire of any property type. In 2013, the average dollar loss for a building fire at a vacant property was $84,254. This is a 50% increase over the 2012 average dollar loss per vacant property fire at $56,028 per fire. Manufacturing and processing facilities had the second highest dollar loss per fire for any property type. In 2013, the average dollar loss for a building fire at a manufacturing and processing facility was $83,125.

Unclassified properties had the third highest average dollar loss at $59,097. Educational facilities had the next highest average dollar loss per fire at $39,340; industrial facilities were fifth with an average dollar loss per fire at $26,249. Storage properties were next with an average dollar loss of $24,156 and mercantile and business properties had an average dollar loss at $22,653 per fire. Special properties had an average dollar loss per fire of $21,733. Residential properties had $10,714 per fire and public assembly properties had $8,922 in average dollar loss per fire. Institutional facilities had the lowest average dollar loss at $893 per fire.



[4] Vacant property is not an occupancy type. Any property use can be a vacant property if certain conditions are met. It is included here with the other property use categories to illustrate how dangerous and destructive fires in these types of buildings can be.

2013 Massachusetts Building Fires by Property Use

MFIRS Code	Property Use	# of Building Fires
	Assembly	**678**
100	Assembly, other	34
110	Fixed use recreation places, other	11
111	Bowling alley	2
113	Electronic amusement center	3
114	Ice rink: indoor, outdoor	1
115	Roller rink: indoor or outdoor	1
116	Swimming facility: indoor or outdoor	1
120	Variable use amusement, recreation places	6
121	Ballroom, gymnasium	4
122	Convention center, exhibition hall	5
123	Stadium, arena	2
124	Playground	18
130	Places of worship, funeral parlors	9
131	Church, mosque, synagogue, temple, chapel	93
140	Clubs, other	9
141	Athletic/health club	18
142	Clubhouse	13
143	Yacht Club	2
150	Public or government, other	8
151	Library	9
152	Museum	8
154	Memorial structure, including monuments & statues	1
155	Courthouse	3
160	Eating, drinking places	74
161	Restaurant or cafeteria	288
162	Bar or nightclub	30
170	Passenger terminal, other	1
171	Airport passenger terminal	6
173	Bus station	1
174	Rapid transit station	8
180	Studio/theater, other	2
181	Live performance theater	3
182	Auditorium or concert hall	2
183	Movie theater	2
	Educational	**290**
200	Educational, other	38
210	Schools, non-adult	16
211	Preschool	15
213	Elementary school, including kindergarten	51
215	High school/junior high school/middle school	79

MFIRS Code	Property Use	# of Building Fires
241	Adult education center, college classroom	64
254	Day care, in commercial property	22
255	Day care, in residence, licensed	5
	Health care, detention & correction	**489**
300	Health care, detention, & correction, other	37
311	24-hour care Nursing homes, 4 or more persons	127
321	Mental retardation/development disability facility	74
322	Alcohol or substance abuse recovery center	52
323	Asylum, mental institution	11
331	Hospital - medical or psychiatric	108
332	Hospices	7
340	Clinics, Doctors offices, hemodialysis centers	16
341	Clinic, clinic-type infirmary	8
342	Doctor, dentist or oral surgeon's office	11
361	Jail, prison (not juvenile)	10
363	Reformatory, juvenile detention center	19
365	Police station	9
	Residential	**14,476**
400	Residential, other	560
419	1 or 2 family dwelling	5324
429	Multifamily dwellings	7270
439	Boarding/rooming house, residential hotels	457
449	Hotel/motel, commercial	126
459	Residential board and care	213
460	Dormitory type residence, other	440
462	Sorority house, fraternity house	26
464	Barracks, dormitory	60
	Mercantile, Business	**708**
500	Mercantile, business, other	134
511	Convenience store	28
519	Food and beverage sales, grocery store	157
529	Textile, wearing apparel sales	6
539	Household goods, sales, repairs	14
549	Specialty shop	40
557	Personal service, including barber & beauty shops	23
559	Recreational, hobby, home repair sales, pet store	4
564	Laundry, dry cleaning	34
569	Professional supplies, services	14
571	Service station, gas station	12
579	Motor vehicle or boat sales, services, repair	39
580	General retail, other	19

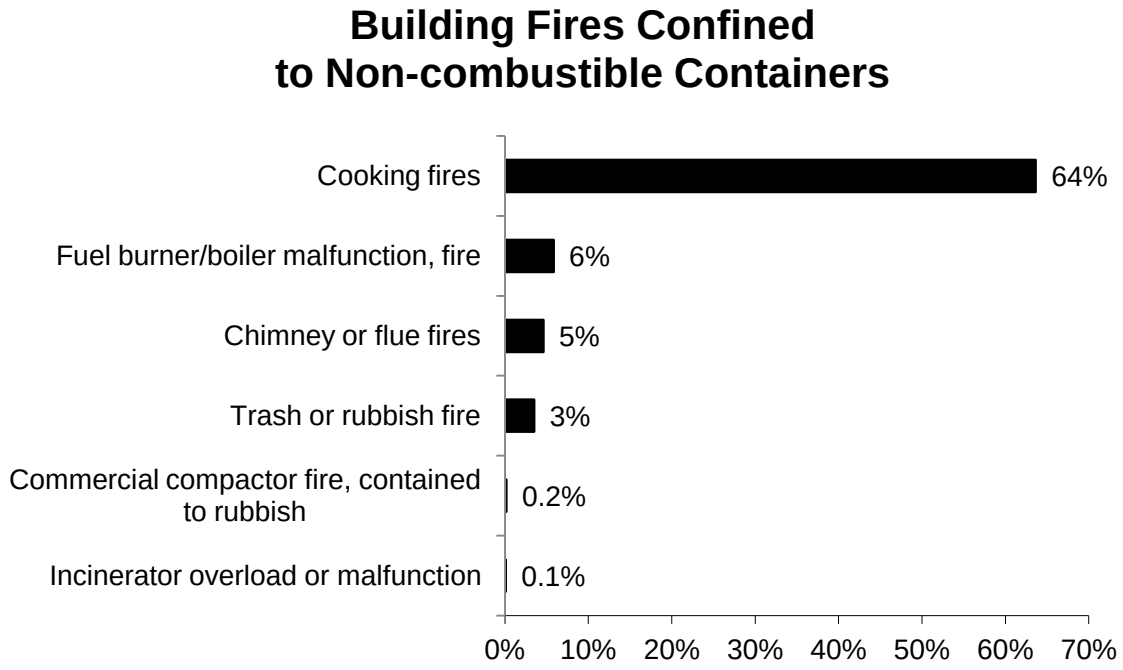
MFIRS Code	Property Use	# of Building Fires
581	Department or discount store	8
592	Bank	20
593	Office: veterinary or research	2
596	Post office or mailing firms	3
599	Business office	151
	Industrial, Utility, Defense, Agriculture, Mining	**57**
600	Utility, defense, agriculture, mining, other	4
610	Energy production plant, other	2
614	Steam or heat generating plant	3
615	Electric generating plant	6
629	Laboratory or science laboratory	18
631	Defense, military installation	1
639	Communications center	2
640	Utility or Distribution system, other	3
642	Electrical distribution	2
644	Gas distribution, pipeline, gas distribution	1
645	Flammable liquid distribution, pipeline, flammable	1
647	Water utility	1
648	Sanitation utility	6
655	Crops or orchard	1
659	Livestock production	3
669	Forest, timberland, woodland	1
679	Mine or quarry	2
700	**Manufacturing, processing**	**110**
	Storage	238
800	Storage, other	20
807	Outside material storage area	7
808	Outbuilding or shed	82
819	Livestock, poultry storage	4
839	Refrigerated storage	1
849	Outside storage tank	1
880	Vehicle storage, other	13
881	Parking garage, (detached residential garage)	54
882	Parking garage, general vehicle	6
888	Fire station	6
891	Warehouse	41
898	Dock, marina, pier, wharf	2
899	Residential or self storage units	1

MFIRS Code	Property Use	# of Building Fires
	Outside or special property	**185**
900	Outside or special property, other	44
919	Dump, sanitary landfill	11
921	Bridge, trestle	2
922	Tunnel	1
926	Outbuilding, protective shelter	17
931	Open land or field	8
935	Campsite with utilities	1
936	Vacant lot	1
938	Graded and cared-for plots of land	16
951	Railroad right of way	2
952	Railroad yard	5
960	Street, other	11
962	Residential street, road or residential driveway	31
963	Street or road in commercial area	11
965	Vehicle parking area	22
981	Construction site	1
983	Pipeline, power line or other utility right of way	1
	Other/Unclassified	**37**
000	Property Use, other	26
	Total Building Fires	**17,276**

78% of Building Fires Are Confined to Non-Combustible Containers[5]
Thirteen thousand four hundred and thirty-five (13,435), or 78%, of all building fires, were reported as confined to non-combustible containers in 2013. Ten thousand nine hundred and ninety-two (10,992) of the reported fires were cooking fires confined to a non-combustible container, accounting for 64% of building fires. One thousand and six (1,006), or 6%, were fires confined to a fuel burner or boiler malfunction. Seven hundred and ninety-five (795), or 5%, of all building fires reported in 2013, were fires confined to a chimney or flue. Six hundred and three (603), or 3%, of these fires were contained rubbish fires. Twenty-eight (28), or less than 1%, were commercial compactor fires that were confined to the rubbish. Eleven (11), or less than 1%, of these fires in the Commonwealth, were contained to an incinerator overload or malfunction.

Confined building fires decreased by 299 incidents, or 2%, from the 13,734 reported in 2012.

[5] 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.

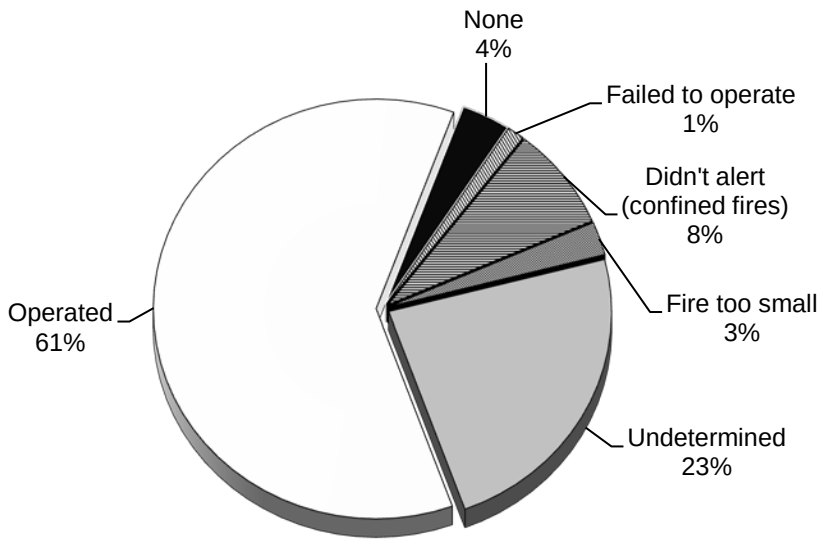


Detectors Operated in 61% of Building Fires

Smoke or heat detectors operated in 10,577, or 61%, of the building fires in 2013. In 8% of these fires[6], the detectors did not alert the occupants. Detectors were present but did not operate in 1% of these incidents. In 4% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 3% of the fires. Smoke detector performance was undetermined in 4,050 incidents, or 23%, of Massachusetts' 2013 building fires.

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

Smoke Detector Operation in Building Fires



The following table shows detector performance by occupancy type for building fires.

DETECTOR PERFORMANCE

	Operated	Failed to Operate	Didn't Alert (Conf.)	Fire Too Small	None	Unknown	Total
Public assembly	447	3	36	26	27	139	678
Educational	188	0	21	15	5	61	290
Institutional	396	1	13	15	3	61	489
Residential	9,042	207	1,179	200	321	3,527	14,476
Mercantile, business	367	8	51	37	57	188	708
Basic industry	26	0	7	3	7	14	57
Manufacturing	39	0	7	9	16	39	110
Storage properties	21	0	7	5	149	56	238
Special properties	31	1	52	0	24	77	185
Unclassified	20	0	3	0	2	20	45
Total	**10,577**	**220**	**1,376**	**310**	**611**	**4,182**	**17,276**

$5.3 Million Fire in Boston is Largest Loss Building Fire

- On February 20, 2013, at 9:18 a.m., the Boston Fire Department was called to an electrical fire in a five-unit apartment building. The fire was caused by an unspecified short-circuit somewhere in the fourth floor ceiling. There were no injuries associated with this fire. Smoke detectors were present and alerted the occupants. The building was not sprinklered. Damages were estimated to be $5.3 million.

North Brookfield Has 2nd Largest Loss Building Fire in 2013

- On October 26, 2013, at 6:54 p.m., the North Brookfield Fire Department was called to a fire at the Valley View School of undetermined cause. The fire began in a first floor closet. No one was injured at this fire. Detectors were present and alerted the occupants. Sprinklers were not present. Damages from this fire were estimated to be $5 million.

Overall, there were 25 large loss building fires reported to MFIRS in 2013 with a total combined dollar loss of $51.2 million, representing 24% of all the estimated dollar loss of Massachusetts' building fires in 2013.

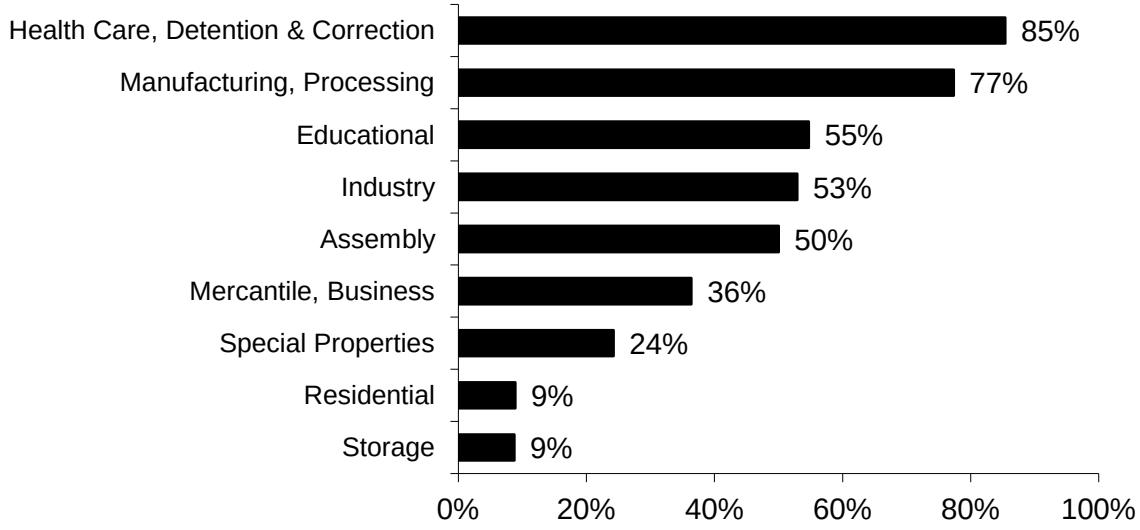
13% of Unconfined Fires Occurred in Buildings with AES

Overall, 575, or 13%, of the 4,460 unconfined[7] building fires in 2013 occurred in buildings that had automatic extinguishing systems (AES), regardless of whether the fire was large enough to activate the system. In MFIRS, an AES can be a wet or dry sprinkler system, a dry chemical system, a foam system, a halogen-type system, a CO^2 system, or some other fire suppression system.

The following chart lists the percentage of unconfined fires in buildings that were at least partially protected by an AES for that specific property use. Manufacturing and processing facilities and institutional properties were the most likely to have an AES. Eighty-five percent (85%) of the fires in health care, detention and correctional facilities; 77% of the fires in manufacturing or processing facilities; and 55% of the fires in educational facilities. Fifty-three percent (53%) of the fires occurred in basic industrial facilities and 50% of the fires in public assembly properties occurred in buildings with these systems, and 36% of the fires in mercantile and business properties occurred in buildings with an automatic extinguishing system. Twenty-four percent (24%) of the fires in special properties occurred in an AES protected structure. Nine percent (9%) of residential fires occurred in buildings with an automatic extinguishing system and another 9% of fires in storage facilities occurred in buildings protected by an automatic extinguishing system.

[7] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) also does not have to have a Structure Fire Module completed. Therefore the fields concerned with detector and sprinkler presence and performance would not be completed. These incidents are not included in the analysis of these fields.

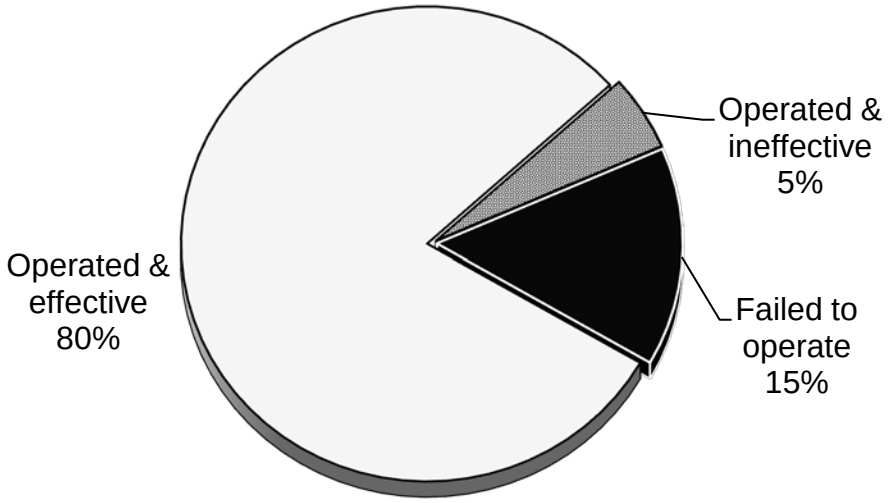
Fires in AES Protected Buildings by Property Use



AES Work in 80% of Building Fires When Installed & Maintained

AES were present and operated in 149, or 85%, of the 175 building fires in buildings protected by an automatic extinguishing system, which had a reported fire large enough for the AES to activate in Massachusetts in 2013. Of these 149 fires, the systems were effective in 140, or 80%, and ineffective in nine, or 5%, of these incidents. AES were present but failed to operate in 26, or 15%, of these 175 building fires. Some of the reasons for the automatic extinguishing system failures were reported to be: the fire was started in an area not protected by the system; the system was shut off; a lack of maintenance to the system; and manual intervention.

AES Status in AES Protected Buildings



The table below shows AES performance by occupancy group for those incidents where AES presence and performance were reported.

AUTOMATIC EXTINGUISHING SYSTEM PERFORMANCE

	Operated	Did Not Operate	Fire Too Small	None	Unknown	Total
Assembly	11	4	34	17	5	71
Educational	6	1	16	4	2	29
Institutional	1	1	29	10	0	41
Residential	77	9	95	80	3	264
Mercantile, business	15	8	36	19	1	79
Basic industry	2	1	5	0	1	9
Manufacturing	27	1	17	12	1	58
Storage properties	7	0	7	2	0	16
Special properties	3	1	0	2	2	8
Unclassified	0	0	0	0	0	0
Total	**149**	**26**	**239**	**146**	**15**	**575**

High Rise Buildings Must be Fully Equipped with Sprinklers

Evacuating a high-rise building while fighting a raging fire is a logistical nightmare for firefighters. Automatic sprinklers make these buildings much safer for residents, office workers, visitors and firefighters. Under the provision of MGL Chapter 148, Section 26A 1/2, all existing buildings of more than 70 feet in height above the mean grade had to be retrofitted by a fully protected adequate system of automatic sprinklers by March 30, 1998. This took effect in 1988. All new high rises are required to have automatic sprinklers.

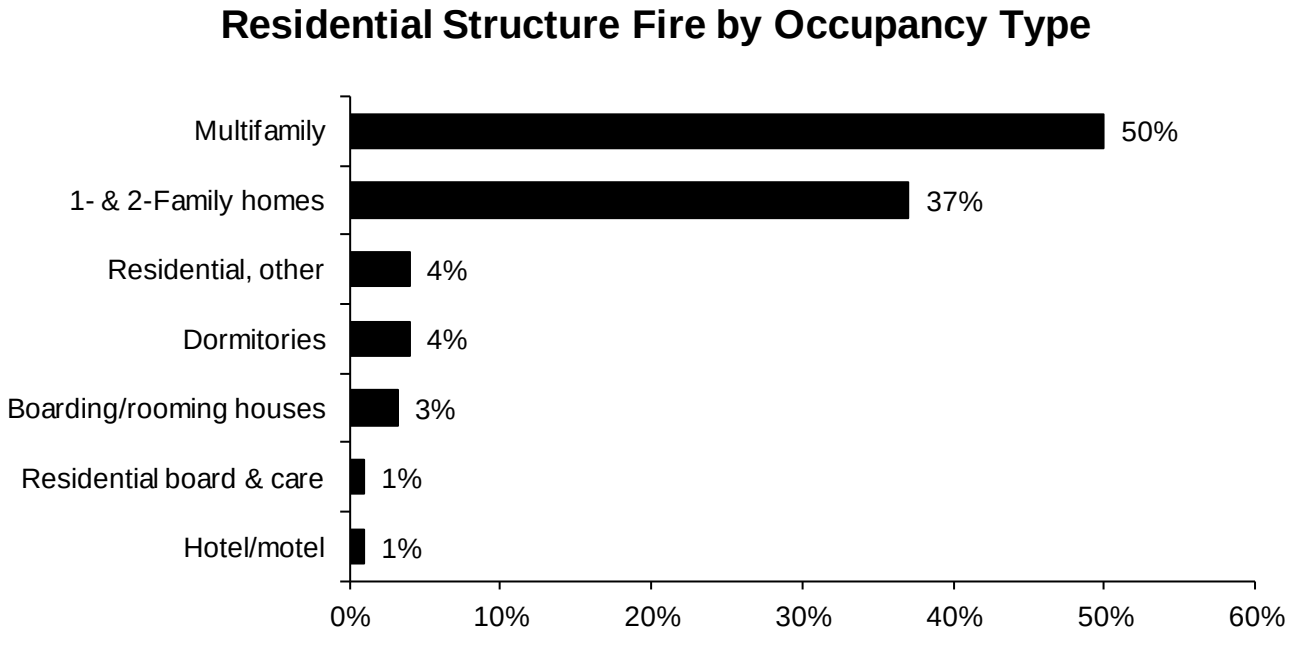
Written Permit Required from Fire Department before Disconnecting Sprinklers

Under the provisions of MGL Chapter 148, Section 27A, it is illegal to "…shut off, disconnect, obstruct, remove or destroy…any part of any sprinkler system, water main, hydrant, or other device used for fire protection…without first procuring a written permit from the head of the fire department." The head of the fire department is authorized to issue conditions necessary to provide protection from fire and the preservation of public safety. In the event of an emergency, the system may be shut down as long as the fire department head is immediately notified of the action and when the system is back in service. Violators may be punished by imprisonment for not more than one year and/or a fine of not more than $1,000.

Residential Building Fires

84% of Building Fires Occurred in Residential Occupancies
Massachusetts fire departments reported that 14,476, or 84%, of the 17,276 building fires occurred in residential occupancies. These fires caused 27 civilian deaths, 253 civilian injuries, 355 fire service injuries and an estimated dollar loss of $155.1 million. The average dollar loss per fire was $10,714. The total number of reported residential building fires decreased by 127, or 1%, from the 14,603 reported in 2012.

1/2 of All Residential Fires Occur in Apartments
Half, or 50%, of all residential building fires in 2013 occurred in multifamily apartment buildings. Thirty-seven percent (37%) of these fires happened in one- or two-family homes. Dormitories and unclassified residences each accounted for 4% of residential fires in Massachusetts. Three percent (3%) occurred in rooming houses, and residential board and care facilities; and hotels or motels each accounted for 1% of the residential building fires in 2013.



The following table shows the statistics for fires, firefighter and civilian casualties and the estimated dollar loss by residential occupancy.

RESIDENTIAL BUILDING FIRES

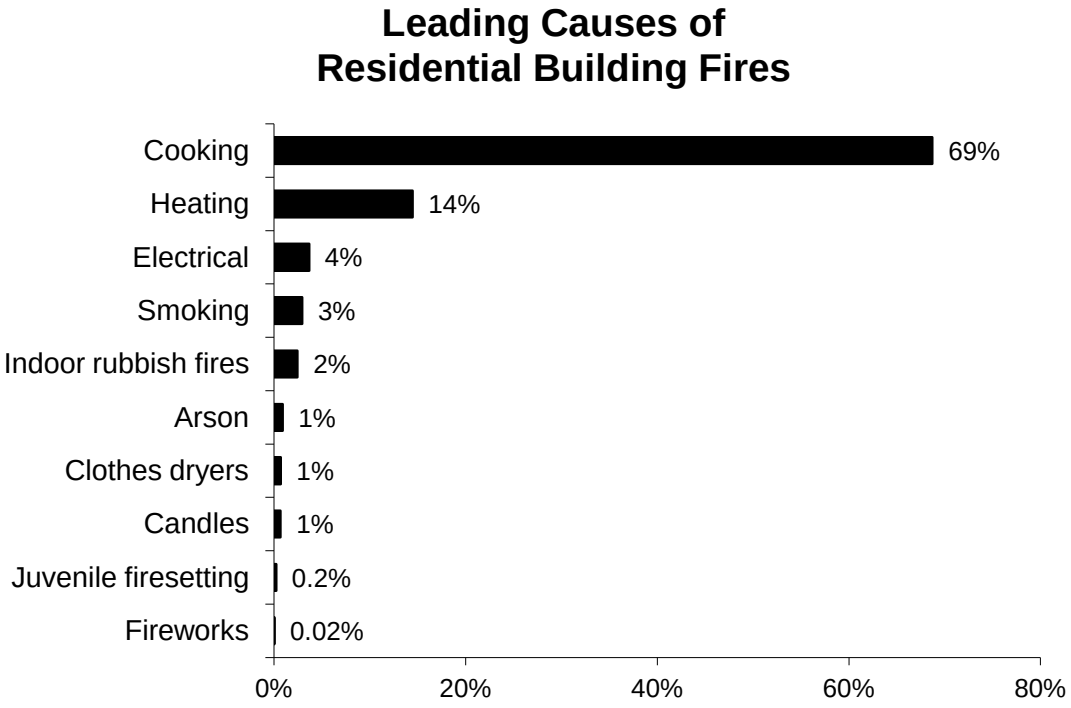
Occupancy	# of Fires	% of Total	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss
1- & 2-Family homes	5,324	37%	194	140	0	19	$92,165,141
Multifamily	7,270	50%	156	101	0	8	60,446,440
Rooming houses	457	3%	1	6	0	0	450,116
Hotels & motels	126	1%	0	1	0	0	369,268
Residential board & care	213	1%	0	0	0	0	44,224
Dormitories	526	4%	1	1	0	0	422,850
Unclassified	560	4%	3	4	0	0	1,191,271
Total	**14,476**	**100%**	**355**	**253**	**0**	**27**	**$155,089,310**

Residential Occupancy Sub-Group Definitions

- **1- & 2-Family**: This category includes one- or two-family homes, detached, manufactured homes, mobile homes and duplexes.
- **Multifamily dwellings**: This category includes apartments, condominiums, townhouses, rowhouses and tenements.
- **Boarding, rooming houses**: This category includes residential hotels and shelters.
- **Hotels, motels**: This occupancy group includes commercial hotels, motels or inns.
- **Residential board and care**: This category includes long-term care and half-way houses. Excluded are nursing facilities (Property Use code = 311).
- **Dormitories**: This category includes dormitory type residences and sorority or fraternity houses. It also includes nurses' quarters, military barracks, monasteries/convents, dormitories, bunk houses and workers' barracks.
- **Residential, other**: Any type of residential occupancy that is not defined above.

Cooking Causes Over 2/3 of Residential Building Fires

The leading causes of residential building fires in 2013 were cooking, heating, electrical problems, indoor rubbish fires, smoking, arson, candles, clothes dryer fires, juvenile firesetting, fireworks, and Christmas tree fires. Cooking was the leading cause of residential building fires, accounting for 9,946, or 69%, of the 14,476 incidents. Heating equipment accounted for 2,093, or 14%, of the total fires. Electrical problems caused 530, or 4%, of incidents. The unsafe use and disposal of smoking materials accounted for 427, or 3%, of these incidents. Indoor rubbish fires were the cause of 355, or 3%, of residential building fires. Arson accounted for 130, or 1%, of residential building fires. Clothes dryer fires were the cause for 101, or 1%, of these incidents. One percent (1%), or 99, were caused by candles. Juvenile firesetting accounted for 32, or less than 1%, of residential building fires. Fireworks caused three, accounting for less than 1% of these fires in Massachusetts in 2013.



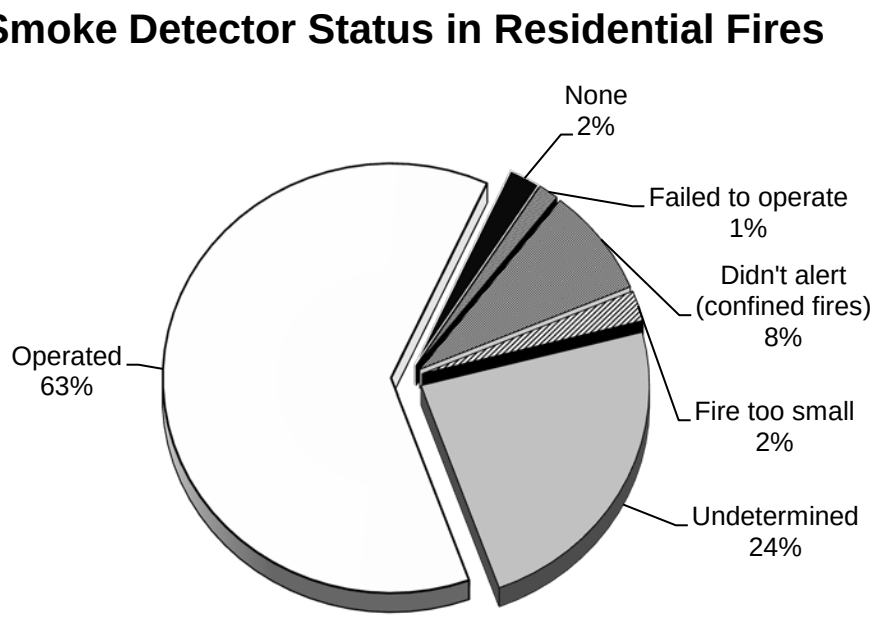
70% of Residential Fires Started in the Kitchen
Seventy percent (70%) of the residential building fires in 2013 started in the kitchen. Six percent (6%) began in a heating room or area; 5% started in the chimney or flue; 2% began in the bedroom; 1% started on an exterior balcony or unenclosed porch; and another 1% started in the living room in Massachusetts residential building fires in 2013.

79% of Residential Building Fires Confined to Non-Combustible Containers[8]
Eleven thousand four hundred and sixty-four (11,464), or 79%, of all residential building fires were reported as confined to non-combustible containers in 2013. Nine thousand four hundred and sixty-eight (9,468) of the reported fires were cooking fires contained to a non-combustible container, accounting for 65% of residential building fires. Eight hundred and seventy-eight (878), or 6%, were fires confined to a fuel burner or boiler malfunction. Seven hundred and seventy (770), or 5%, of all residential building fires reported in 2013 were fires confined to a chimney or flue. Three hundred and thirty-five (335), or 2%, of these fires were contained rubbish fires. Eight (8), or less than 1%, of these fires in the Commonwealth were contained to an incinerator overload or malfunction. Five (5), or less than 1%, of the residential building fires in 2013 were commercial compactor fires confined to the rubbish inside the compactor.

[8] 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.

The number of contained fires in residential occupancies fell in 2013. Confined fires decreased by 148 incidents, or 1%, from the 11,612 reported in 2012.

Detectors Operated in 63% of Fires
Smoke or heat detectors operated in 9,042, or 63%, of the residential building fires in 2013. In 8% of these fires[9], the detectors did not alert the occupants. Detectors were present but did not operate in 1% of these incidents. In 2% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 3% of the residential fires. Smoke detector performance was undetermined in 3,394 incidents, or 24%, of Massachusetts' 2013 residential building fires.



All Houses Must Have Detectors
Under the provisions of Massachusetts General Law Chapter 148, Section 26E, all buildings containing one to five dwelling units built prior to 1975 must be equipped with approved smoke detectors. This statute took effect in March 2006. Under M.G.L. Chapter 148 Section 26F, the fire department verifies compliance with the law.

New Homes Must Have Detector in Bedroom Area
At a minimum, smoke detectors should be installed on every floor of the home and at the bottom of the basement stairwell. The Massachusetts Building Code requires smoke detectors within the bedroom area in all *new* residential occupancies. When a bedroom door is shut, it can help prevent the spread of fire from room to room. Unfortunately, a shut door also makes it harder to hear a smoke detector sounding in the hallway. People

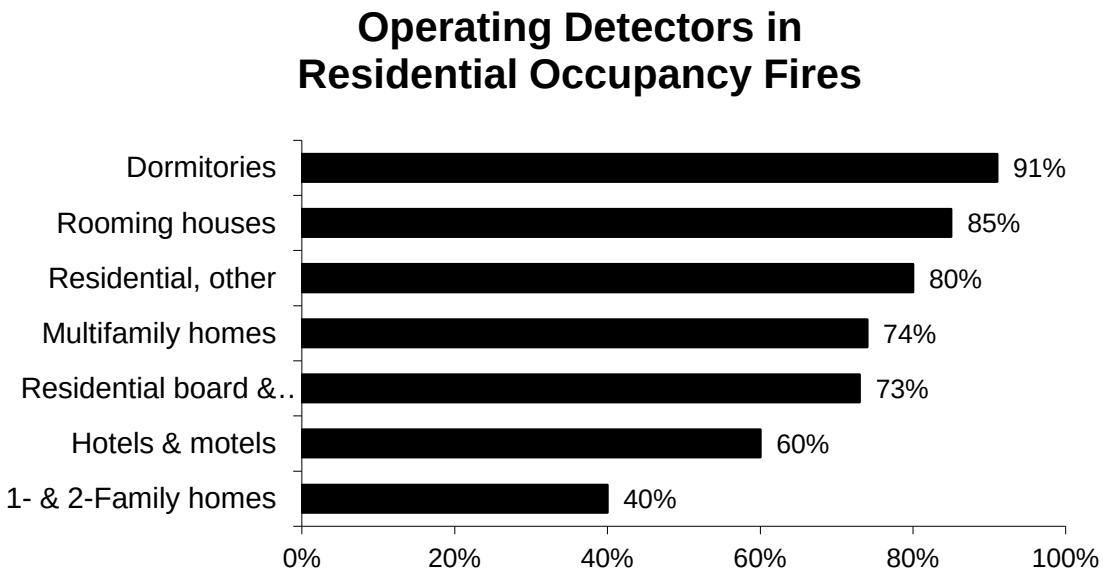
[9] These represent confined fires where it was reported that the detector did not alert the occupants.

who sleep with their bedroom door closed should install a detector inside their bedroom. After detectors are installed, they need to be regularly tested and maintained. All the detector can do is sound the alarm. Everyone needs to develop and practice the escape routes they would use in the event of a fire.

Smoke Alarms That Are 10 Years Old or Older Should Be Replaced
Studies have indicated that like any other appliance in your household, smoke detectors do not last forever. The life span for a typical smoke detector, whether it is battery-powered or hard-wired, is 10 years. Smoke alarms that are 10 years old should be replaced. The manufacture date is stamped or marked on the back of the detector. If there is no date, the detector should be replaced because it is already more than 10 years old. Detectors should be tested monthly and the batteries should be replaced twice a year. Detectors should be kept free of dust and never painted over.

35% of Failed Detectors Had No Batteries or Dead Ones
Of the 207 fires where smoke detectors were present but failed to operate, 54, or 26%, failed because the batteries were either missing or disconnected. Eighteen (18), or 9%, did not operate because of dead batteries. Twenty (20), or 10%, failed because of a power failure, shutoff or disconnect. Ten (10) detectors, or 5%, failed from a lack of maintenance such as not cleaning dust from the detector or painting over the detector. Seven (7), or 3%, failed from improper installation or placement. Five (5) units, or 2%, failed because they were defective. For 93 cases, or 45%, the reason the detector failed was not determined.

1- & 2-Family Homes Had Lowest Percentage of Operating Detectors
One- and two-family homes were the least likely residential occupancies to have operating smoke detectors. Dormitories were the most likely residential occupancy to have operating smoke detectors in 2013. Rooming houses were the second most likely residence to have working smoke detectors. Unclassified residences and apartments were the next most likely residential occupancies to have operating smoke detectors. The

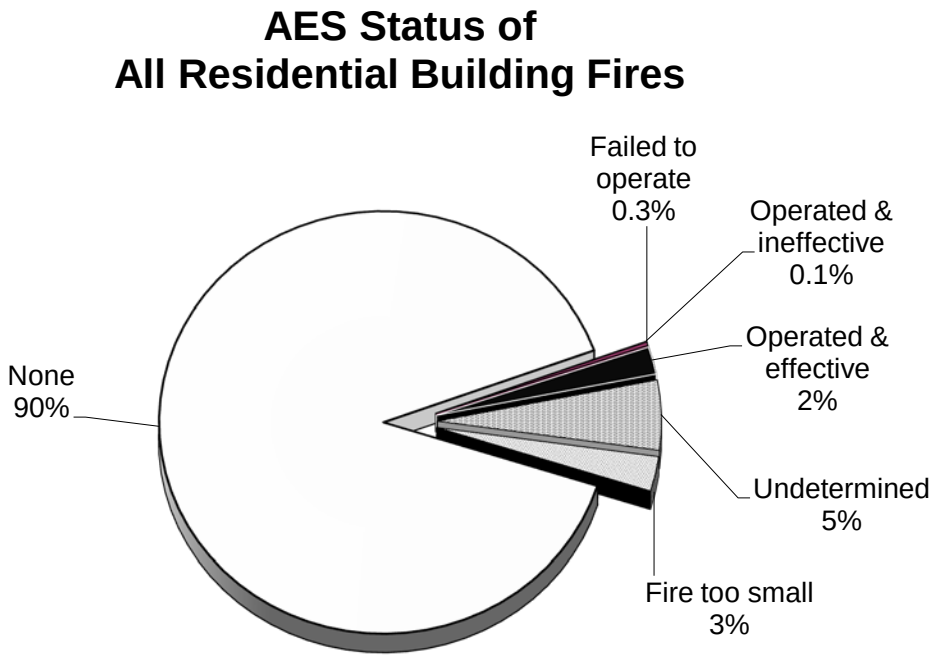


following chart shows the percentage of operating smoke detectors in fires in residential occupancies.

No Working Detectors for 24% of Residential Fire Victims
Of the 27 people who died in residential building fires in 2013, the smoke detector performance was reported for all of the victims. Victims were not alerted by smoke detectors in three fires that killed four people, or 15% of the victims. No detectors were present at all in two, or 7%, of the deaths. In another two deaths, or 7%, there were detectors present but they failed to operate. Detector performance was undetermined in 10 residential building fires that killed 10 people, accounting for 37% of the residential building fire deaths in 2013.

AES Present in Only 2% of Residential Building Fires
In 2013, only 3,565 residential fire incident reports completed the automatic extinguishing system field. This was 25% of all residential building fires.

In these fires where system performance was reported, automatic extinguishing systems (AES) were reported present and operated effectively in 75, or 2%, of the 3,565 residential building fires. AES were present and operated ineffectively in two, or 0.1%, of these fires. In nine, or 0.3%, of the fires in residential occupancies, the system did not operate. In 95, or 3%, the fire was too small to activate the system. In 3,193, or 90%, of the cases, there were no systems present or installed. AES performance was not classified in 191, or 5%, of the incidents involving residential building fires.



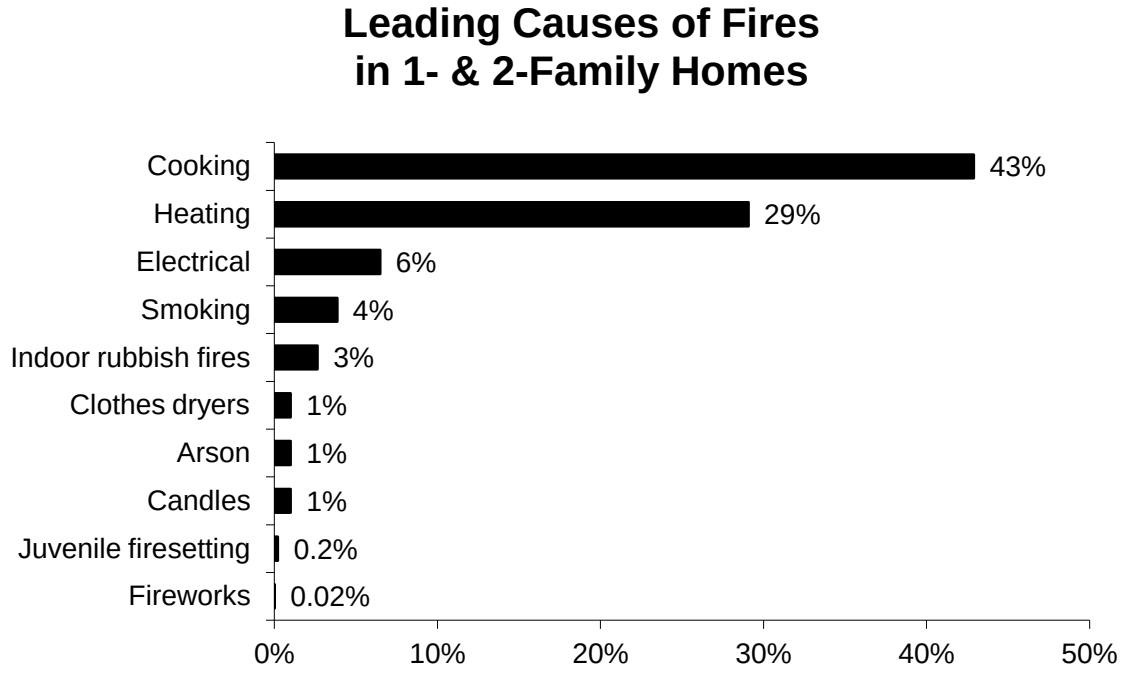
Only You Can Make Your Home Safer for You and Your Family
Eighty-four percent (84%) of building fires and 61% of fire deaths in 2013 took place in residential occupancies. Efforts to reduce the incidence of fire and fire deaths must be focused on home fire safety to have the greatest impact. Increased maintenance of smoke alarms, installation of residential sprinklers, practice of home escape plans coupled with safer products such as self-extinguishing cigarettes, upholstered furniture that meets the California flammability standard, and flame resistant sleepwear for all ages can help make homes and the families who live in them safer from fire.

Fires in One- and Two-Family Homes

5,324 Fires, 19 Civilian Deaths & $92.2 Million in Damage
Five thousand three hundred and twenty-four (5,324) building fires in one- and two-family homes caused 19 civilian deaths, 140 civilian injuries, 194 fire service injuries, and an estimated $92.2 million in property damage. In 2013, 37% of the Commonwealth's 14,476 residential building fires occurred in one- and two-family homes. The average dollar loss from these types of fires was $17,311. Fires in one- and two-family homes were down by 123, or 2%, from 5,447 in 2012.

More fire deaths occurred in one- and two-family homes than all the other residential occupancies combined.

Cooking & Heating Were the Leading Causes of Fires in 1- & 2-Family Homes
Cooking caused 43% of incidents occurring in one- and two-family homes. Heating equipment caused 29% of these fires. Six percent (6%) of one- and two-family residential building fires were caused by electrical problems. The unsafe and improper use of



smoking materials caused 4% of these fires. Indoor rubbish fires caused 3% of these fires. Clothes dryers, arson and candles each caused 1% of these fires. Juvenile-set fires and fireworks each accounted for less than 1% of the fires in one- and two-family homes in 2013.

Cooking is the leading cause of fires overall in every residential occupancy. Since 2008 cooking has overtaken heating equipment as the leading cause of fires in one- and two-family homes.

Heating equipment fires were usually not the leading cause of fires in other residential occupancies because other occupancies tend to be more regulated by building and fire codes than one- and two-family homes. Most apartments are rental properties that fall under more stringent fire prevention statutes.

45% of Fires in 1- & 2- Family Homes Started in the Kitchen
For fires in one- and two-family homes where area of origin is known, 45% started in the kitchen. The second leading area of origin was chimneys or flues, accounting for 14% of these fires. Thirteen percent (13%) started in rooms or areas with heating equipment; 3% started in the bedroom; and 2% each of these fires started in an exterior balcony or unenclosed porch, an exterior wall surface, and the living room.

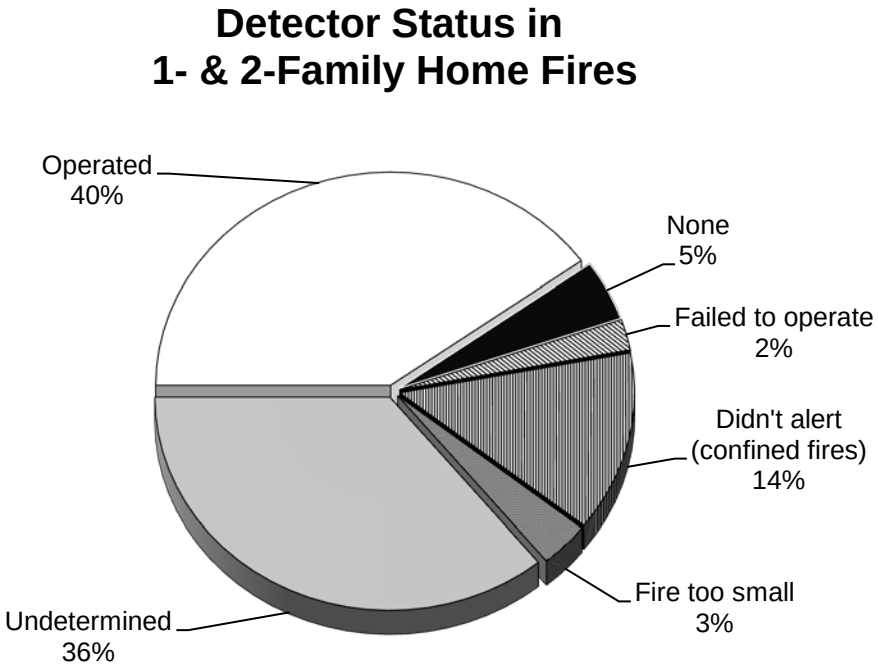
68% of 1- & 2-Family Fires Were Confined to Non-Combustible Containers[10]
Three thousand six hundred (3,600), or 68%, of all residential building fires in one- and two-family homes were reported as confined to non-combustible containers in 2013. Two thousand and sixty-five (2,065) were cooking fires confined to a non-combustible container, accounting for 39% of all the residential building fires in one- and two-family homes. Seven hundred and twenty-three (723), or 14%, of all one- and two-family fires reported in 2013 were fires confined to a chimney or flue. Six hundred and seventy-three (673), or 13%, were fires confined to a fuel burner or boiler. One hundred and thirty-three (133), or 2%, of these fires were contained rubbish fires. Five (5), or less than 1%, of the one- and two-family building fires were contained to an incinerator overload or malfunction in 2013. One (1), or less than 1%, of the residential building fires in 2013 was a commercial compactor fire confined to the rubbish inside the compactor.

The number of contained fires decreased in 2013. Confined fires in one- and two-family homes decreased by 60 incidents, or 2%, from the 3,660 reported in 2012.

Detectors Alerted Occupants in 40% of Fires
Detectors alerted occupants in 40% of one- and two-family residential fires. Smoke or heat detectors operated and alerted the occupants in 2,134, or 40%, of the one- and two-

[10] 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.

family home fires in 2013. In 14% of these fires[11], the detectors did not alert the occupants. Detectors were present but did not operate in 2% of these incidents. In 5% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 3% of these residential fires. Smoke detector performance was undetermined in 1,911 incidents, or 36%, of Massachusetts' 2013 one- and two-family fires.



44% of Failed Detectors Had No Batteries or Dead Ones

Of the 124 fires where smoke detectors were present but failed to operate, 38, or 31%, failed because the batteries were either missing or disconnected. Sixteen (16), or 13%, did not operate because of dead batteries. Nine (9), or 7%, failed because of a power failure, shutoff or disconnect. Five (5), or 4%, failed from improper installation or placement. Five (5) detectors, or 4%, failed from a lack of maintenance. One (1) unit, or 1%, failed because they were defective. For 50 cases, or 40%, the reason the detector failed was not determined.

Detectors Required in All One- and Two-Family Homes

Originally adopted as a local ordinance, and now mandatory through Nicole's Law, Massachusetts General Law Chapter 148, Section 26E (a) requires owners of existing one- and two-family homes built before 1975 to install smoke detectors outside each separate sleeping area and on the ceiling of each stairway leading to a floor above. Section 26F requires the seller of existing one- and two- family homes to equip the building with approved smoke detectors as provided in section 26E. The state building code requires all one- and two-family homes constructed after 1975 to have hardwired,

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

interconnected smoke detectors outside each separate sleeping area and on the ceiling of each stairway leading to a floor above. In 1997, this was amended by requiring all newly constructed one- and two-family homes and any additions that included a bedroom to require the installation of smoke detectors inside all bedrooms per the Commonwealth's Building Code.

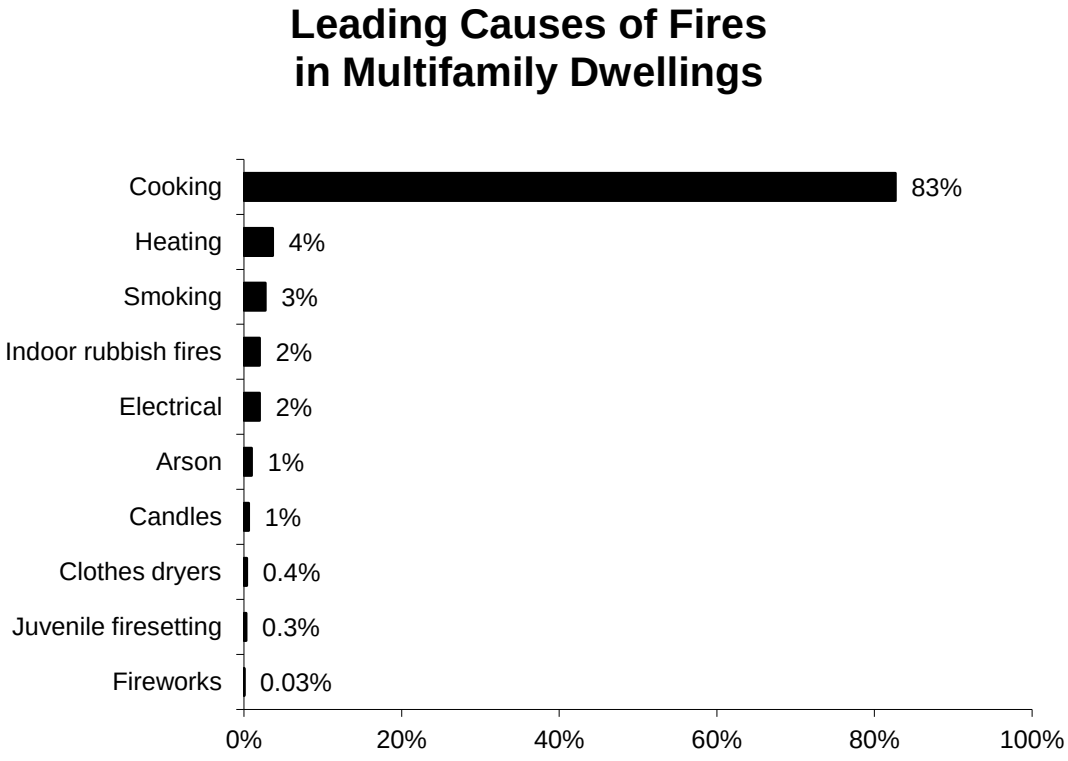
No AES Present in 99% of One- and Two-Family Building Fires
In 2013, in four, or less than 1% of these incidents, an automatic extinguishing system (AES) was present and operated effectively. In three, or less than 1% of the incidents, the fire was too small to activate the system. In one, or less than 1% of the incidents, the system failed to operate. In 99% of the cases where AES status was known, there were no systems.

Multifamily Home Fires

7,270 Fires, 8 Civilian Deaths & $60.4 Million in Damage
Seven thousand two hundred and seventy (7,270), or 50%, of the Commonwealth's 14,476 residential building fires occurred in multifamily dwellings in 2013. These 7,270 fires caused eight civilian deaths, 101 civilian injuries, 156 fire service injuries, and an estimated dollar loss of $60.4 million. The average dollar loss per fire was $8,315. Fires in apartments were down by five, or 0.1%, from 7,275 in 2012.

This residential occupancy category includes apartments, condominiums, townhouses, rowhouses and tenements.

Unsafe Cooking Caused Over 83% of Apartment Fires
Eighty-three percent (83%) of the fires in apartments were caused by unsafe cooking in 2013. Heating accounted for 4% of apartment fires. Smoking was responsible for 3% of these fires. Indoor rubbish fires and electrical problems each caused 2% of these fires. Arsons and candles each caused 1% of the fires in these dwellings. Clothes dryers, juvenile-set fires and fireworks each caused less than 1% of the fires in multifamily homes in 2013.



84% of Apartment Fires Started in the Kitchen
For apartment fires where the *Area of Origin* is known, 84% started in the kitchen. Three percent (3%) began in the heating room or area; 1% started in the bedroom; 1% started in living rooms; and another 1% began on exterior balconies.

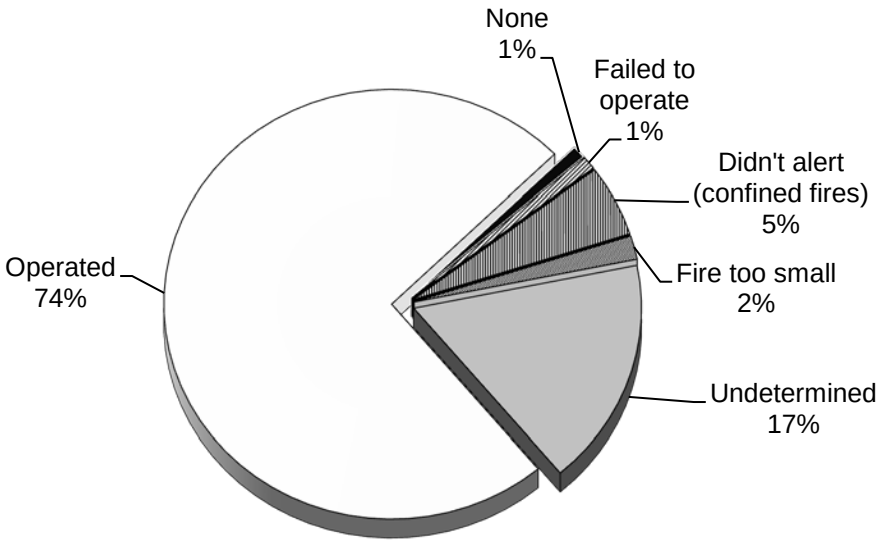
84% of Multifamily Home Fires Confined to Non-Combustible Containers[12]
Six thousand one hundred and thirty-nine (6,139), or 84%, of all building fires in multifamily homes were reported as confined to non-combustible containers in 2013. Five thousand seven hundred and eighty-one (5,781) were cooking fires contained to a non-combustible container, accounting for 80% of all the multifamily dwelling fires in 2013. One hundred and seventy-eight (178), or 2%, were fires confined to a fuel burner or boiler malfunction. One hundred and fifty-three (153), or 2%, of these fires were contained rubbish fires. Twenty-two (22), or less than 1%, of apartment fires reported in 2013 were fires confined to a chimney or flue. Five (5), or less than 1%, were commercial compactor fires confined to the garbage.

Confined fires in apartments decreased by 90 incidents, or 1%, from the 6,229 reported in 2012.

[12] 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.

Detectors Alerted Occupants in Almost 3/4 of Fires
Smoke or heat detectors operated and alerted the occupants in 5,366, or 74%, of the multifamily fires in 2013. In 5% of these fires[13], 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 these residential fires. Smoke detector performance was undetermined in 1,049 incidents, or 17%, of Massachusetts' 2013 multifamily fires.

Detector Status in Multifamily Fires



20% of Failed Detectors Failed Due to Missing Batteries
Of the 75 fires where smoke detectors were present but failed to operate, 15, or 20%, failed because the batteries were either missing or disconnected. Ten (10), or 13%, failed because of a power failure, shutoff or disconnect. Four (4), or 5%, didn't operate because of a lack of maintenance. Four (4), or 5%, failed because they were defective. Two (2), or 3%, did not operate because of dead batteries. One (1), or 1%, failed because of improper installation or placement. For 39 cases, or 52%, the reason the detector failed was not classified or undetermined.

Apartments with 3+ Units Must Have Smoke Detectors
According to Massachusetts General Law Chapter 148, Section 26C, apartment houses containing six or more units must be equipped with hard-wired smoke detectors. In buildings of three to five dwelling units, the detectors may be hard-wired or battery

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

operated inside the units themselves. Detectors in common hallways and basements must be hard-wired.

AES Present in Only 11% of Multifamily Dwelling Fires
Automatic extinguishing systems (AES) were present and operated effectively in 52, or 4%, of the 1,275 multifamily dwelling fires where system status was known in 2013. In one incident, or less than 1%, the system operated but was ineffective in suppressing the fire. In seven of the fires, or 1%, the AES did not operate. In 61, or 5%, of these incidents, the fire was too small to activate the system. In 1,162, or 90%, of the cases, there were no systems present or installed. In 111 incidents, AES status was unknown. These fires were excluded from the percentage calculations.

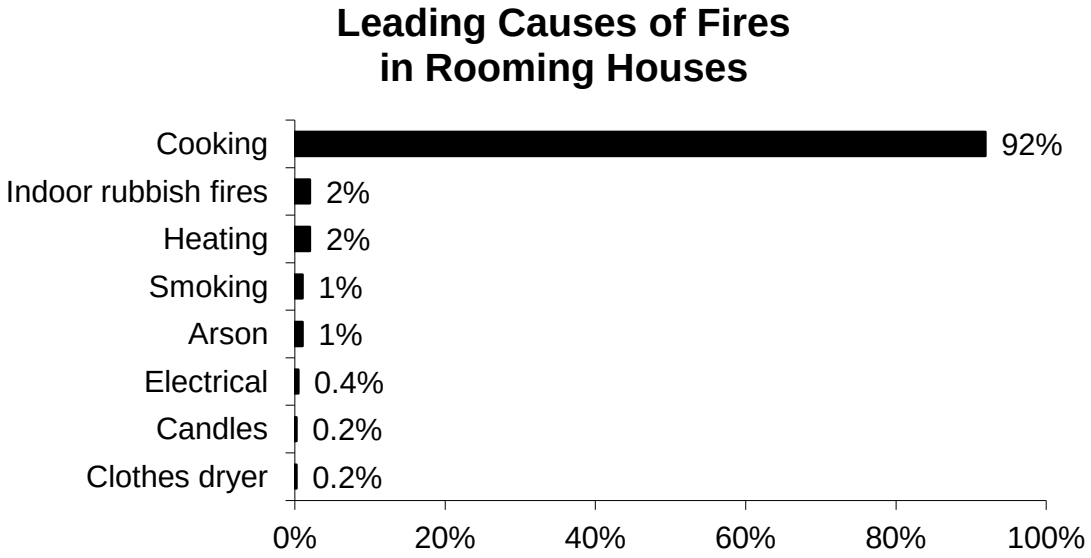
Apartments More Likely to Have Sprinklers Installed
Apartments are more likely than single-family dwellings to have sprinklers installed. Newly constructed apartments with three or more units are required by building codes to have them installed. Also, apartments are likely to be found in high-rise buildings that were required to be retrofitted with sprinklers by March 1998. Sprinklers were present in 9% of multifamily fires, but in less than 1% of fires in one- and two-family dwellings.

In 1998, the State Building Code required all newly built or substantially renovated buildings with three or more apartments with common egresses to be sprinklered.

Rooming House Fires

457 Fires, 6 Civilian Injuries & $450,116 in Damages
Four hundred and fifty-seven (457) rooming, lodging, and boarding house fires were reported to the Massachusetts Fire Incident Reporting System (MFIRS) in 2013. These 457 fires caused six civilian injuries, one fire service injury and an estimated $450,116 in damages. The average dollar loss per fire was $985. Three percent (3%) of the 14,476 residential building fires in 2013 occurred in rooming, boarding, or lodging houses. Fires in rooming houses were down by 2% from 468 in 2012.

Cooking Caused 92% of Rooming House Fires
Of the 457 incidents in rooming houses, cooking caused 92% of these fires. Indoor rubbish fires and heating equipment each caused 2% of these fires. Smoking and arson each caused 1% of these fires. Electrical problems, clothes dryers and candles each caused less than 1% of the fires in rooming houses in 2013.



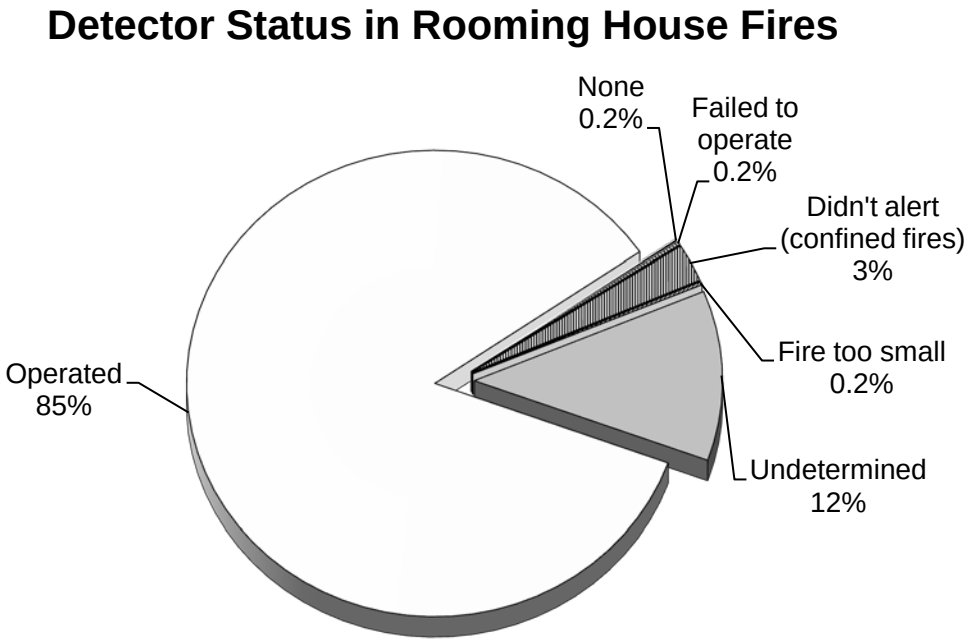
89% of Rooming House Fires Were Confined to Non-Combustible Containers[14]
Four hundred and twenty-seven (427), or 93%, of all building fires in rooming houses were reported as confined to non-combustible containers in 2013. Four hundred and nine (409) were cooking fires contained to a non-combustible container, accounting for 89% of all the fires in rooming or boarding houses in 2013. Eleven (11) fires, accounting for 2% of rooming house fires, were confined indoor rubbish fires. Five (5), or 1%, were fires confined to a fuel burner or boiler malfunction; and two, or less than 1%, were confined chimney or flue fires.

Confined fires in rooming houses decreased by one incident, or less than 1%, from the 428 reported in 2012.

90% of Rooming House Fires Started in the Bedroom
Ninety percent (90%) of rooming house fires started in the bedroom[15]. Eight percent (8%) started in kitchens, and 1% started in heating rooms or areas.

[14] 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.
[15] 89% of the cooking fires in rooming houses were confined cooking fires. In most cases we assign the *Area of Origin* of a confined cooking fire to the kitchen. However in the case of rooming houses many of these fires probably occur in the residents' bedrooms when they are using hot plates, coffee makers or microwave ovens.

Detectors Alerted Occupants in 85% of Fires
Smoke or heat detectors operated and alerted the occupants in 388, or 85%, of the rooming house fires in 2013. In 3% of these fires[16], the detectors did not alert the occupants. In 0.2% of these fires, detectors were present but did not operate. In 0.2% of these fires detectors weren't present at all. The fire was too small to trigger the detector in 0.2% of these residential fires. Smoke detector performance was undetermined in 54 incidents, or 12%, of Massachusetts' 2013 rooming house fires.



Smoke Detectors Required in Rooming Houses
Smoke detectors are required in rooming houses. Local communities may elect to adopt the provisions of Massachusetts General Law Chapter 148, Section 26H. This law mandates an adequate system of automatic sprinklers in every lodging or boarding house in the community. Sprinklers must be installed within five years after the provision is accepted. This was enacted after 15 people died in a Beverly rooming house fire on July 4, 1984.

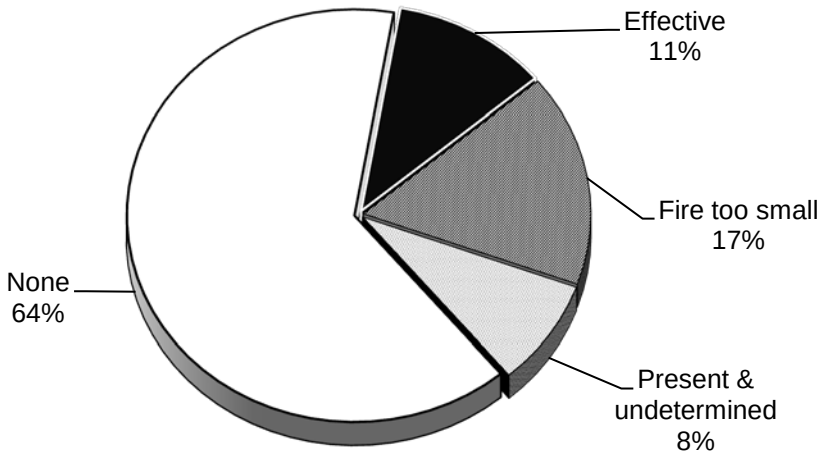
The decline in rooming house fires, especially fatal rooming house fires, is one of the great fire prevention success stories. Prior to the passage of Massachusetts General Law Chapter 148 Section 26H, rooming houses were known as "death traps' because of the large number of fire deaths that occurred in them every year. This is no longer true.

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

AES Present in Only 36% of Rooming House Residential Building Fires
AES were reported present in 13, or 36%, of the 36 rooming house fires where AES presence was known. In the other 23 incidents, or 64%, there were no systems present.

AES Effective in 11% of Rooming House Building Fires
In 11% of these rooming house building fires in 2013 where AES status was known, the AES operated effectively. The fire was too small to activate the automatic extinguishing system (AES) in 17% of these fires. In 8% of rooming house fires, systems were reported to be present but undetermined if they operated. In 64% of the cases, no system had been installed.

AES Operation in Rooming House Fires

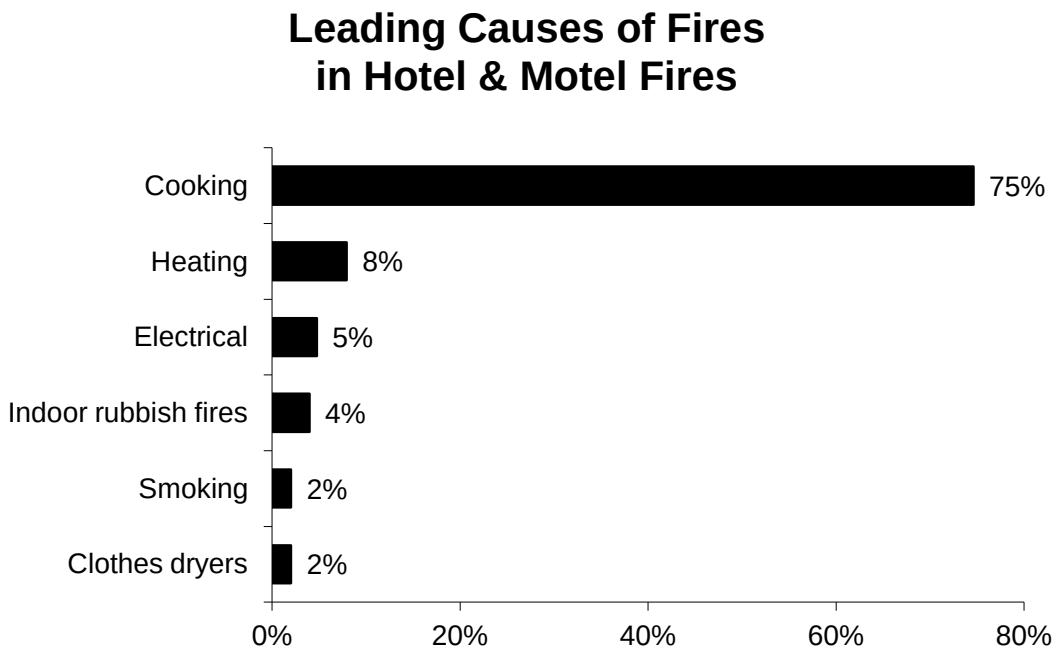


Hotel and Motel Fires

126 Fires Caused 1 Civilian Injury & $369,268 in Damages
One hundred and twenty-six (126) building fires in hotels, motels and home hotels caused one civilian injury and $369,268 in estimated property damages. The average dollar loss per fire was $2,931. In 2013, 1% of the 14,476 residential building fires occurred in hotels, motels, or home hotels. Fires in hotels and motels were down 7% from 135 in 2012.

Cooking Caused 3/4 of Hotel & Motel Fires
Of the 126 fires in hotels and motels in 2013, cooking was the leading cause, accounting for 75%, of the fires in this occupancy. Heating equipment was responsible for 8% of these fires. Electrical problems caused 5% and indoor rubbish fires caused 4% of these

fires. Smoking and clothes dryers each caused 2% of the fires in Massachusetts hotels and motels in 2013.



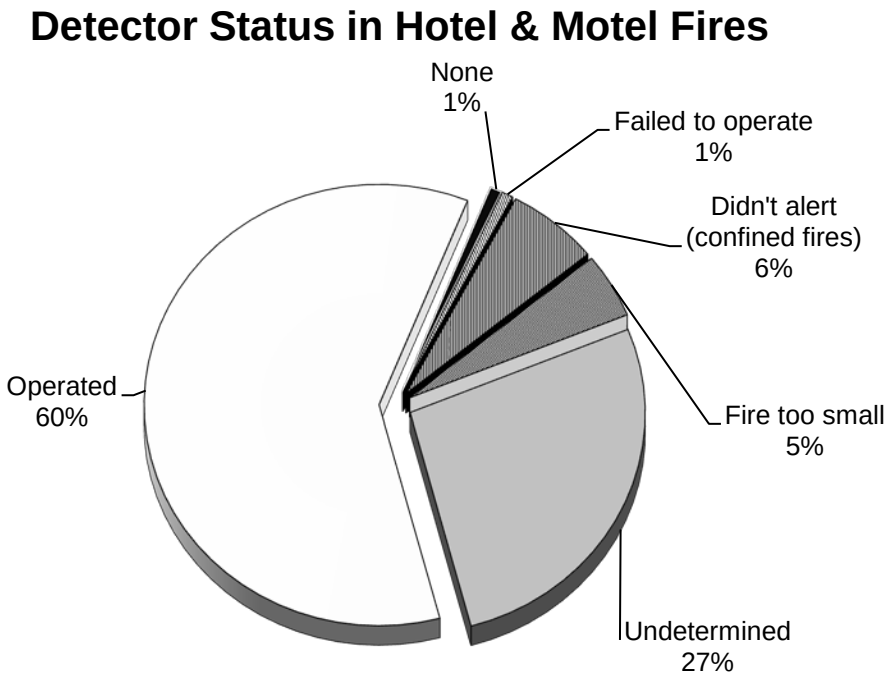
73% of Hotel and Motel Fires Started in the Kitchen
For hotel and motel fires, 73% started in the kitchen. Three percent (3%) each began in a laundry room or bathroom. Three percent (3%) of these fires each began in bathrooms, bedrooms and chimneys or flues. Two percent (2%) of these fires each started in laundry rooms and exterior wall surfaces.

81% of Hotel or Motel Fires Confined to Non-Combustible Containers[17]
One hundred and two (102), or 81%, of all building fires in hotels and motels were reported as confined to non-combustible containers in 2013. Ninety-one (91) were cooking fires contained to a non-combustible container, accounting for 72% of these fires. Indoor rubbish fires caused five, or 4%, of the hotel and motel fires in 2013. Four (4), or 3%, of hotel or motel fires in 2013 were confined to a chimney or flue. One (1) fuel burner or boiler malfunction caused 1% of the fires in hotels and motels in 2013; and one confined fire in a commercial compactor caused 1% of these fires.

The number of contained fires fell in 2013. Confined fires in hotels and motels decreased by one incident, or 1%, from the 103 reported in 2012.

[17] 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.

Detectors Operated in 60% of Fires
Smoke or heat detectors operated in 76, or 60%, of the hotel or motel fires in 2013. In 6% of these fires[18], the detectors did not alert the occupants. Detectors were present but did not operate in 1% of these fires. In 1% of these fires there were no detectors present at all. The fire was too small to trigger the detector in 5% of these residential fires. Smoke detector performance was undetermined in 34 incidents, or 27%, of Massachusetts' 2013 hotel or motel fires.



AES Absent in 63% of Hotel and Motel Residential Building Fires
Automatic extinguishing systems (AES) were present and operated effectively in two, or 5%, of the 40 hotel and motel building fires in 2013 where AES status was known. In eight, or 20%, of these incidents the system failed to operate. In five, or 12% of these fires, a system was present but it was undetermined if it operated. In 25, or 63%, of the cases, there were no AES.

State Regulations Require Quarterly Innholder Inspections
State regulations require local fire departments to conduct quarterly inspections of the premises specified in inn holder licenses.

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

Hotel-Motel Safety
It is important to consider fire safety when selecting accommodations.

- Choose lodging equipped with sprinklers and smoke detectors in each room.
- If you are hearing impaired, you may request a room with an appropriate smoke detector with a flashing strobe light.
- Think about fire safety when checking into a hotel or motel. Count the number of doors down the hall to the nearest fire exit staircase. Remember to never use the elevator in case of a fire. Travelers should test the smoke detector in their room.
- It is recommended that you keep the room key, eyeglasses and a flashlight on the night table. If a fire occurs or a fire alarm sounds, take them with you and go out the door. However, before opening the door, test the door with the back of your hand. If the door feels cool, open the door a crack. Be ready to close the door if hot air, flames, or smoke rush through the crack. If this does not occur, yet the hall is hazy with smoke, crawl down the hall counting the doors to the nearest stairway exit. If this exit cannot be reached, turn around and count the doors back to your room. Unlock the door and re-enter.
- If it is unsafe to leave the room during a fire:
  Fill the tub with cold water; stuff wet towels around the door to keep the smoke out; if possible, open a window and hang a sheet outside to signal for help; cover your face with a wet cloth and stay low if smoke gets in the room; do not jump.
- Try to call out to emergency services on a cell phone or house phone and advise the emergency dispatcher of your exact location within the hotel.

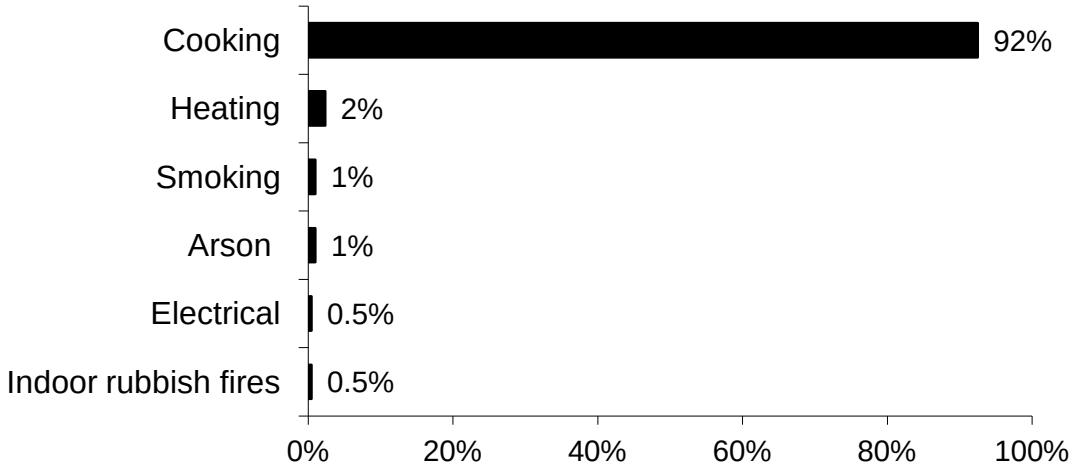
Residential Board & Care Fires

213 Fires Caused $44,224 in Damages
Two hundred and thirteen (213) residential board and care building fires caused an estimated dollar loss of $144,224 in damages. The average dollar loss per fire was $208. In 2013, 1% of the 14,476 residential building fires occurred in residential board and care buildings. Fires in residential board and care facilities decreased by 1% from 214 in 2012.

This *Property Use* code includes long term health care facilities, halfway houses and assisted care housing facilities. It excludes nursing homes.

Cooking Accounted for 92% Residential Board & Care Fires
In the 213 incidents of residential board and care building fires, the leading cause was cooking, accounting for 197 incidents, or 92%, of the fire incidents. Heating equipment caused 2% of these fires. Smoking and arson each caused 1% of these fires. Electrical problems and indoor rubbish fires each caused less than 1% of the fires in residential board and care facilities in 2013.

Leading Causes of Fires in Residential Board & Care Facility Fires



93% of Residential Board & Care Fires Started in the Kitchen
Of the 213 residential board and care building fires, 198, or 93%, started in the kitchen. Three (3), or 1%, started each started in bathrooms and heating rooms. Bedrooms and living rooms each accounted for two, or 1%, of these fires.

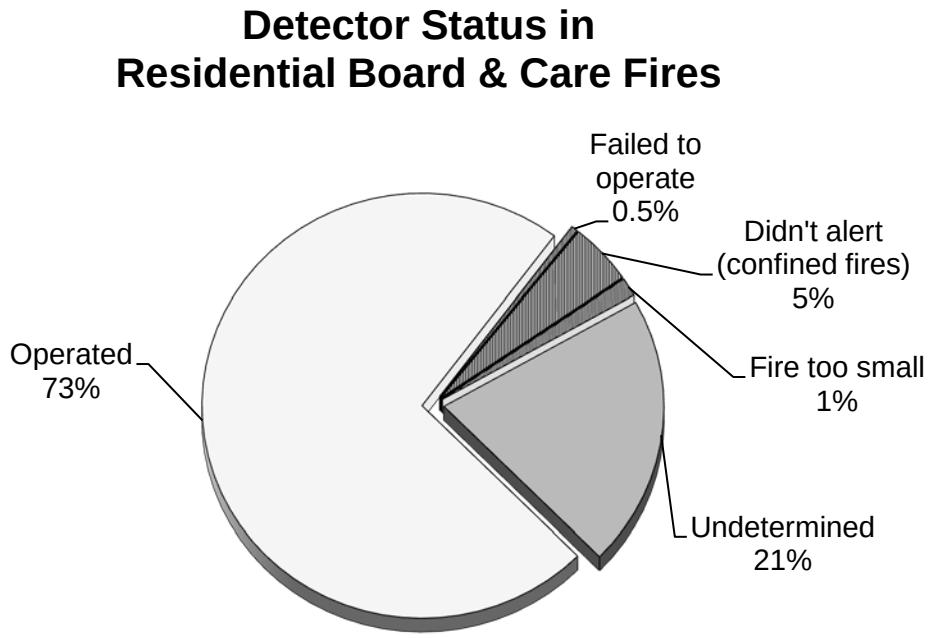
94% of Board & Care Fires Confined to Non-Combustible Containers[19]
Two hundred and one (201), or 94%, of all building fires in residential board and care facilities were reported as confined to non-combustible containers in 2013. One hundred and ninety-six (196) were cooking fires contained to a non-combustible container accounting for 92% of these fires. Three (3), or 1%, of the fires in residential board and care facilities were confined to a fuel burner or boiler malfunction. One (1), or less than 1%, of these fires was a contained rubbish fires; and another one, or less than 1%, was a confined commercial compactor fire.

The number of confined fires increased in 2013. Confined fires in residential board and care facilities increased by 10 incidents, or 5%, from the 195 reported in 2012.

Detectors Operated in 73% of Fires
Smoke or heat detectors operated in 155, or 73%, of the residential board and care facility fires in 2013. In 5% of these fires[20], the detectors did not alert the occupants. Detectors

[19] 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.

were present but failed to operate in less than 1% of residential board and care fires. There were no fires reported where there were no detectors. The fire was too small to trigger the detector in 1% of these residential fires. Smoke detector performance was undetermined in 44 incidents, or 21%, of Massachusetts' 2013 residential board and care facility fires.



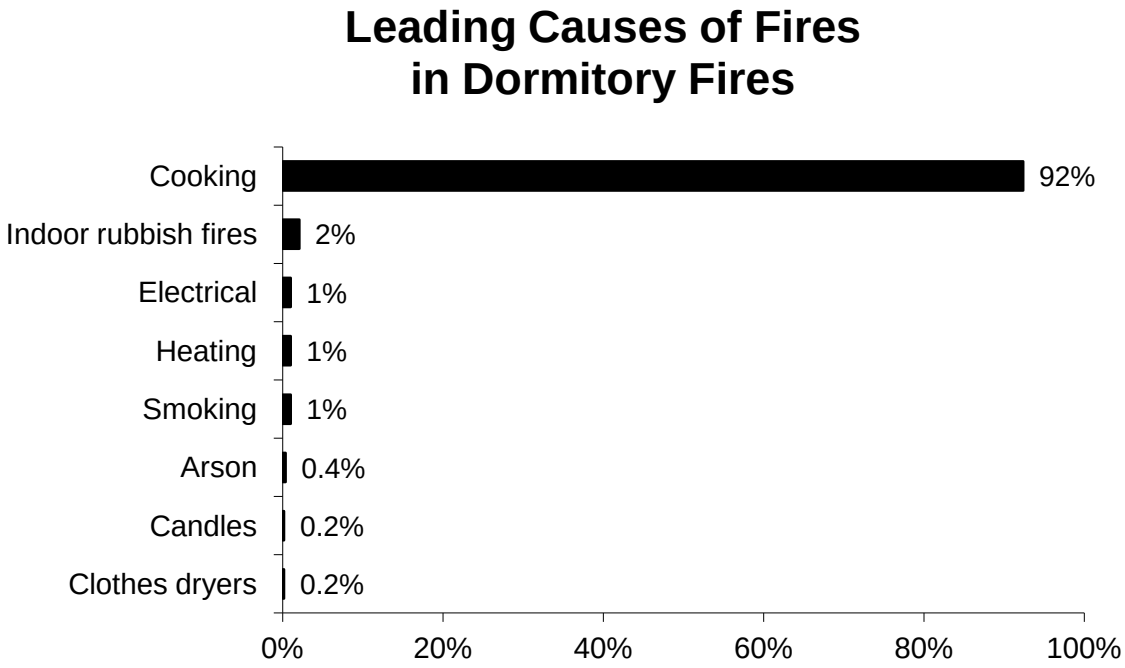
No AES in 70% of Residential Board & Care Building Fires
Automatic extinguishing systems (AES) were present and effective in three, or 4%, of the 23 residential board and care building fires where AES presence was known. An AES was present but it was undetermined if it operated in four, or 17%, of these incidents. The fire was too small to activate the system in two, or 9% of these fires. In 16, or 70%, of these incidents there were no systems present.

Dormitory Fires

526 Fires Caused 1 Civilian Injury & $422,850 in Damages
Five hundred and twenty-six (526) dormitory building fires caused one civilian injury, one fire service injury and an estimated dollar loss of $422,850 in damages. The average dollar loss per fire was $804. In 2013, 4% of the 14,476 residential building fires occurred in dormitories. Fires in dormitories increased by 5, or 1%, from 521 in 2012.

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

Cooking Accounted for 92% of Dormitory Fires
In the 526 incidents of dormitory fires, the leading cause was cooking, accounting for 486, or 92%, of these fires. Indoor rubbish fires caused 2% of these fires. Electrical problems, smoking and heating equipment were each responsible for 1% of these incidents. Arson, candles and clothes dryers caused less than 1% of the Massachusetts dormitory fires in 2013.



92% of Dormitory Fires Started in the Bedrooms
For dormitory fires, 92% started in the bedrooms[21]. Two percent (2%) started in kitchens; and heating rooms or areas, laundry rooms and bathrooms were each the area of origin for 1% of dormitory fires.

94% of Dormitory Fires Confined to Non-Combustible Containers[22]
Four hundred and ninety-five (495), or 94%, of all building fires in dormitories were reported as confined to non-combustible containers in 2013. Four hundred and seventy-nine (479) were cooking fires contained to a non-combustible container, accounting for 91% of all dormitory fires. It may be surmised that many if not all of these

[21] 91% of the cooking fires in dormitories were confined cooking fires. In most cases we assign the *Area of Origin* of a confined cooking fire to the kitchen. However in the case of dormitories many of these fires probably occur in the students' bedrooms when they are using hot plates, coffee makers or microwave ovens.

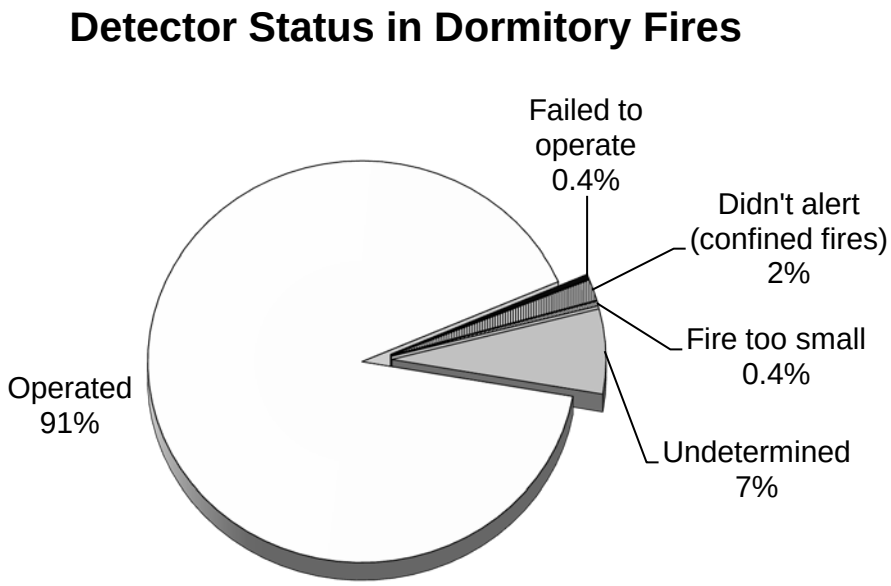
[22] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing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

occurred the students' bedrooms, some may have been in a kitchen. Indoor rubbish fires accounted for 10, or 2% of the fires in dormitories in 2013. Five (5), or 1%, of fires in Massachusetts' dormitories in 2013 were confined to a fuel burner or boiler malfunction. One (1), or less than 1%, was confined to a chimney or flue.

The number of contained fires fell in 2013. Confined fires in dormitories decreased by nine incidents, or 2%, from the 504 reported in 2012.

Detectors Operated in 91% of Fires

Dormitories have the highest percentage of operating smoke detectors of any residential occupancy in Massachusetts. Smoke or heat detectors operated and alerted the occupants in 477, or 91%, of the dormitory fires in 2013. In 2% of these fires[23], the detectors did not alert the occupants. Detectors were present but did not operate in less than 1% of these fires. There were no reported fires where detectors were not present. The fire was too small to trigger the detector in less than 1% of these fires. Smoke detector performance was undetermined in 36 incidents, or 7% of Massachusetts' 2013 dormitory fires.

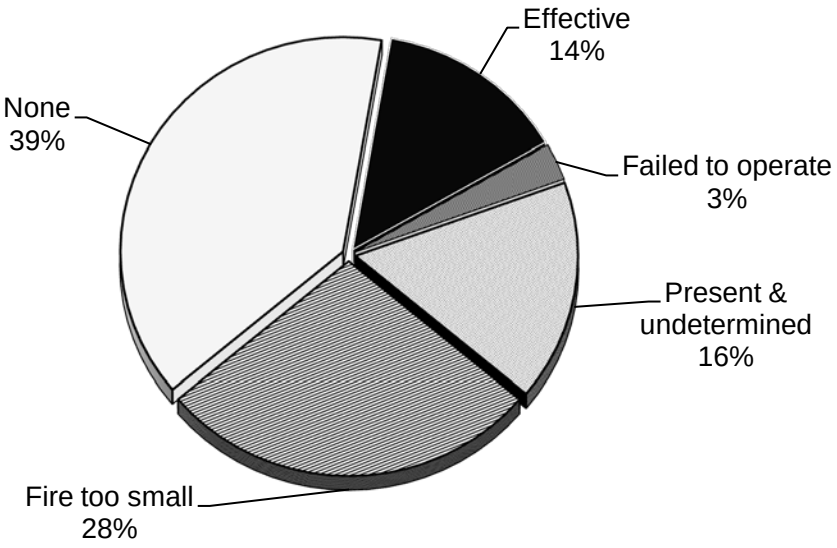


AES Present in Only 61% of Dormitory Fires

Automatic extinguishing systems (AES) were present and operated effectively in five, or 14%, of the 36 building fires in dormitories where AES status was known. In one incident, or 3%, the system failed to operate. In 10, or 28% of these incidents, the fire was too small to activate the system. In six, or 16% of these incidents, a system was present but it was undetermined if it operated. In 14, or 39%, of these incidents there were no systems present.

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

AES Status in Dormitory Fires

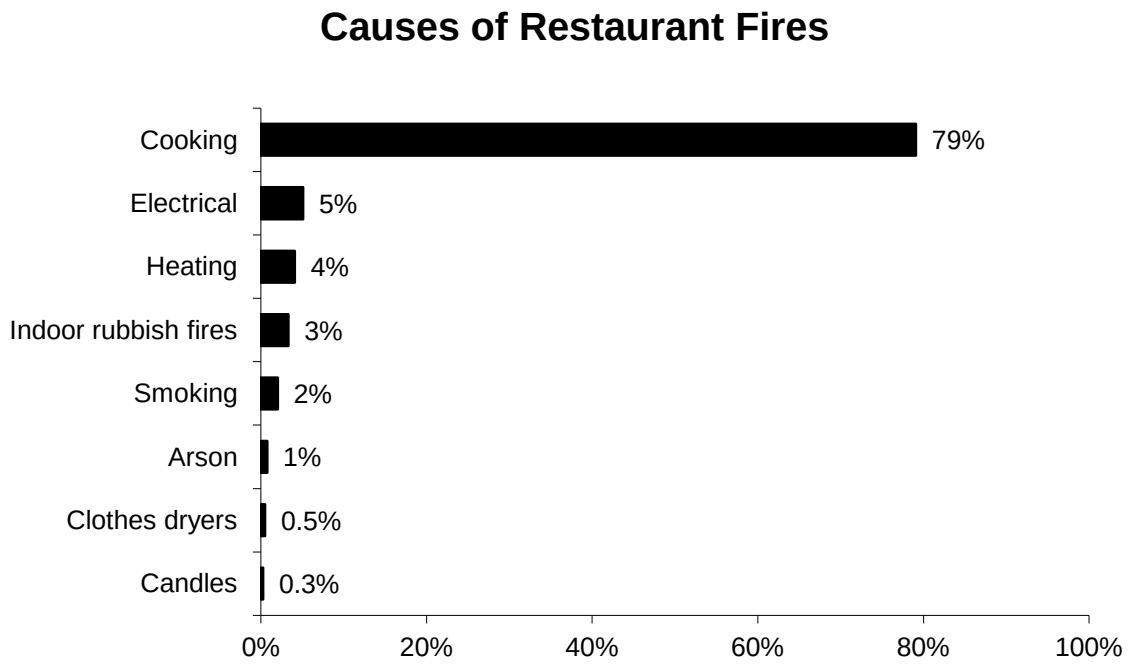


5.3 to 1 Ratio of False Alarms to Fire Calls in MA Dorms
In 2013, Massachusetts fire departments responded to 2,786 false alarm calls of all types in dormitory type residences. This means that there were 5.3 times as many false alarms as legitimate fire calls at these types of residences. One thousand seven hundred and one (1,701), or 61%, were unintentional system or detector operations; 719, or 26%, were system or detector malfunctions; 287, or 10%, were malicious or mischievous false alarms; 77, or 3%, were unclassified false alarm calls; and two, or less than 1% were bomb scares.

Restaurant Fires

392 Fires, 4 Civilian Injuries & $1.8 Million in Damages
Three hundred and ninety-two (392) building fires in 2013 occurred in restaurants and other eating and drinking establishments, causing four civilian injuries, six fire service injuries and an estimated dollar loss of $1.8 million. The average dollar loss per fire was $4,698. In 2013, 2% of the 17,276 building fires in Massachusetts occurred in restaurants. Fires in restaurants were up 3% from 381 in 2012.

79% of Restaurant Fires Caused by Cooking
Cooking caused 79% of the restaurant fires; electrical problems caused 5%; heating equipment caused 4%; indoor rubbish fires accounted for 3% of these fires; smoking caused 2%; arsons caused 1% of these fires; and clothes dryers and candles each caused less than 1% of the fires in restaurants in 2013.



81% of Restaurant Fires Started in the Kitchen
Three hundred and sixteen (316), or 91%, of the 392 fires in restaurants started in the kitchen. Two percent (2%) began in heating rooms or areas. Exterior wall surfaces, ducts and wall assemblies were each the area of origin for 1% of these fires.

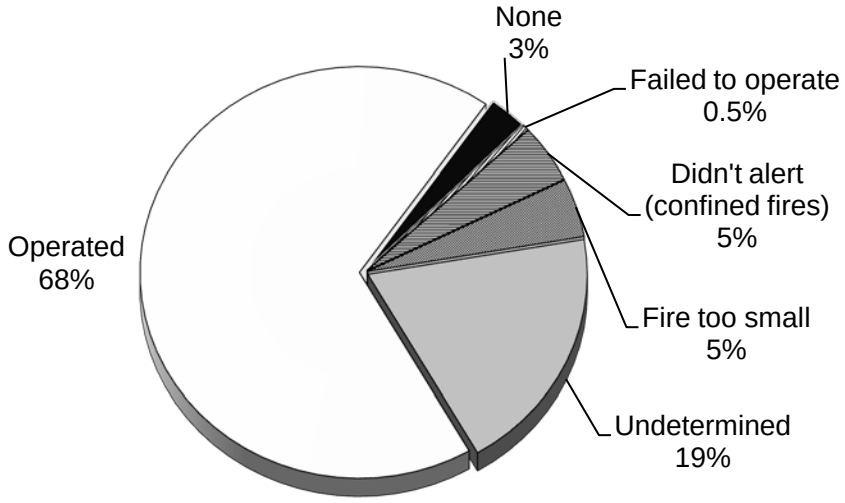
78% of Restaurant Building Fires Confined to Non-Combustible Containers[24]
Three hundred and two (302), or 78% of all restaurant building fires, were reported as confined to non-combustible containers in 2013. Two hundred and eighty-four (284) were cooking fires contained to a non-combustible container, accounting for 72% of restaurant building fires. Thirteen (13), or 3%, of all restaurant building fires reported in 2013 contained rubbish fires. Seven (7), or 2%, were fires confined to a fuel burner or boiler malfunction. Two (2), or 1%, of restaurant fires were confined to chimneys or flues; and one, or less than 1%, was a commercial compactor fire confined to the rubbish.

[24] 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.

The number of contained fires increased in 2013. Confined fires in restaurants increased by five incidents, or 2%, from the 302 reported in 2012.

Detectors Operated in Over 2/3 of Fires
Smoke or heat detectors operated in 267, or 68%, of the restaurant fires in 2013. In 5% of these fires[25], the detectors did not alert the occupants. The detectors failed to operate in less than 1% of these fires. In 3% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 5% of the restaurant fires. Smoke detector performance was undetermined in 76 incidents, or 19%, of Massachusetts' 2013 restaurant fires.

Detector Status in Restaurant Fires

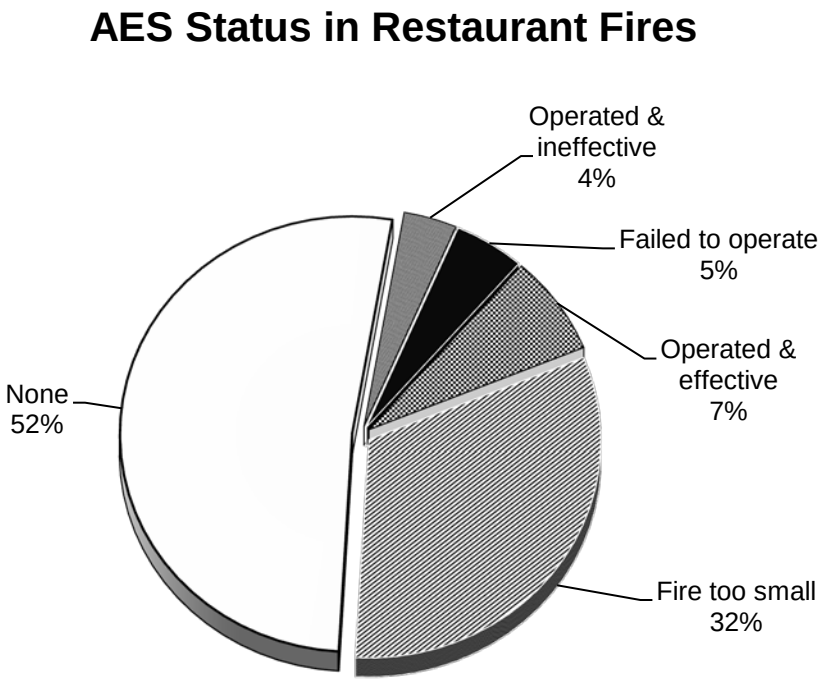


Restaurants Must Have Kitchen Exhaust & Fire Extinguishing Systems
According to Massachusetts 527 CMR 11, restaurants must have commercial kitchen exhaust systems and fire extinguishing systems installed and maintained in accordance with NFPA 96 for any cooking equipment that produces grease-laden vapors. An automatic fire extinguishing system would be the primary protection and portable fire extinguishers would be used as a secondary backup. These systems are usually located in the direct vicinity of, and specially designed for cooking equipment such as stoves, deep fryers and ovens. In 2010 this was changed from the previous standard, 527 CMR 10.03 (8).

No AES in Over 1/2 of Restaurant Fires
Automatic extinguishing systems (AES) were present and operated effectively in 7% of the 81 restaurant fires where AES status was known. In 4% of these fires, systems were present but operated ineffectively. In 5% of these fires, an AES was present but did not operate. In 32% of these fires, the fire was too small to activate the system. No AES

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

equipment was present in 52% of the restaurant fires in 2013. AES status was unknown in 22 incidents. These incidents were excluded from the percentage calculations.



Commercial Cooking Exhaust System Cleaning Inspection License
Any person engaged in the cleaning and inspection of commercial cooking operations, as of January 1, 2010, must hold a Certificate of Competency issued by the State Fire Marshal. All cleaning and inspection that takes place must comply with the regulation. The regulation is based on the 2008 edition of NFPA 96.

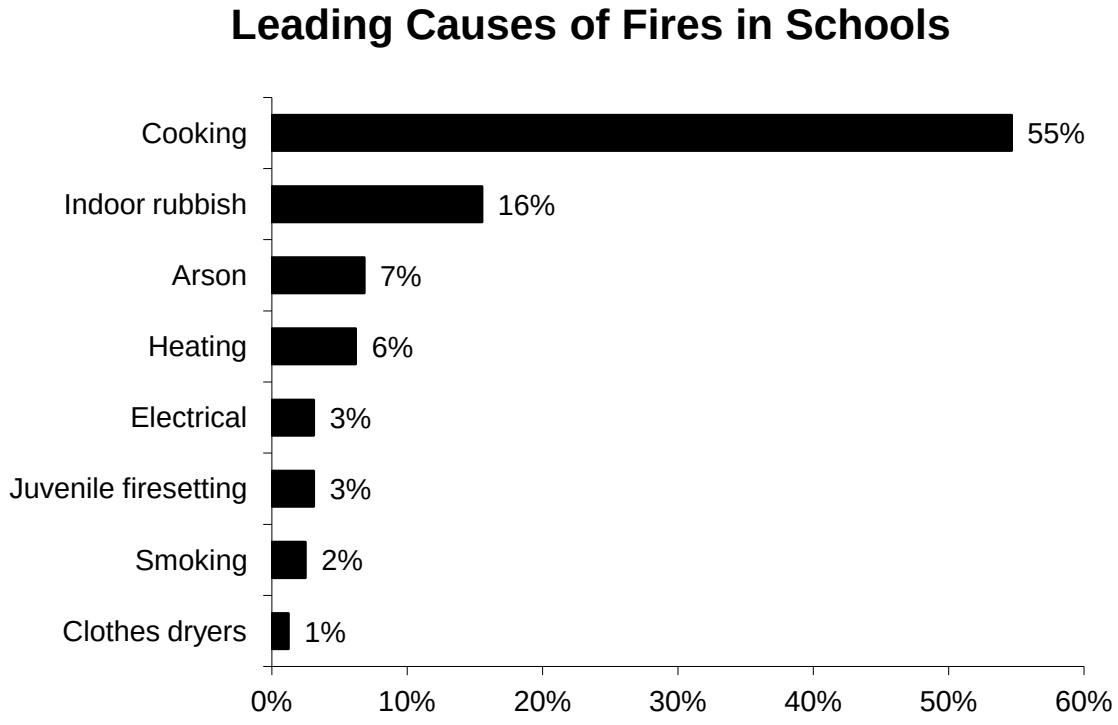
Bridgewater Has Largest Loss Restaurant Fire

- On March 14, 2013, at 5:44 p.m., the Bridgewater Fire Department was called to an electrical fire in a restaurant. Arcing in a ceiling fan started the fire. No one was injured at this fire. Detectors were present but it was undetermined if they operated. The building was sprinklered but it was undetermined if they operated. Damages from this fire were estimated to be $300,000.

School Fires

161 Fires Caused 3 Fire Service Injuries & 11.2 Million in Loss
One hundred and sixty-one (161) building fires in schools caused three fire service injuries and $11.2 million in property damages. The average dollar loss per fire was $69,638. In 2013, 1% of the building fires occurred in schools. Fires in schools decreased by 49 from the 210 reported in 2012.

55% of School Fires Were Cooking Fires
Fifty-five percent (55%) of the 161 fires reported to have occurred in Massachusetts schools were caused by cooking. Sixteen percent (16%) of the school fires were confined indoor rubbish fires for which no causal information was reported[26]. Arsons caused 7% of these fires. Problems with heating equipment accounted for 6% of these fires. Electrical problems and juvenile-set fires each accounted for 3% of these fires. Smoking accounted for 2% of the fires in schools. Clothes dryers caused 1% of the reported fires in schools in 2013. Smoking by students and faculty is generally prohibited in schools.



[26] Confined fires, like indoor rubbish fires, do not require causal information to be completed. However some reports do include this information and we are able to classify these fires as other types of fires like arsons or juvenile-set fires.

54% of School Fires Started in the Kitchen
Fifty-four percent (54%) of the fires in schools started in kitchens; 8% began in a bathroom; 6% started in a heating room or area; and 3% started in attics. Many reports of school fires do not include the area of origin of the fire. The area of ignition for confined indoor rubbish fires is not required to be reported. In 2013 there were 25 reported confined indoor rubbish fires reported in Massachusetts schools, of which 20 did not report an area of origin.

Schools Required to Report Fires by Law
Beginning in September of 2006 with Chapter 80 of the Acts of 2006, An Act Relative to the Reporting of Fires in School, "…any school that provides instruction to pupils in any grades 1 to 12, shall immediately report any incident involving the unauthorized ignition of any fire within the school building or on school grounds to the local fire department." Upon receipt of this report from the school, the local fire department must then complete an MFIRS report.

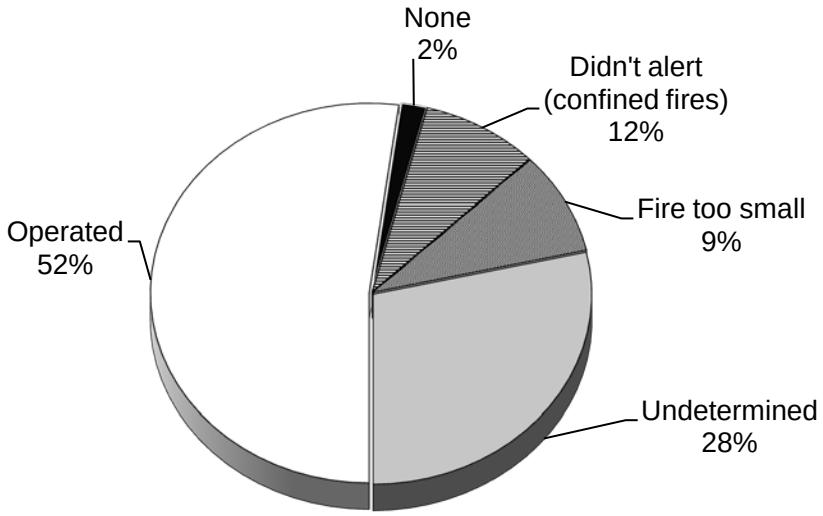
77% of School Building Fires Confined to Non-Combustible Containers[27]
One hundred and twenty-four (124), or 77%, of all school building fires were reported as confined to non-combustible containers in 2013. Eighty-seven (87) were cooking fires contained to a non-combustible container, accounting for 54% of school fires. Twenty-five (25), or 16%, of all school fires were contained rubbish fires. Of these 25 confined rubbish fires, four were considered intentionally set or arson, and two of these were determined to be set by juveniles. Ten (10), or 6%, were fires confined to a fuel burner or boiler malfunction. One (1), or 1%, was a fire confined to a chimney or flue; and one, or 1%, was a confined commercial compactor fire.

Confined fires in schools decreased by 38 incidents, or 23%, from the 162 reported in 2012. This was mainly due to the 54% decrease in reported confined rubbish fires.

Detectors Operated in Over 1/2 of Fires
Smoke or heat detectors operated in 87, or 52%, of the school fires in 2013. In 12% of these fires[28], the detectors did not alert the occupants. There were no reported fires where detectors were present but did not operate. In 2% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 9% of school fires. Smoke detector performance was undetermined in 46 incidents, or 28%, of Massachusetts' 2013 school fires.

[27] 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.
[28] These represent confined fires where it was reported that the detector did not alert the occupants.

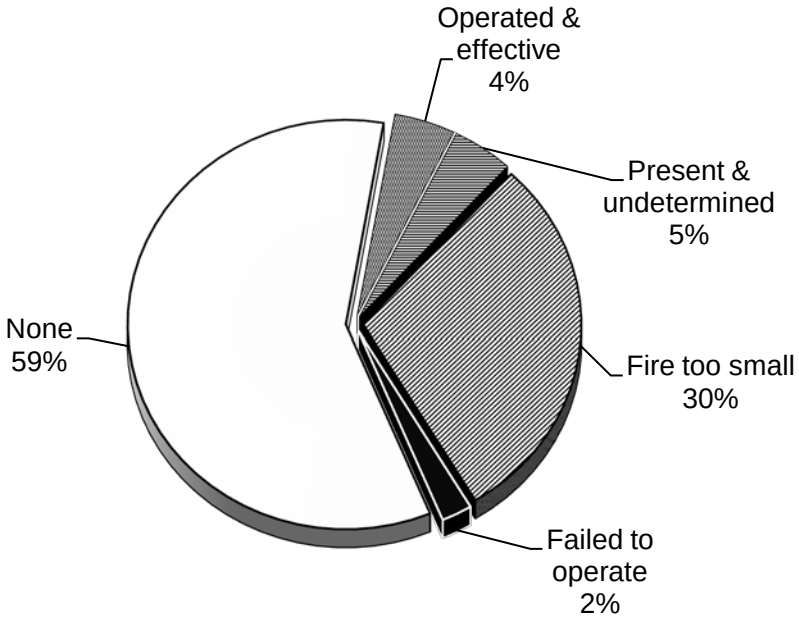
Detector Status in School Fires



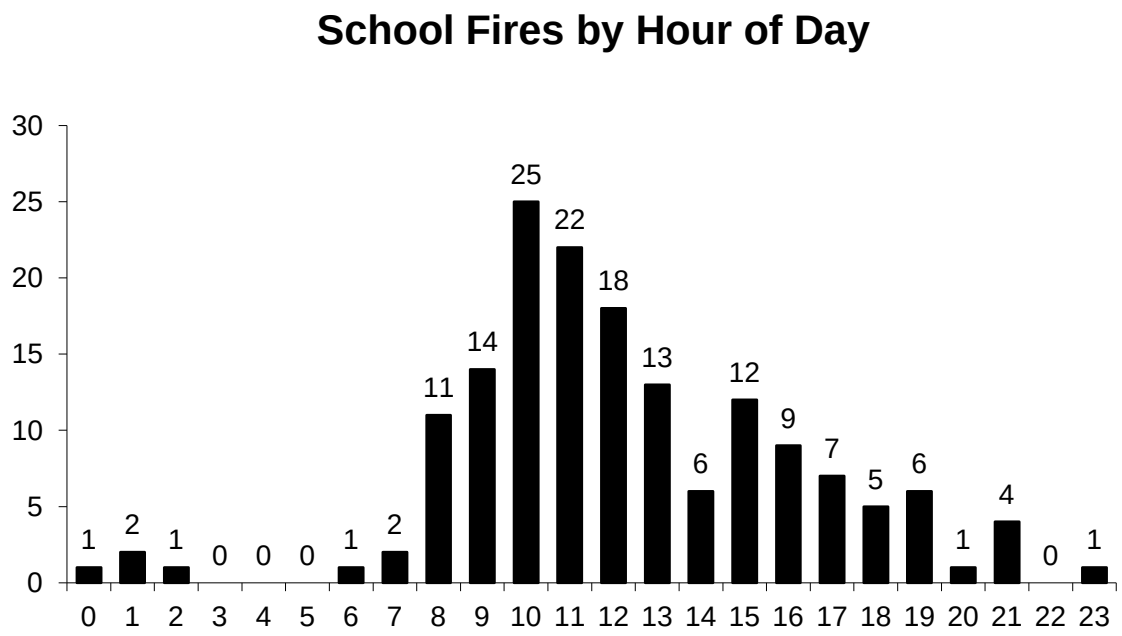
No AES in 59% of Fires in Schools

There were two school fires, or 4%, where automatic extinguishing systems (AES) were reported to have been present and operated effectively. In 2% of these fires, the AES failed to operate. In 30% of school fires, the fires were too small to trigger the system. An AES was present but it was undetermined if it operated in 5% of these fires. In 59% of the fires in schools, there were no systems.

AES Status in School Fires



Most School Fires Occur When School is in Session During Lunch
School fires generally occur during the school day. Seventy-five percent (75%) of the school building fires occurred during the hours between 8:00 a.m. and 3:00 p.m. with a sharp increase between 9:00 a.m. and 12:00 p.m. The following graph shows the hour of alarm on the 24-hour clock. Midnight to 1:00 a.m. is represented by 0, 1:00 a.m. to 2:00 a.m. is represented by 1, etc. Eighty-seven percent (87%) of these fires occurred between Monday and Friday.



Schools Must Hold Fire Drills Four Times a Year
Effective fire prevention has undoubtedly contributed to the low injury rate at school fires. According to 527 CMR 10.09, fire drills must be conducted four times a year. The fire department must approve an evacuation plan developed by someone from the school system. All teachers must receive instructions about the plan. Students must be advised of the fire drill procedure or take part in a fire drill within three days after entering school at the beginning of the school year.

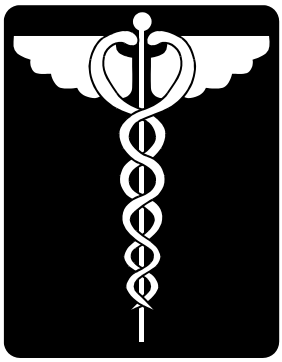
Schools Must Have Updated Multi-hazard Evacuation Plan
Under Section 363 of Chapter 159 of the Acts of 2000, "…the superintendent of each school district shall, prior to the beginning of the school year, meet with the fire chief and the police chief of the city, town or district to formulate a school specific 'Multi-hazard evacuation plan' for each school under the superintendent's supervision…" These plans are to encompass evacuations for fires, natural disasters such as hurricanes and other storms, disasters where students and faculty may be injured, as well as shootings, bomb threats and terrorist activities. The plan should include the creation of a crisis response team (CRT); a chain of command for the CRT including substitutes; a communication

plan; procedures for safe entry to and exit from the school for students, parents and staff; and policies for enforcing school discipline and maintaining a safe and orderly environment during the crisis that forced the evacuation. The superintendent and the chiefs should review this plan annually and any necessary changes should be implemented before the new school year begins. At the start of the new school year students should be instructed on how the plan affects them.

North Brookfield Had Largest Loss School Fire
In 2013 there were three school fires with estimated damages over $1 million. These three fires caused $11 million in damages. This $11 million accounts for 99% of the total dollar of all school fires in Massachusetts in 2013.

- On October 25, 2013, at 6:54 p.m., the North Brookfield Fire Department was called to a fire at the Valley View School. The fire began in a first floor closet. No one was injured at this fire. Detectors were present and alerted the occupants. The building was not sprinklered. Damages from this fire were estimated to be $5 million.

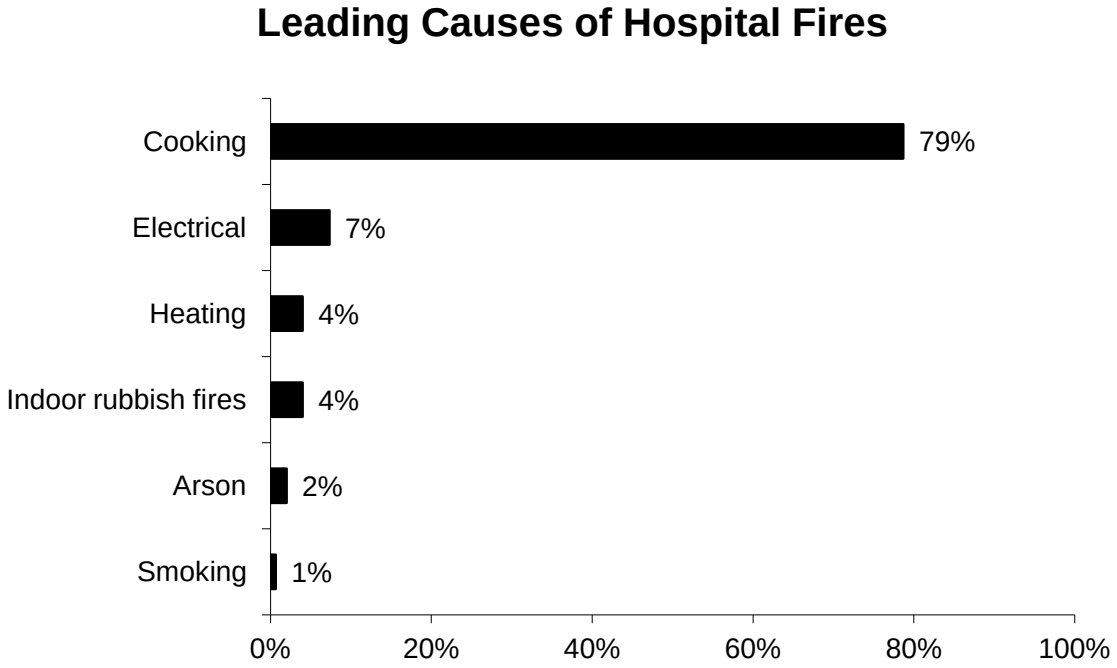
Fires in Hospitals



150 Fires Caused $103,184 in Damages
One hundred and fifty (150) building fires in hospitals caused an estimated dollar loss of $103,184. The average loss per fire was $688. In 2013, 1% of the 17,276 building fires occurred in hospitals. Fires in hospitals were down 3% from the 155 reported in 2012.

This property use section includes: mental institutions, including facilities for the criminally insane; medical, psychiatric and specialty hospitals where treatment is provided on a 24-hour basis; hospices; and clinics and clinic type infirmaries. It does not include doctor's or dentist's offices; nursing homes; alcohol or substance abuse centers; and mentally challenged/developmentally disabled facilities.

Cooking Caused 79% of Hospital Fires
Unattended cooking and other unsafe cooking practices caused 79% of the fires in hospitals in 2013. Electrical problems caused 7% of hospital fires. Heating equipment and indoor rubbish fires each caused 4% of these fires. Arson accounted for 2%, and smoking caused 1% of the fires in hospitals in 2013.



79% of Hospital Fires Began in the Kitchen
Seventy-nine percent (79%) of the fires in hospitals in 2013 started in the kitchen. Two percent (2%) occurred each in bedrooms, machinery rooms, ducts, and heating rooms or areas.

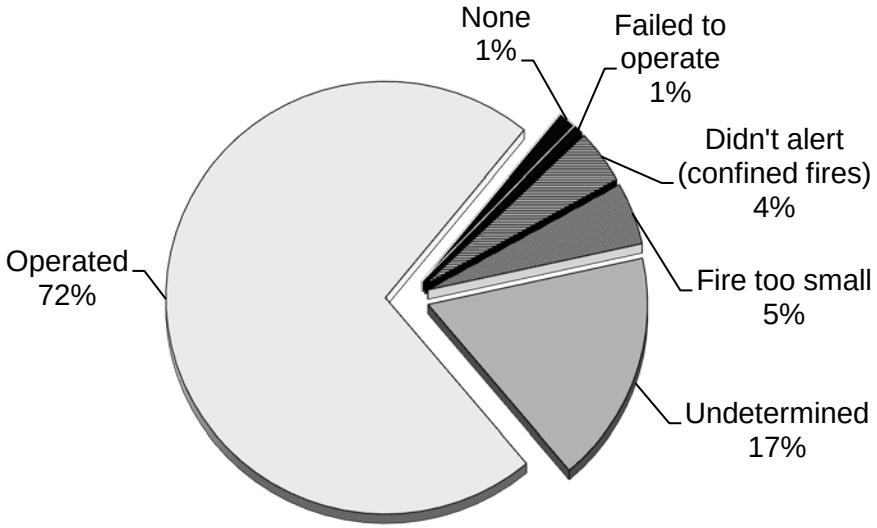
83% of Hospital Building Fires Confined to Non-Combustible Containers[29]
One hundred and twenty-five (125), or 83%, of all hospital building fires were reported as confined to non-combustible containers in 2013. One hundred and seventeen (117), or 78%, of these fires were contained cooking fires. Five (5) were confined indoor rubbish fires accounting for 3% of hospital fires. Three (3), or 2%, were fires confined to a fuel burner or boiler malfunction.

The number of contained fires decreased by 19 incidents, or 13%, from the 144 reported in 2012.

Detectors Operated in 72% of Fires
Smoke or heat detectors operated in 108, or 72%, of the hospital fires in 2013. In 4% of these fires[30], the detectors did not alert the occupants. The detectors failed to operate in 1% of these fires. In 1% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 5% of the hospital fires. Smoke detector performance was undetermined in 26 incidents, or 17%, of Massachusetts' 2013 hospital fires.

[29] 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.
[30] These represent confined fires where it was reported that the detector did not alert the occupants.

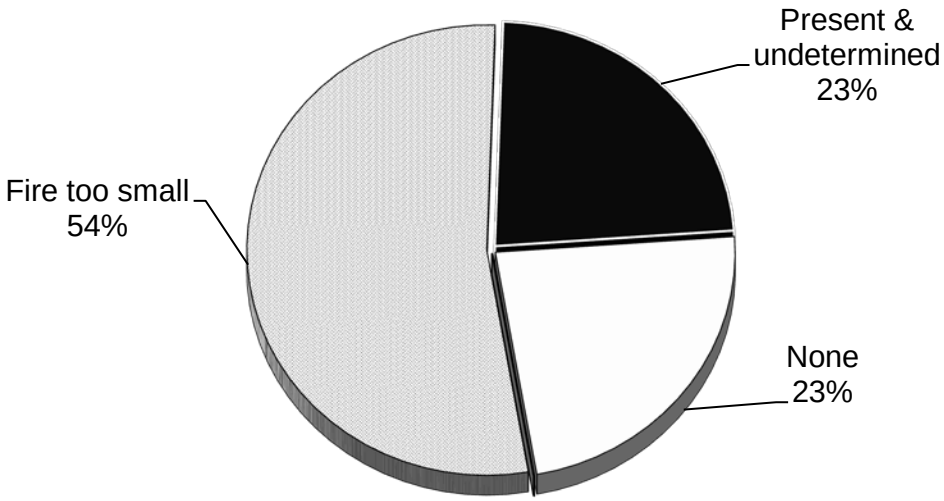
Detector Status in Hospital Fires



No AES in Almost 1/4 of Fires

Of the 30 hospital fires where automatic extinguishing system (AES) performance was known, 23%, or seven, of the hospital fires had no systems. The fire was too small to activate the AES in 16, or 54%, of these fires. An AES was present but its performance was unknown in seven, or 23% of the fires in hospital facilities.

AES Status in Hospital Fires



Boston Had Largest Loss Hospital Fire in 2013

- On January 8, 2013, at 10:08 a.m., the Boston Fire Department was called to an electrical fire of in a dentist's office. The fire originated in the electrical system of a dental chair. The fire did not cause any injuries. Detectors were present and alerted the occupants. The building was equipped with sprinklers but it was not reported if they operated. Damages from this fire were estimated to be $40,000.

Nursing Home and Rest Home Fires

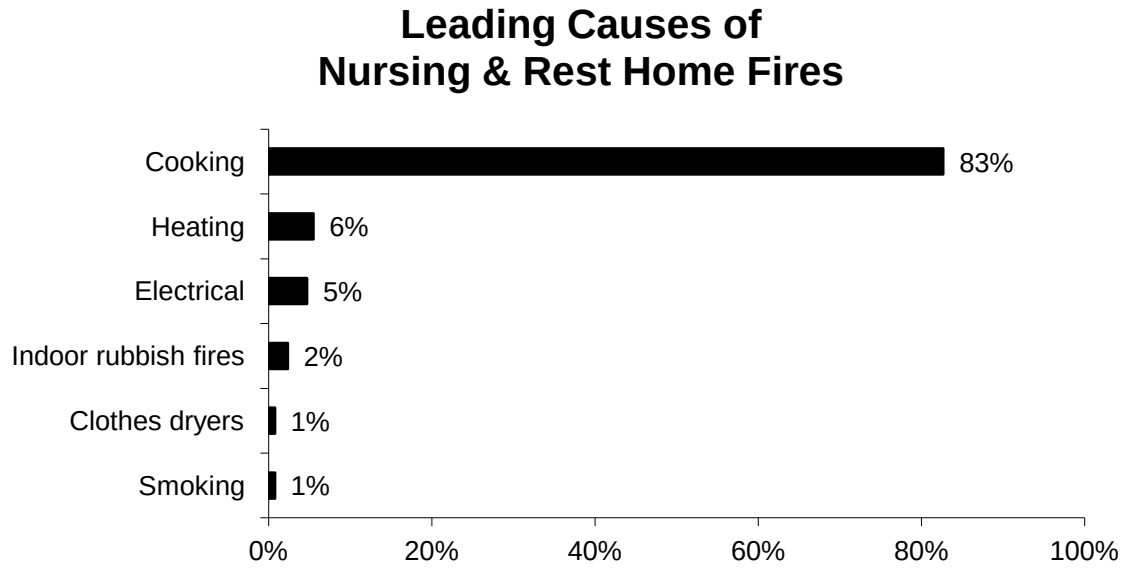
127 Fires Caused 3 Civilian Injuries & $55,090 in Damages

One hundred and twenty-seven (127) building fires occurred in nursing homes and rest homes during 2013. These fires caused three civilian injuries and an estimated dollar loss of $55,090. The average loss per fire was $434. In 2013, 1% of the 17,276 building fires occurred in nursing homes and rest homes. Fires in nursing homes and rest homes increased by 11% from the 114 fires reported in 2012.

This property use category includes only nursing homes licensed by the state that provide 24-hour nursing care for four or more persons.

Cooking Caused 83% of Nursing Home Fires

Unattended cooking and other unsafe cooking practices caused 83% of the fires in nursing and rest homes. Heating equipment caused 6% of these fires. Electrical problems caused 5% of these fires. Indoor rubbish fires caused 2%. Clothes dryers and smoking each caused 1% of nursing home fires in 2013.



83% of Fires Began in the Kitchen
Eighty-three percent (83%) of the nursing and rest home fires began in the kitchen. Four percent (4%) began in heating rooms or areas; and 3% started in bedrooms. Two percent (2%) of these fires began each in chimneys or flues and unclassified service or equipment areas.

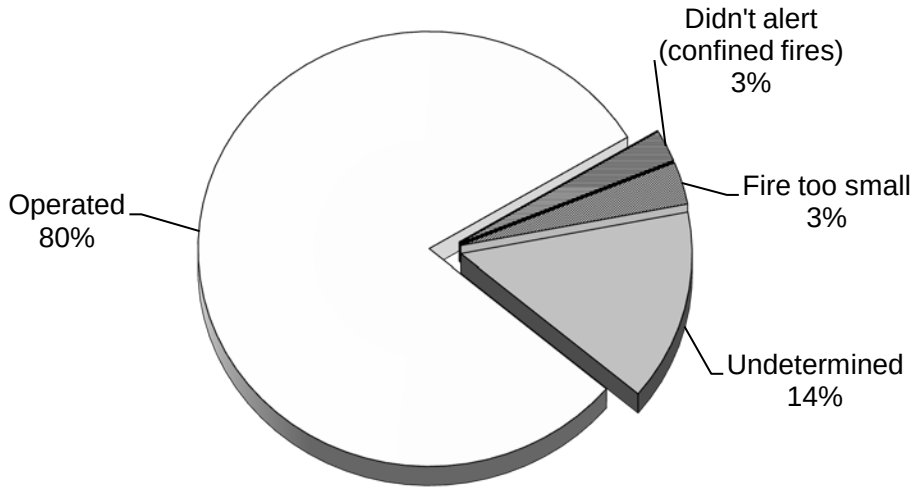
91% of Nursing Home Fires Were Confined to Non-Combustible Containers[31]
One hundred and fifteen (115), or 91%, of all nursing home building fires were reported as confined to non-combustible containers in 2013. One hundred and five (105) of the reported fires were cooking fires contained to a non-combustible container accounting for 83% of nursing home building fires. Five (5), or 4%, were fires confined to a fuel burner or boiler malfunction. There were three confined indoor rubbish fires in Massachusetts' nursing homes in 2013, accounting for 2% of these fires; and two fires, or 2%, were confined to chimneys or flues.

The number of confined fires in nursing homes increased in by 13 incidents, or 13%, in 2013 compared to the 102 reported in 2012.

Detectors Operated in 80% of Fires
Smoke or heat detectors operated in 102, or 80%, of the nursing home fires in 2013. In 3% of these fires[32], the detectors did not alert the occupants. There were no reported fires where the detectors were present but did not operate. There were no reported fires where there were no detectors present at all. The fire was too small to trigger the detector in 3% of the nursing home fires. Smoke detector performance was undetermined in 18 incidents, or 14%, of Massachusetts' 2013 nursing and rest home fires.

[31] 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.
[32] These represent confined fires where it was reported that the detector did not alert the occupants.

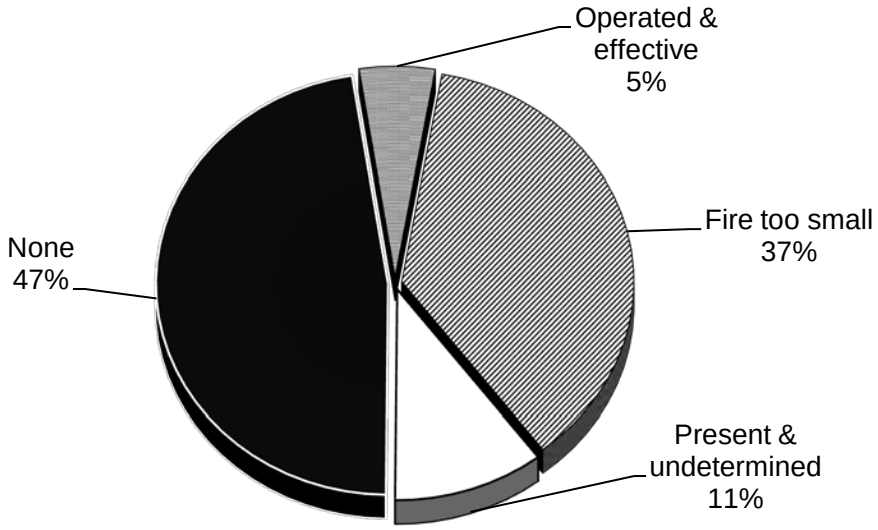
Detector Status in Nursing Home Fires



AES Operated in 5% of Nursing Home Fires

Of the 19 nursing home fires where automatic extinguishing system (AES) performance was known or reported, systems were present and operated effectively in one, or 5%, of these fires. In seven incidents, or 37% of the fires where AES presence was known, the fire was too small to activate the system. No systems were present in nine, or 47%, of these fires. In two of these incidents, or 11%, AES were present but their operation was undetermined.

AES Status in Nursing & Rest Home Fires



Longmeadow Has Largest Nursing Home Fire Loss

- On February 2, 2013, at 5:52 a.m., the Longmeadow Fire Department was called to a fire in a nursing home. The fire started in the elevator machine room. Sparks from the motor ignited oil rags. No one was injured at this fire. Smoke detectors were present and alerted the staff and occupants. Sprinklers were present but failed to operate. This fire caused $15,000 in damages.

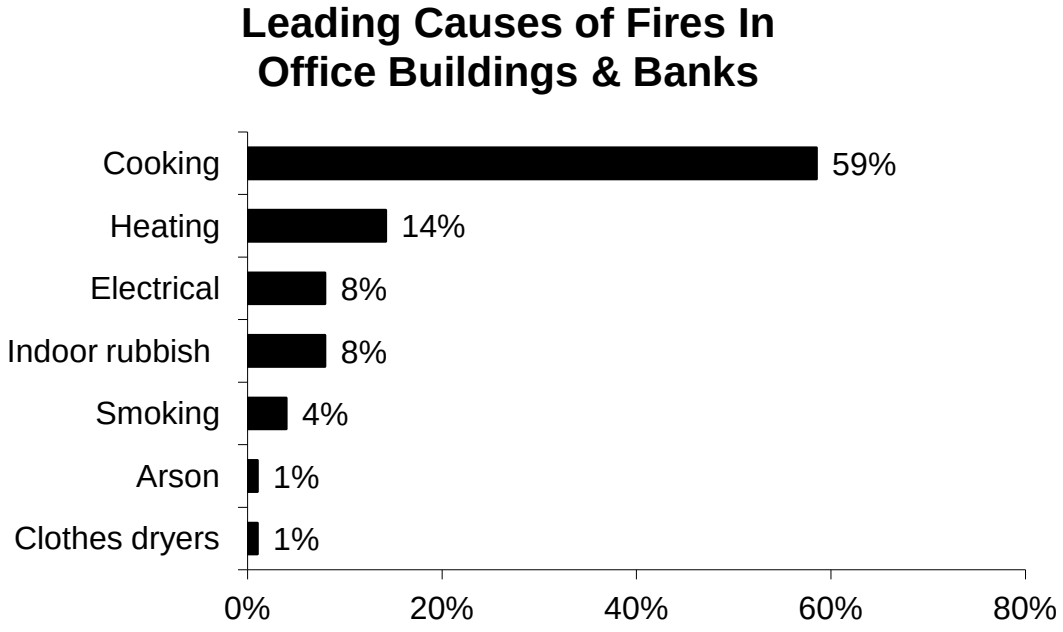
Office Building and Bank Fires

176 Fires, 1 Civilian Injury & $687,456 in Damages

One hundred and seventy-six (176) building fires occurred in offices and banks during 2013. These fires caused one civilian injury and an estimated dollar loss of 687,456. The average dollar loss per fire was $3,906. In 2013, 1% of the 17,276 building fires occurred in offices and banks. Fires in office buildings and banks decreased by 8% from 191 in 2012.

Cooking Caused 59% of Office & Bank Fires

Unattended cooking and other unsafe cooking practices caused 59% of the 176 fires in office buildings and banks in 2013. Heating equipment accounted for 14% of these fires. Indoor rubbish fires and electrical problems each caused 8% of the fires. Smoking caused 4% of these fires. Arson and clothes dryers each caused of 1% of the fires in Massachusetts' office buildings and banks in 2013.



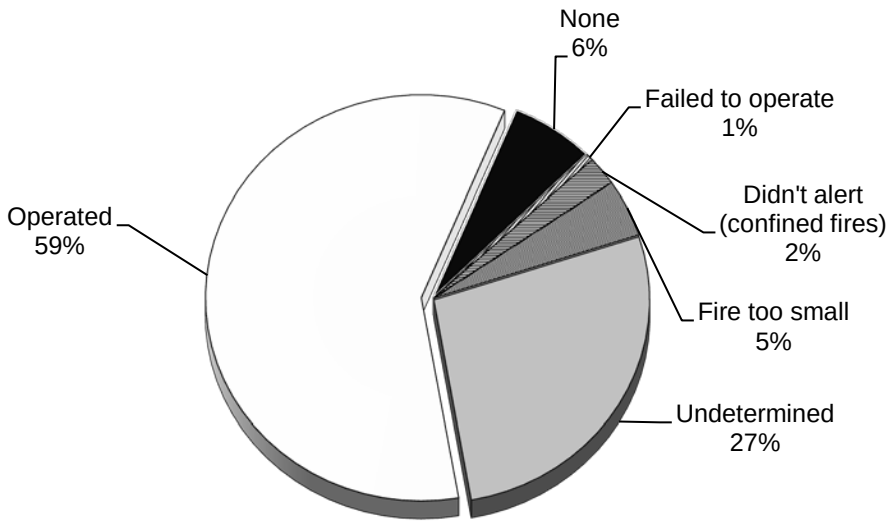
59% Office Building and Bank Fires Started in Kitchen
Fifty-nine percent (59%) of the fires in office buildings or banks started in the kitchen. Eleven percent (11%) of these fires began in a heating room or area. Three percent (3%) started in offices. Two percent (2%) each originated in exterior roof surfaces and unclassified assembly or sales areas. One percent (1%) each started in exterior stairways, bathrooms, laboratories, unclassified storage areas and wall assemblies.

77% of Office Building Fires Are Confined to Non-Combustible Containers[33]
One hundred and thirty-six (136), or 77%, of all office building and bank building fires were reported as confined to non-combustible containers in 2013. One hundred and two (102) of the reported fires were cooking fires contained to a non-combustible container, accounting for 58% of office building fires. Eighteen (18), or 10%, were fires confined to a fuel burner or boiler malfunction. Fourteen (14), or 8%, of these fires were contained indoor rubbish fires. One (1), or 1%, of these fires was confined to a chimney; and another, or 1%, was confined to a commercial compactor. Confined fires in offices decreased by seven incidents, or 5%, from the 143 reported in 2012.

Detectors Operated in 59% of Fires
Smoke or heat detectors operated and alerted the occupants in 104, or 59%, of the office building fires in 2013. In 2% of these fires[34], the detectors did not alert the occupants. In 6% of these fires, no detectors were present at all. In 1% of these fires the detectors failed to operate. The fire was too small to trigger the detector in 5% of the office building fires. Smoke detector performance was undetermined in 48 incidents, or 27%, of the fires in Massachusetts' office buildings.

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

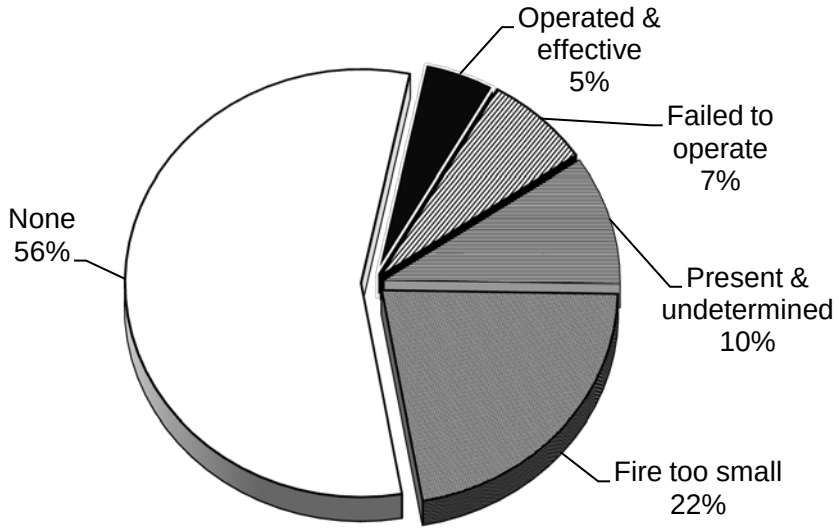
Detector Status in Office Building Fires



56% of Office Buildings and Banks Had No AES

No automatic extinguishing systems (AES) were installed in 23, or 56%, of the 41 fires occurring in office buildings and banks where AES performance was known. Systems were present and operated effectively in two, or 5%, of these incidents. A system was present but failed to operate in three, or 7%, of these fires. The fire was too small to activate the system in nine, or 22%, of these incidents. AES were present but it was undetermined if they operated in four, or 10%, of the total number of office building and bank fires.

AES Status in Office Building & Bank Fires



Walpole Has Largest Loss Office Building Fire

- On October 14, 2013, at 3:56 a.m., the Walpole Fire Department responded to a fire in a business office. The fire originated in the shipping area. A pile of oily rags spontaneously combusted. No one was injured at this fire. Detectors were present and they operated. The building had sprinklers but it was not reported if they operated. Damages from this fire were estimated to be $250,000.

Vacant Building Fires

289 Fires Caused 56 Fire Service Injuries & $24.3 Million in Damages

Two hundred and eighty-nine (289) building fires occurred in buildings that were vacant, under construction or demolition[35]. These 289 fires caused two civilian injuries, 56 firefighter injuries and an estimated $24.3 million in damages. The average dollar loss per vacant building fire was $84,254. The number of fires in vacant buildings decreased by 17, or 6%, from the 306 reported in 2012.

13% of Vacant Buildings Fires Were Arsons

Thirty-eight (38), or 13%, of the fires in vacant buildings were considered arson. These 38 arsons caused nine firefighter injuries and $1.1 million in damages. In 2013, 20% of the total 188 Massachusetts building arson fires occurred in vacant buildings.

43% of Vacant Building Fires Undetermined

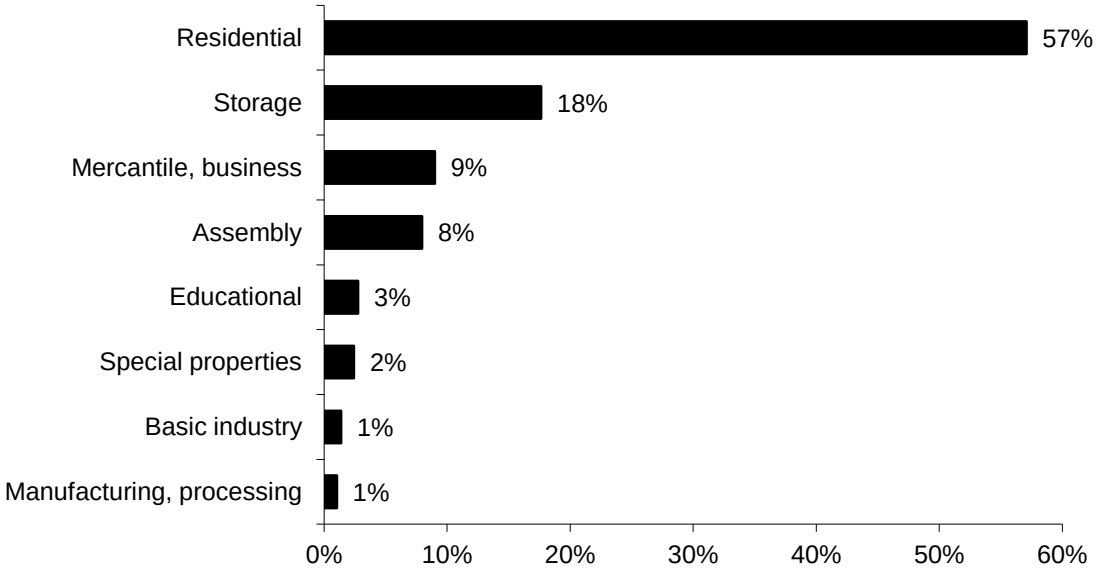
Forty-three percent (43%) of vacant building fires were undetermined. Forty-three (43), or 15%, of the 289 vacant building fires were undetermined after investigation. Eighty (80), or 28%, were coded as still under investigation.

57% of All Vacant Building Fires Were Residential

Out of the 289 vacant building fires, 165, or 57%, occurred in residential occupancies. This is a decrease of 17, or 9%, from the 182 that were reported in 2012. Fifty-one (51), or 18%, happened in storage facilities; 26, or 9%, happened at mercantile or business locations; 23, or 8%, were in public assembly properties; eight, or 3%, were at educational facilities; seven, or 2%, occurred in special properties; four, or 1%, happened at industrial facilities; and three, or 1%, happened at manufacturing or processing locations.

[35] A building is considered vacant if the Building Status is coded: 1-Under Construction; 3-Idle, not routinely used; 4-Under major renovation; 5-Vacant, secured; 6-Vacant, unsecured; & 7-Being demolished. The building use is coded separately in the Property Use field.

Vacant Building Fires by Property Use



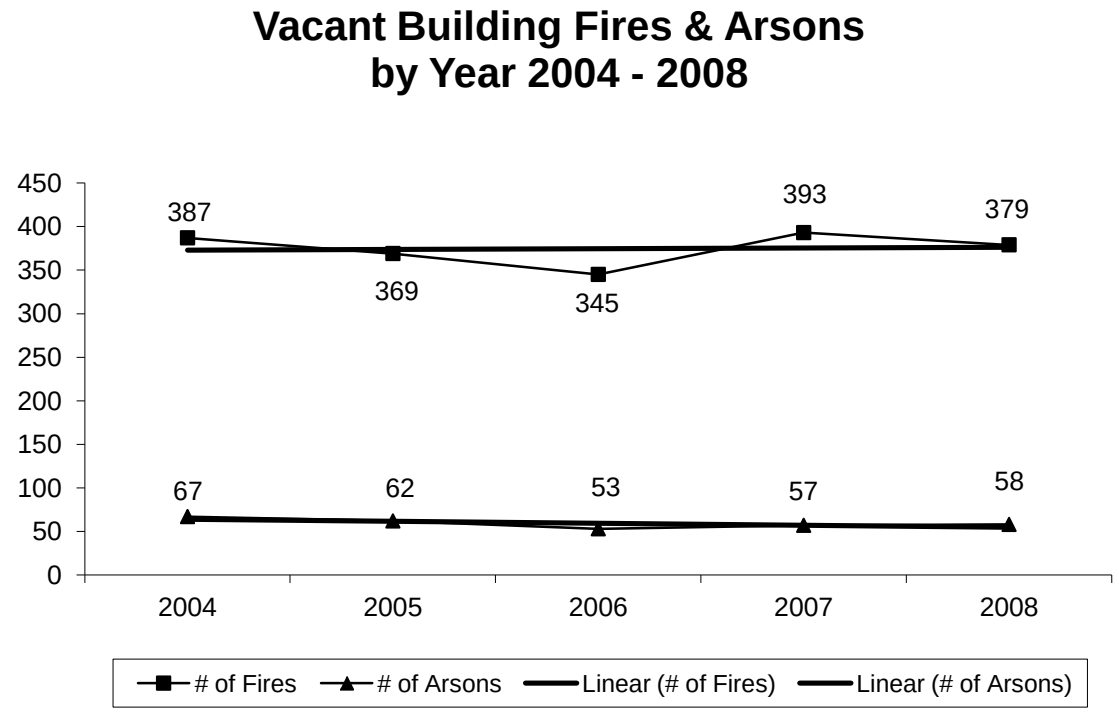
58% of All Vacant Building Arsons Occurred in Residential Buildings
Fifty-eight percent (58%) of the 38 vacant building arsons in 2013 occurred in residential occupancies. Sixteen percent (16%) took place in storage facilities; public assembly properties accounted for 11%; 5% occurred in mercantile or business properties; 5% happened in manufacturing or processing facilities; and 3% each occurred in educational facilities and industrial facilities.

The following table illustrates the trend in vacant building fires and arsons over the past decade.

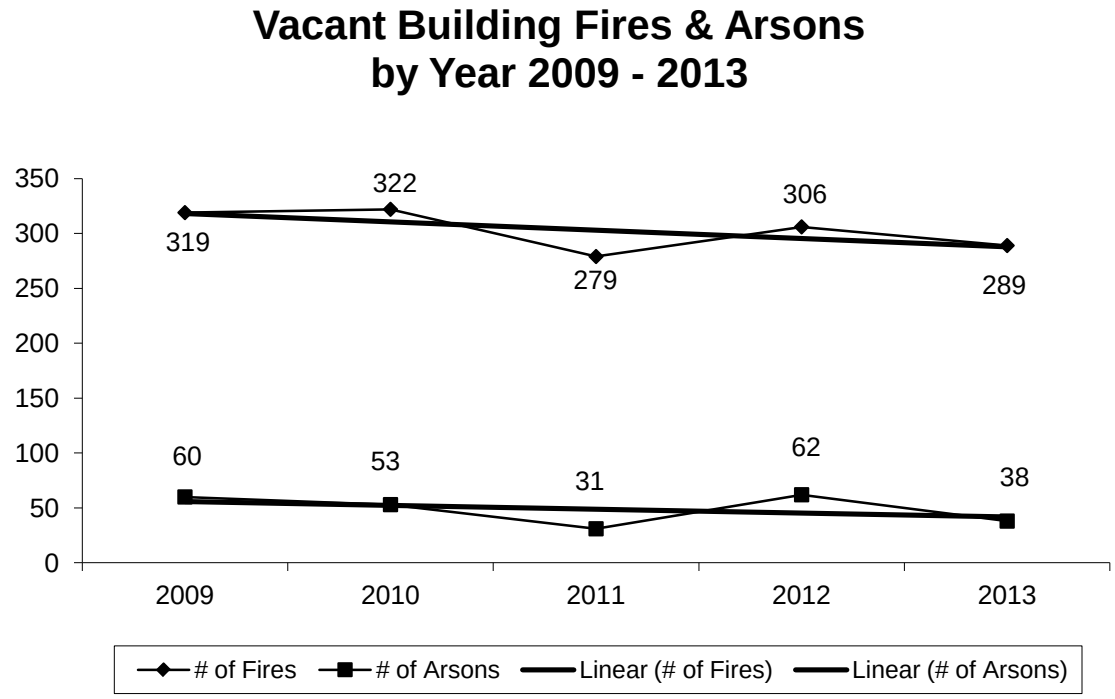
FIRES AND ARSONS IN VACANT BUILDINGS

Year	# of Fires	# of Arsons	% Arsons
2013	289	38	13%
2012	306	62	20%
2011	279	31	11%
2010	322	53	16%
2009	319	60	19%
2008	379	58	15%
2007	393	57	15%
2006	345	53	15%
2005	369	62	17%
2004	387	67	17%

The following graph shows a level trend in vacant building fires and a level trend in vacant building arsons between 2004 and 2008.



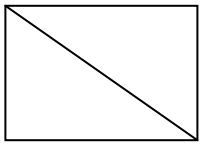
From 2009 through 2013, the number of vacant building fires and arsons seems to be decreasing.



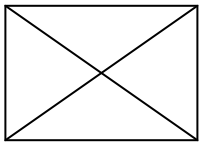
Communities Have Gone on the Offensive Against Vacant Buildings
Some communities have gone on the offensive against vacant buildings. In the aftermath of the December 3, 1999 Worcester Cold Storage Warehouse Fire, where six firefighters lost their lives, there has been an increased awareness of the dangers of abandoned and vacant buildings. This heightened awareness led to pre-incident planning including increased inspections, stricter adherence to building and fire codes along with tighter security around these buildings, more frequent patrols of areas where these buildings are located, tougher fines for owners who fail to keep vacant buildings secured, and the taking of these properties by the municipality through a variety of means. It also led to many changes in firefighting practices in these types of fires such as deciding whether to use an offensive attack strategy placing firefighters inside the building, or a defensive strategy by setting up master stream devices and fighting the fire from the outside.

The City of Worcester took the lead. It has marked vacant buildings with large placards for firefighters and other public safety personnel. These placards identify vacant buildings and either warn personnel to proceed with extreme caution when entering these buildings or that the building is off limits and a defensive, exterior attack is recommended.

These standards are now mandatory throughout the Commonwealth. Under both the Building Code (780 CMR 121.7 & 8) and the Fire Code (527 CMR 10.13 (7)), vacant buildings must be secured and marked with the following symbols.



Interior hazards exist. Interior operations should be conducted with extreme caution.



Interior and/or exterior hazards exist. Consideration should be given to conduct operations from the exterior only.

Neither of these symbols limit the incident commander in directing the operations he deems necessary.

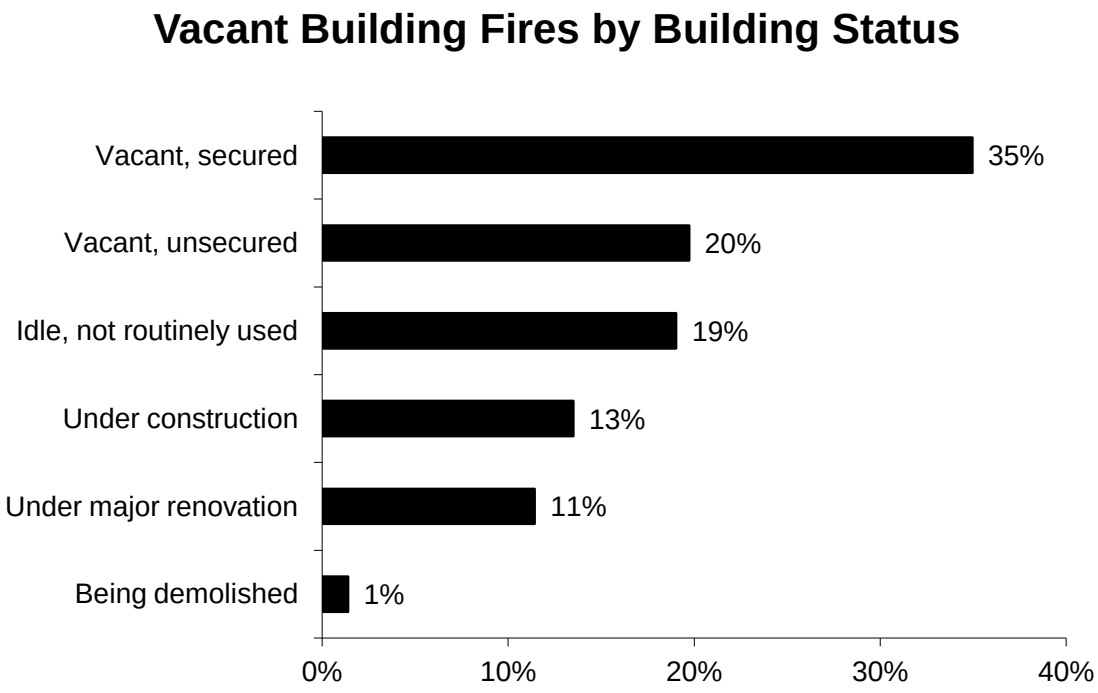
Vacant Buildings Also Threaten Community
Vacant buildings also pose a serious threat to the surrounding community. They become targets for vandalism. Children may find them attractive play spaces. Drug users or dealers may utilize the space for their activities. The homeless may seek shelter and set fires to keep warm. Arsonists may consider these buildings to be easy targets. All of these activities threaten the safety of the neighborhood and surrounding homes.

An escalating problem in vacant buildings is urban mining. Urban mining is when someone scavenges the metal wiring and plumbing in a building and sells it for scrap. In

some instances the thieves do not know what they are cutting or disconnecting and may start a fire. In many ways vacant building fires "tax" the finances of the municipalities where they are located.

Effective Boarding Up Is Key to Protection
Removing furniture, contents and debris from the interior of the building, building officials insisting that all openings to the building are securely boarded up according to USFA, National Arson Prevention Initiative Board Up Procedures, preferably from the inside, and periodic security checks can reduce the risk of fire in any vacant building and the inherent risk to firefighters called to fight one. Local officials and building owners must ensure that these buildings are adequately secured to prevent entry into these buildings. This is a community's first line of defense in the battle to prevent arson and to maintain housing stock.

Over 1/3 Were Vacant and Secured Buildings
Of the 289 fires in vacant buildings in 2013, 101, or 35%, were in vacant buildings that were secured. Fifty-seven (57), or 20%, of these fires occurred in vacant buildings that were unsecured. Fifty-five (55), or 19% of these fires took place in buildings that were



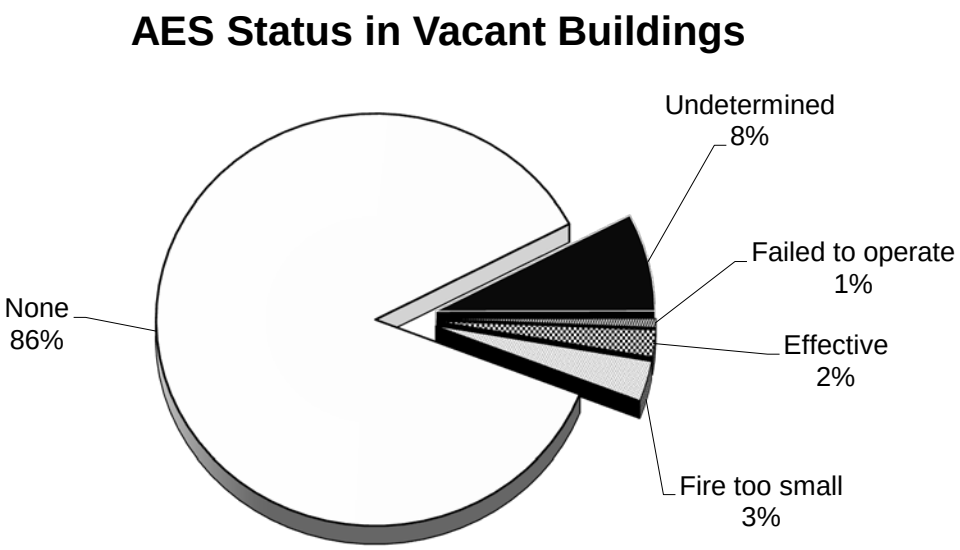
idle or not routinely used; 39, or 13% were under construction; 33, or 11%, happened in buildings undergoing major renovations; and four, or 1%, of the fires in these buildings occurred in buildings that were in the process of being demolished.

39% of All Vacant Building Arsons Occurred in Unsecured Buildings
Fifteen (15), or 39%, of all vacant building arsons in 2013 occurred in unsecured vacant buildings. Thirteen (13), or 34%, of these arsons occurred in vacant and secured

buildings. Only four, or 31%, of the arsons involving vacant and secured buildings reported having the fire start on the exterior of the building. Four (4), or 11%, occurred in idle buildings that are not routinely used. Three vacant building arsons, or 8%, occurred in buildings undergoing major renovations. Buildings under construction accounted for two, or 5%, of vacant building arsons; and one, or 1%, happened to a building being demolished.

86% Vacant Buildings Had No AES

No automatic extinguishing systems (AES) were installed in 86% of the 289 fires occurring in vacant buildings where AES presence was known. In 3% of these incidents, the fire was too small to activate the system. The AES failed to operate in 1% of these incidents. Systems were present and operated effectively in 2% of these incidents. AES performance was not known in 8% of the building fires in vacant buildings in 2013.



Sprinklers Must Be Maintained

When the sprinkler systems are present, they must be maintained. If the head of the fire department decides to grant a request under MGL Chapter 148, Section 27A to disconnect the system, extra precautions should be taken.

Firefighters Injured at 1 of Every 5 Vacant Building Fires

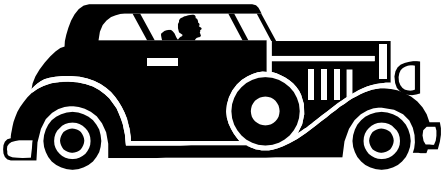
One of the most dangerous types of fires for firefighters in 2013 was vacant building fires. Vacant building fires accounted for 56, or 12%, of all firefighter injuries in 2013. These 56 injuries also represent 13% of the number of firefighter injuries at all building fires. On average there was one firefighter injury for every five vacant building fires.

Large Loss Vacant Building Fires
In 2013, there were four vacant building fires that had an estimated dollar loss greater than $1 million. These fires accounted for $11.1 million in estimated damages, or 46%, of all vacant building dollar loss estimates in 2013. In 2012 there were two vacant building fires with more than $1 million in damages.

- On September 9, 2013, at 1:55 a.m., the Springfield Fire Department was dispatched to a building fire in a vacant public school built in 1901. The cause of the fire was not determined. There were no detectors present and the building was sprinklered but failed to operate. Three (3) firefighters were injured at this fire and damages were estimated at $5 million.

Motor Vehicle Fires

2,587 Motor Vehicle Fires Account for 9% of All Reported Fires
Motor vehicle fires accounted for 9% of total reported fire incidents. The 2,587 motor vehicle fires in 2013 were an increase of 3% from the 2,511 motor vehicle fires reported in 2012. They caused 10, or 23%, of the civilian fire deaths, 24 civilian injuries, 16 fire service injuries, and an estimated property damage of $27.3 million.



According to MFIRS, a motor vehicle fire is defined as any fire involving a car, truck, boat, airplane, construction equipment or other mobile property (not being used as a permanent structure) that occurs outside of a structure.

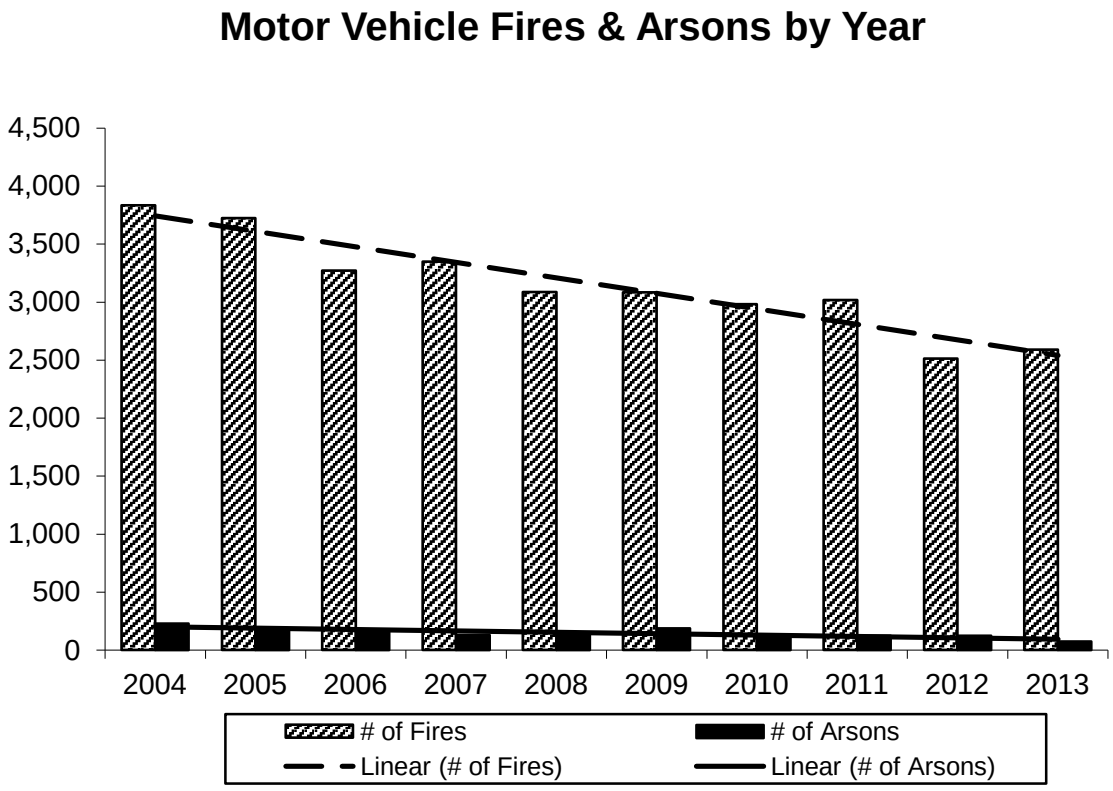
26 Years of the Burned Motor Vehicle Reporting Law
The Massachusetts Fire Incident Reporting System identified motor vehicle fires and motor vehicle arson as a major problem in 1985. The Burned Motor Vehicle Reporting Law took effect in August of 1987. The law requires owners of burned motor vehicles to complete and sign a report that must also be signed by a fire official from the department in the community where the fire occurred. This law has been effective in reducing motor vehicle fires overall and vehicle arsons in particular. Since it took effect in 1987, motor vehicle arsons have decreased by 98% from a high of 5,116 in 1987 to a low of 75 in 2013. The percentage of motor vehicle fires that are arsons has also dropped by 52% in the past decade from 6% in 2003 to 2.9% in 2013.

The table below shows the number of vehicle fires and vehicle arsons and the percentage of vehicle fires caused by arson for the past decade.

VEHICLE FIRES AND VEHICLE ARSONS BY YEAR

Year	Vehicle Fires	Vehicle Arsons	% Arsons
2013	2,587	75	2.9%
2012	2,511	126	5.0%
2011	3,015	124	4.1%
2010	2,978	116	3.9%
2009	3,081	189	6.1%
2008	3,085	151	4.9%
2007	3,346	131	3.9%
2006	3,270	159	4.9%
2005	3,722	184	5.0%
2004	3,832	230	6.0%

The following graph illustrates the data in the previous table.



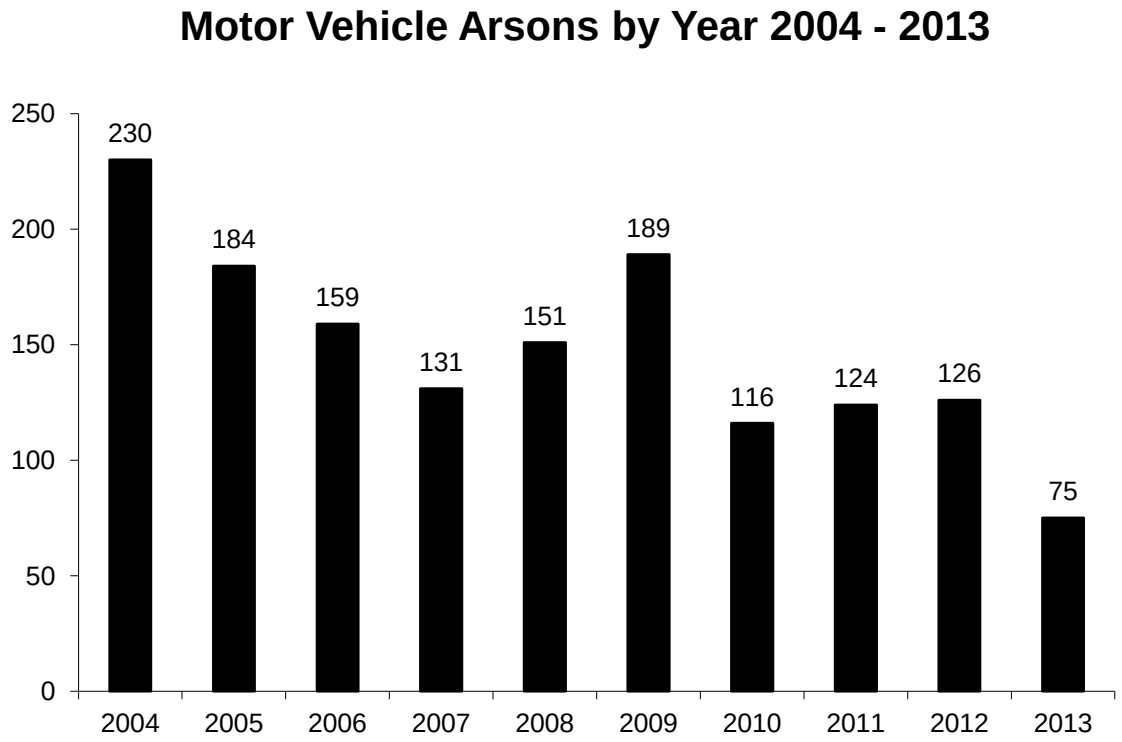
10 Motor Vehicle Fire Deaths

There were 10 civilian fire deaths in eight motor vehicle fires in 2013. There were four deaths in four motor vehicle crashes with ensuing fire. Two (2) of these deaths were self-immolations in two separate fires. Two (2) of these deaths was an airplane crash with ensuing fire. The other death involved a person working on a motor vehicle in his back yard with gasoline while smoking. One (1) homeless person was killed when a propane stove ignited bedding in the van that he was living in.

Mechanical Failures Caused 1/4 of Massachusetts Motor Vehicle Fires
Of the 2,587 motor vehicle fires in 2013, 25% were caused by some type of mechanical failure or malfunction; 3% were considered intentionally set; and 38% resulted from other accidental causes. The cause was undetermined or not reported in 34% of the motor vehicle fires.

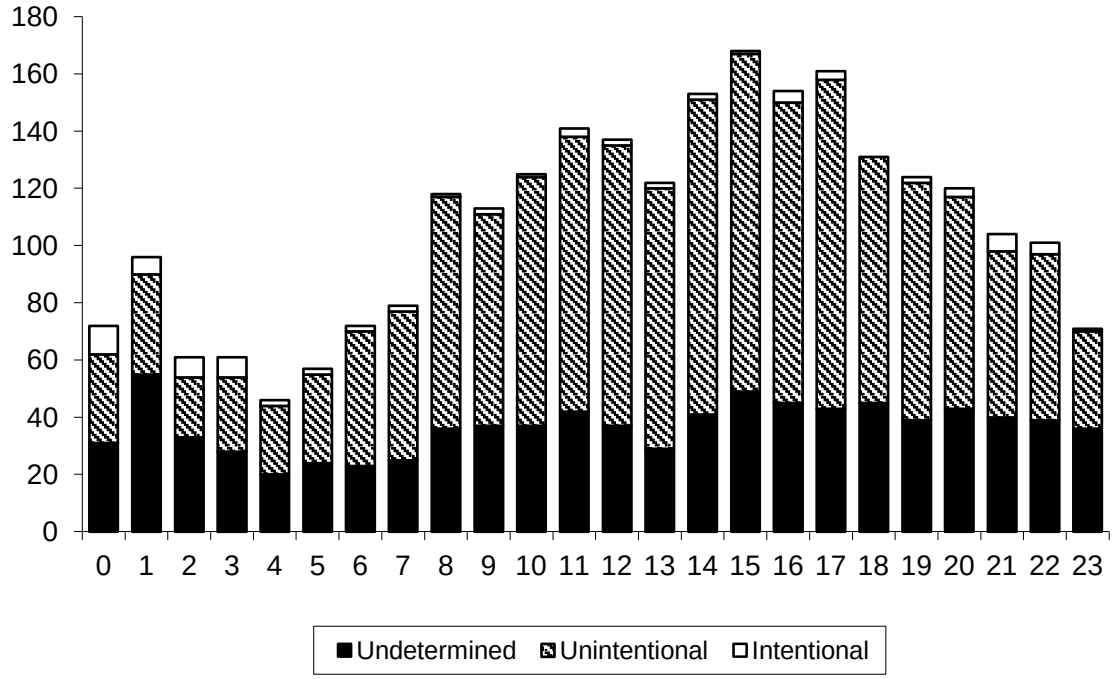
Motor Vehicle Arsons Decreased by 40%
In 2013, there were 75 reported motor vehicle arsons. This is a decrease of 40% from the 126 reported in 2012. These 75 arsons caused two civilian deaths, which were suicides, and an estimated dollar loss of $6.5 million.

The following graph depicts the drop in motor vehicle arsons from 2004 to 2013.



Unintentional Fires Occur During Day and Early Evening
Motor vehicle fires of different causes occur at different times of the day. As the following graph shows, accidental or unintentional fires are more common during the day and early evening. Incendiary fires are generally set in darkness. The graph below shows fire frequency by time of day on the 24-hour clock for the causes of motor vehicle fires. Midnight to 1:00 a.m. is represented by 0, 1:00 a.m. to 2:00 a.m. is represented by 1, etc.

Causes of Motor Vehicle Fires by Time of Day



Just Over 1/2 of Massachusetts Motor Vehicle Fires Involved Automobiles
Automobiles and vans accounted for 51% of the 2,587 motor vehicle fires; 2% were trucks weighing less than one ton; and 3% were trucks weighing more than one ton.

Logan Airport Has Largest Loss Motor Vehicle Fire

- On January 7, 2013, at 12:16 a.m., the Massport Fire Department at Logan International Airport was dispatched to a fire in a 787 Dreamliner. The most probable cause was a battery failure in the cargo hold of the airliner. No one was injured at this fire. Total estimated damages were $10 million.

Car Fire Safety Tips
Regular maintenance is the best way to prevent car fires. Leaking gasoline, oil and hydraulic fluids can catch fire. Electrical problems can cause short circuits and heat build-up. A properly operating catalytic converter can reach 1,100° F. It can get even hotter if the car has worked hard or needs a tune-up. If other parts come in contact with it, they can ignite. Catalytic converters on parked cars will sometimes ignite a pile of leaves or dried grass underneath.

What Should You Do if You Have a Car Fire?

1. Pull over to the side of the road and stop as soon as possible. For automobiles with an automatic transmission put the vehicle in Park; or for cars with a manual transmission, set the parking brake and put it in gear. Fire can disable a car's electrical system in seconds. Power steering and brakes can be harder to use than normal.
2. Turn off the ignition. You want to make sure no more gasoline is pumped to the fire.
3. Get everyone out of the car.
4. Move away and call 911. Do not open the hood or trunk. You risk injury, and give the fire more oxygen.

Unless you're trained, let firefighters handle it. They wear protective clothing and are trained to handle pressurized systems, exploding bumpers, etc. Chemicals in the fire extinguisher can be compacted. To be effective, they must be used correctly. You don't want to practice in a panic situation.

Gasoline Deserves Respect

There were 38 motor vehicle fires at gas and service stations in 2013. There were 43 motor vehicle fires at facilities used for motor vehicle or boat sales, service or repairs. Many of these fires were started by gasoline or gasoline fumes. Gasoline is so much a part of our lives that we don't think about it. However, it is a very dangerous substance and certain measures should be taken to minimize the chances of an incident.

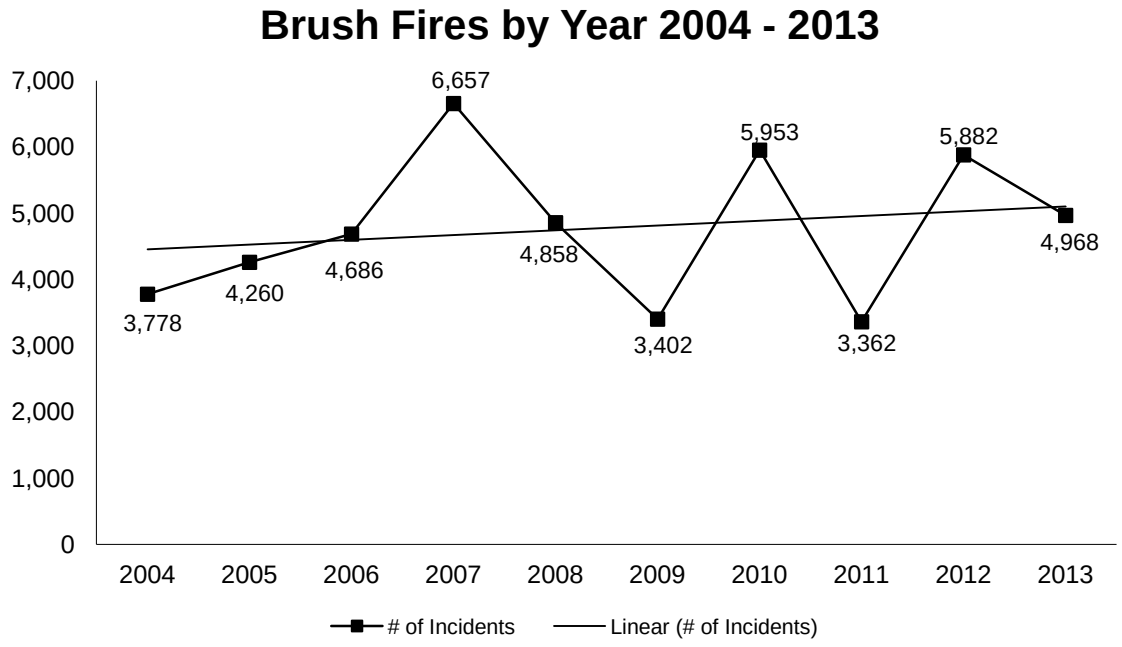
Gas Station Safety

- Turn off your car when you get gas.
- At self-service stations, remember to put the nozzle back and your gas cap on before driving off. Monitor the fueling; do not get back in the vehicle.
- Gasoline vapors burn at a very low temperature. These fumes are heavier than air, and can travel a distance to find a spark. Keep anything that could provide heat to start a fire away from gasoline. A spark or a lit cigarette is enough to ignite the invisible fumes that may linger on clothing.
- If you need to carry or store gasoline, use an approved container.
- When filling an approved container, place it on the ground to prevent static electricity build–up which could ignite the gasoline vapors. Make sure that the nozzle is always in contact with the container when filling.
- Make sure the approved container is in a secured, upright position away from passenger areas, and that the fill and vent openings are tightly closed. At home, always store these containers in safe, secure areas – outside of living areas – away from ignition sources such as pilot lights.

Outside and Other Fires

9,888 Brush, Trash, & Other Outside Fires Down 12%
The 9,888 outside and other fires and explosions caused six civilian deaths, 24 civilian injuries, 46 fire service injuries, and an estimated dollar loss of $8 million. The 4,968 trees, grass and brush fires, 3,045 outside trash fires, 850 special outside fires, 48 cultivated vegetation or crop fires, and 977 other fires accounted for 33% of the total fire incidents in 2013. These fires decreased by 12% from the 11,236 incidents reported in 2012.

These types of fires are the most variable categories of fires from year to year. Large increases and decreases are not uncommon and are often dependent on the weather. If it is a dry spring or summer, the number of outside fires usually increases. In 2013, the reported number of brush fires decreased by 914 or 16%, from the 4,968 reported in 2012.



Fire departments are required to report any fire or explosion resulting in a dollar loss or human casualty to MFIRS. Fires that do not result in a loss may be reported. Many fire departments, particularly those that submit data electronically, voluntarily report these fires. These figures should be considered an underestimate of the "no-loss" fire incidents to which fire departments actually responded.

The 9,888 reported outside and other fires include:

- 4,968 natural vegetation fires (tree, grass, and brush fires) that caused three civilian deaths, two civilian injuries, 29 fire service injuries, and an estimated dollar loss of $297,854; this is a 16% decrease from the 5,882 incidents reported in 2012.

- 3,045 trash fires that caused one civilian injury, six fire service injuries and an estimated dollar loss of $323,002; this is a 10% decrease from the 3,402 incidents reported in 2012.

- 850 special outside fires (including outside, storage, equipment, mailbox fires and outside gas or vapor explosions) that caused three civilian deaths, two civilian injuries, and an estimated dollar loss of $1.6 million; this is a 4% decrease from the 890 incidents reported in 2012.

- 48 cultivated vegetation or crop fires that caused an estimated dollar loss of $60; this is a 2% increase from the 47 incidents reported in 2012.

- 977 other fires that could not be classified further which caused 19 civilian injuries, 11 fire service injuries, and an estimated dollar loss of $2.7 million; this is a 4% decrease from the 1,015 incidents reported in 2012.

632 Brush, Trash & Other Outside Arsons

There were 632 reported brush, trash and other outside arsons in 2013. There were 323 natural vegetation arsons, 79 outside rubbish arsons, 150 special outside arsons, four cultivated vegetation or crop arson, and 76 arsons that could not be classified any further. These 632 arsons caused two civilian deaths, two civilian injuries, one fire service injury and $127,650 in estimated damages.

2,224 Fires with Cause Still Under Investigation or Undetermined

In 2013, 291 outside and other fires were still listed as 'Cause Under Investigation'. There were 1,933 fires where the *Cause of Ignition* was listed as 'Undetermined'.

Large Loss Outside and Other Fires

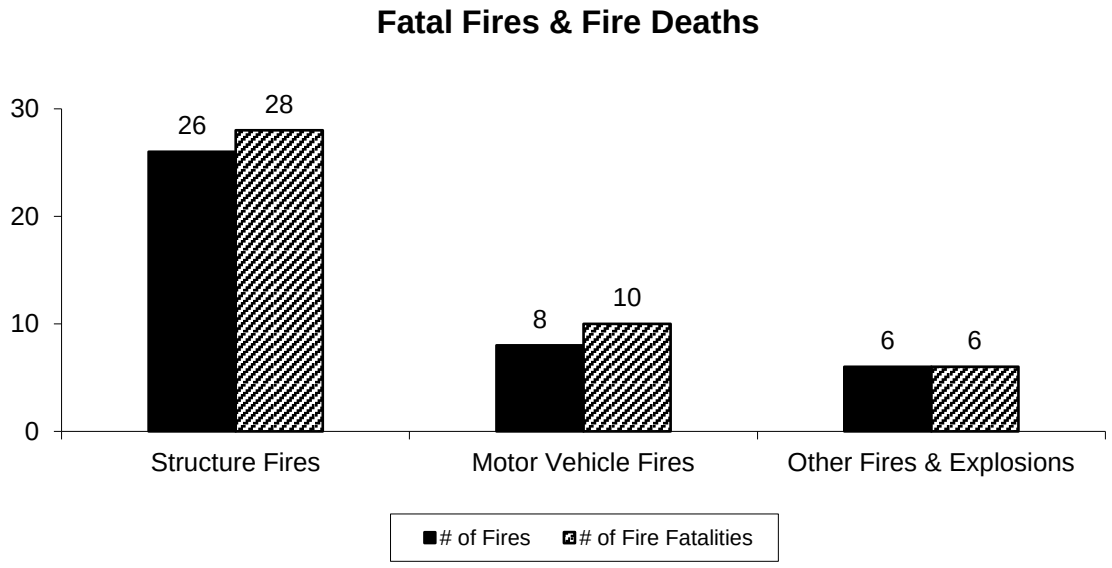
- On April 6, 2013, at 1:52 p.m., the Northborough Fire Department was called to an unclassified special outside fire in a parking lot at an outside mall. No one was injured at this fire. Damages from this fire were estimated to be $1 million.

2013 Massachusetts Fire Deaths

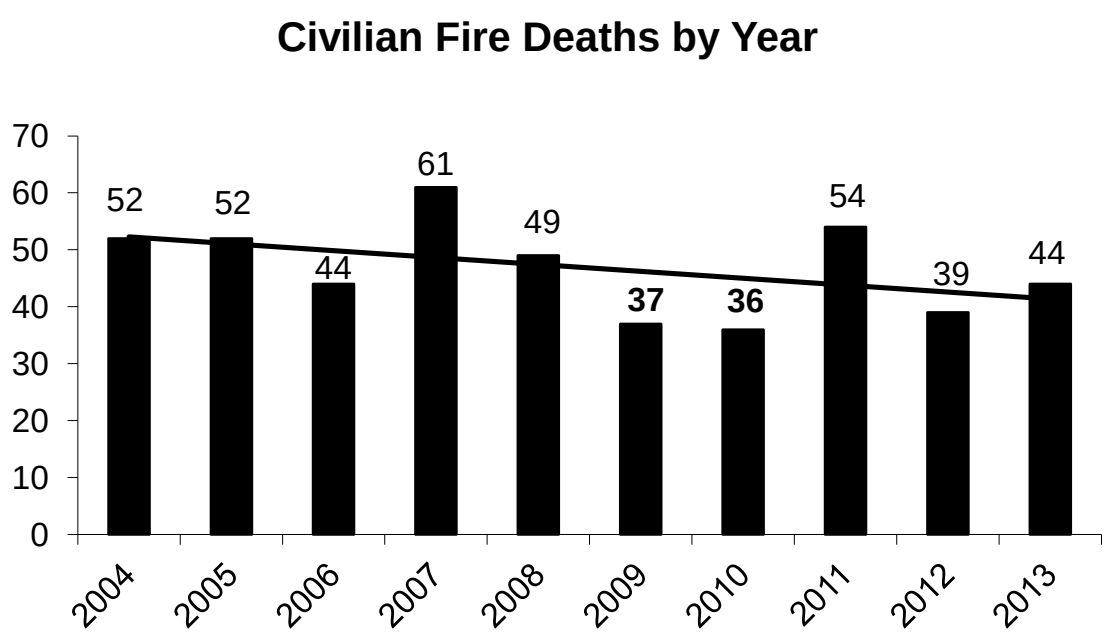
Civilian Fire Deaths

44 Civilians Died in Massachusetts Fires
Forty-four (44) civilians died in 40 Massachusetts fires during 2013. This is a 13% increase from the 39 civilian fire deaths recorded in 2012. Twenty-eight (28) civilians died in 26 structure fires. Ten (10) people died in eight motor vehicle fires. Six (6) people died in six outside fires in Massachusetts in 2013. In 2013, there were 6.7 fire deaths per one million population in Massachusetts which is up from 6.0 fire deaths per one million population in 2012.

The following graph shows the number of fatal fires and the number of civilian fire deaths in structure fires, motor vehicle fires and other fires and explosions.



Fire Deaths Increase 13% from 2012
The 44 civilian fire deaths reported in 2013 were an increase of five, or 13%, from the 39 reported in 2012. The following chart shows the trend of civilian fire deaths for the past decade on a general decline. Civilian fire deaths have decreased by 58% from the high of 105 in 1990.

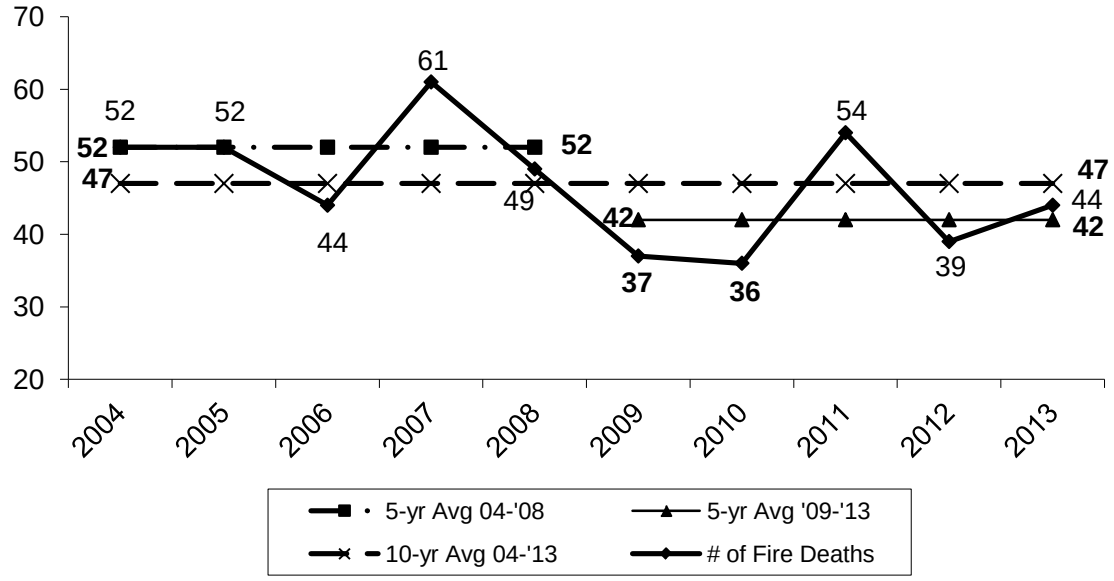


2013 Is Below the 10 - Year Averages

Because the number of fire deaths fluctuates from year to year and may be influenced by uncontrollable outside factors such as high energy costs for heating, it is helpful to look at averages over five- and 10-year periods. The following graph illustrates the number of fire deaths for the past 10 years in relation to the five-year average for fire deaths for the periods from 2004 through 2008 and from 2009 through 2013. The average number of fire deaths per year from 2004 through 2008 was 55 deaths. The average number of fire deaths per year from 2009 through 2013 was 42 deaths. The graph also depicts the relationship of the number of fire deaths in relation to the 10-year average of 47 deaths for the same time period. Four (4) of the last five years have been below the 10-year average and three of the last five years have been below the five-year average.

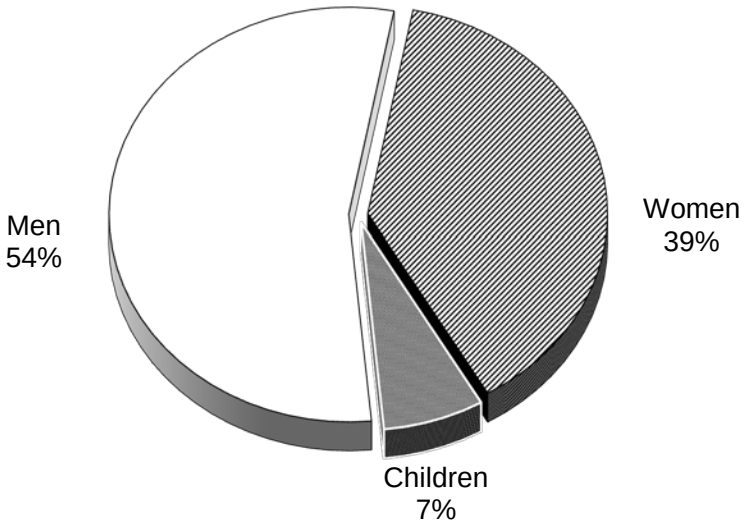
Note that the following chart starts at 20 rather than the traditional zero value. This is so the reader can concentrate on the sometimes subtle changes in the figures. The 44 fire deaths in 2013 are 5% above the five-year average and 6% below the 10-year average.

Civilian Fire Deaths by Year

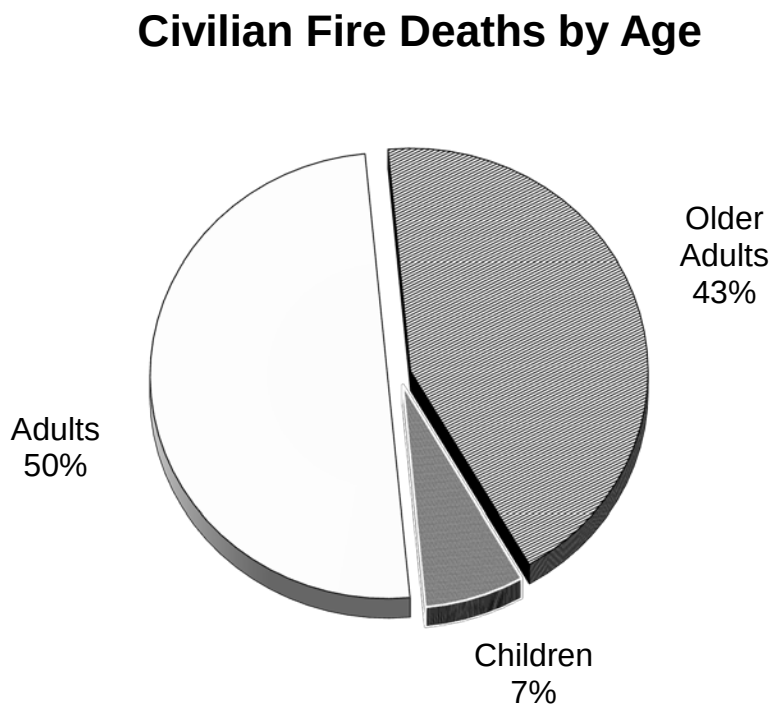


24 Men, 17 Women and 3 Children Under 18 Died from Fires in 2013
Of the 44 fire deaths, 24, or 54%, were men, 17, or 39%, were women and three, or 7%, were children under 18. The following pie chart illustrates the above figures.

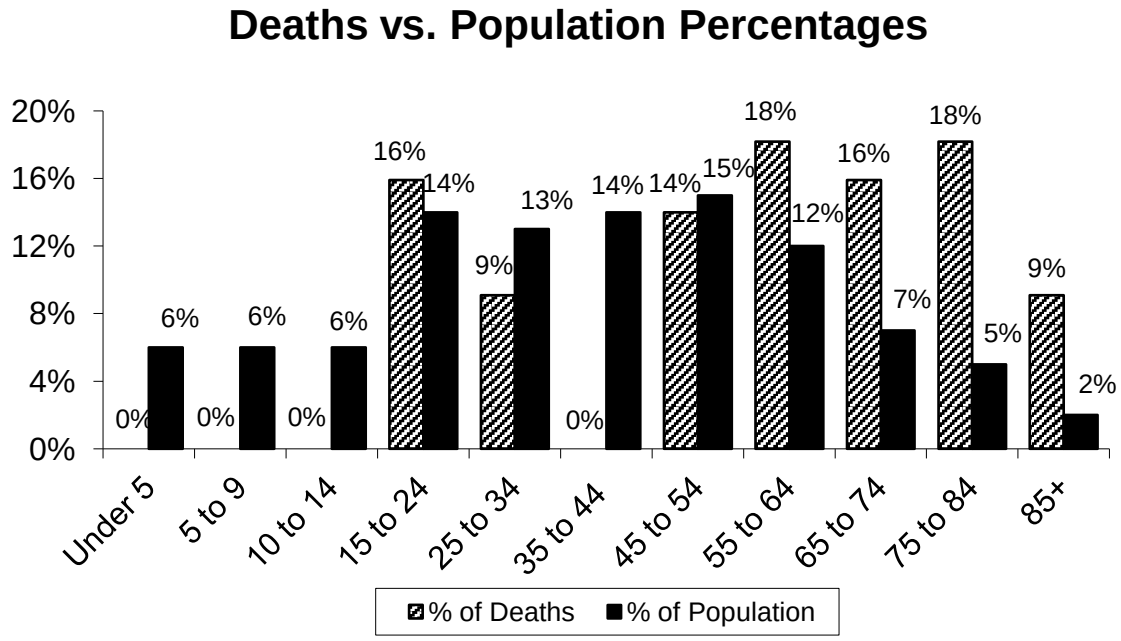
Civilian Fire Deaths by Gender



43% of Fire Deaths were Over 65
Seventeen (17), or 43%, of the civilian fatal fire victims were over 65 years of age. This included nine elderly men and 10 elderly women. Three (3), or 7%, of the civilian fatal fire victims were under 18 years old. Twenty-two (22), or 50%, were adults between 18 and 65 years of age. The following pie chart illustrates the above figures.



Older Adults at Great Risk for Fire Death
Older adults, especially those over the age of 85, had the greatest risk of dying in a fire. Adults over the age 85 account for 2% of the population but 9% of the fire deaths. The risk of fire death for these adults is 4.5. This means that these adults were four and a half times as likely to be fire-related fatalities. The following graph shows the percentage of fire deaths versus population percentage by age groups in 2013. Other older adults, between the ages of 75 and 84, accounted for 5% of the population but 18% of the fire deaths. Their risk of fire death at 3.6 is just below that of the group of older adults over 84. Older adults between the ages of 65 and 74 are also more than twice as likely to die in a fire in Massachusetts.



How to Read the Preceding Chart
If an age group represents 10% of the population, we expect it to account for 10% of the fire deaths. If it accounts for a higher percentage of fire deaths than it does for the overall population, that group is at a higher risk of dying in a fire. If the age group accounts for a lower percentage of fire deaths than it does for the overall population, then that group is at a lower risk of dying in a fire.

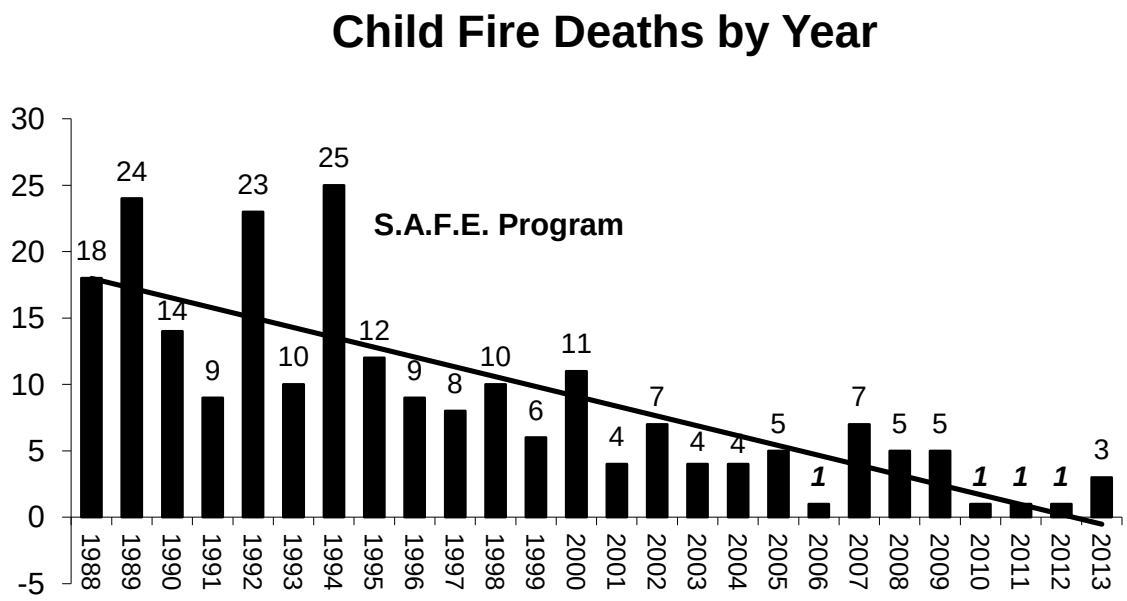
The percentages of the population in each age group were calculated using data from the 2010 Census from the U.S. Census Bureau.

Children Under 14 & Adults 35 to 44 Had the Lowest Risk of Fire Deaths
Three (3) people under the age of 18 died in a fire in 2013. No one under the age of 15 died in a fire in Massachusetts in 2013. Children under the age of five, between the ages of five and nine and also between the ages of 10 and 14 had a below average risk of dying in a fire. Each group accounted for 6% of the population and none of fire deaths in 2013. Young adults ages 15 to 24 accounted for 16% of the fire deaths and 14% of the population; adults between the ages of 25 to 34 accounted for 9% of the fire deaths and 13% of the population. Adults between the ages of 35 and 44 accounted for none of the fire fatalities and account for 14% of the population; people ages 45 to 54 accounted for 14% fatal fire victims and 15% of the Massachusetts population. Victims between the ages of 55 to 64 accounted for 18% of the fatal fire deaths and 12% of the population; and older adults between the ages of 65 and 74 accounted for 16% of the fire fatalities in Massachusetts in 2013, but only 7% of the population. Older adults between the ages of 75 and 84 had the second greatest risk of dying in a fire; they accounted for 18% of the fire deaths in 2013, and only 5% of the population, making them just over three and a half (3.6) times more likely to die in a fire, and adults over the age of 84 represent 2% of

the total population but accounted for 9% of the deaths making them four and a half times more likely to die in a fire.

Children Now at Lower Risk of Dying in Fires in the Commonwealth
Contrary to national trends, children are no longer at a disproportionate risk of dying in fires in Massachusetts. The following graph illustrates the number of child (age <18) fire fatalities in Massachusetts from 1988 through 2013. You can see a definite downward trend in the number of fire related deaths to children from a high of 25 in 1994 to a low of one in 2006, 2010, 2011 and 2012. According to United States Fire Administration statistics, children under 10 accounted for an estimated 10% of all fire-related deaths nationally in 2010.[36] In 2013, children under 10 accounted for three of the Massachusetts fire-related deaths.

Child Fire Deaths Drop 75% Since the Start of the S.A.F.E. Program
Fire deaths of children under age 18 have fallen by 75% since the start of the S.A.F.E. Program in the fall of 1995.

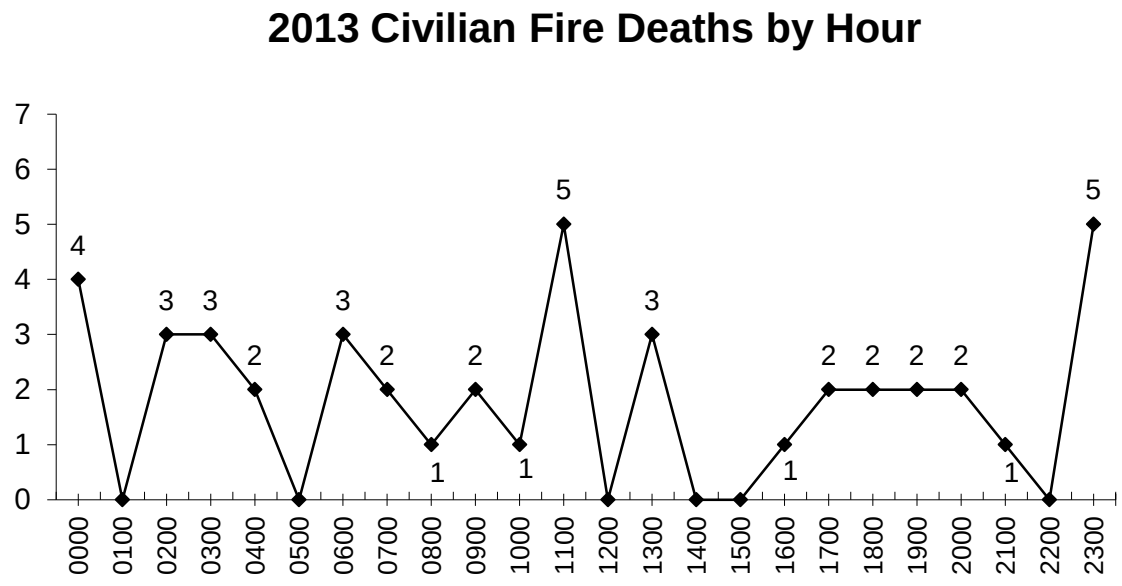


[36] Source: United States Fire Administration's **Fire Risk in 2010, Topical Fire Research Series, Vol. 14 – Issue 7 August 2013** and **Fire Risk to Children in 2010, Topical Fire Research Series, Vol. 14 – Issue 8 August 2013.** Most recent national data available.

Average Annual Child Deaths Down 71%
Since fire death numbers fluctuate quite a bit from year to year, it is helpful to look both at the trendline in the graph above and at averages over several years. During the 18 full years where the S.A.F.E. Program has been in effect, from 1996 to 2013, the average number of child fire deaths per year has been 5.1. In the 14 years prior to the S.A.F.E. Program, 1982 to 1994, the average number of child fire deaths per year was 17.6. This 71% drop in the average number of child fire deaths is significant when compared to the 44% drop in the average number of all fire deaths during the same time period.

The one thing that is happening in Massachusetts to improve fire safety exclusively for this age group, which is not happening for all other age groups, is consistent, comprehensive, statewide, school-based fire safety education.

1/2 of People Died in Fires While They Slept
Half of the people died in fires that occurred at night, when people are usually asleep. Twenty-two (22), or 50%, of the fire victims died in fires that occurred between 10:00 p.m. and 7:00 a.m. Smoke alarms are the key to notifying occupants to danger whether they are asleep or awake, but they cannot guarantee escape. Almost half (47%) of the people who died during 'daytime' fires were intimately involved in ignition, and half resulted from elderly victims who may have had limited mobility. The following graph shows the fire death frequency by time of day on the 24-hour clock. Midnight to 1:00 a.m. is represented by 0000; 1:01 a.m. to 2:00 a.m. is represented by 0100, etc.



Structure Fire Deaths

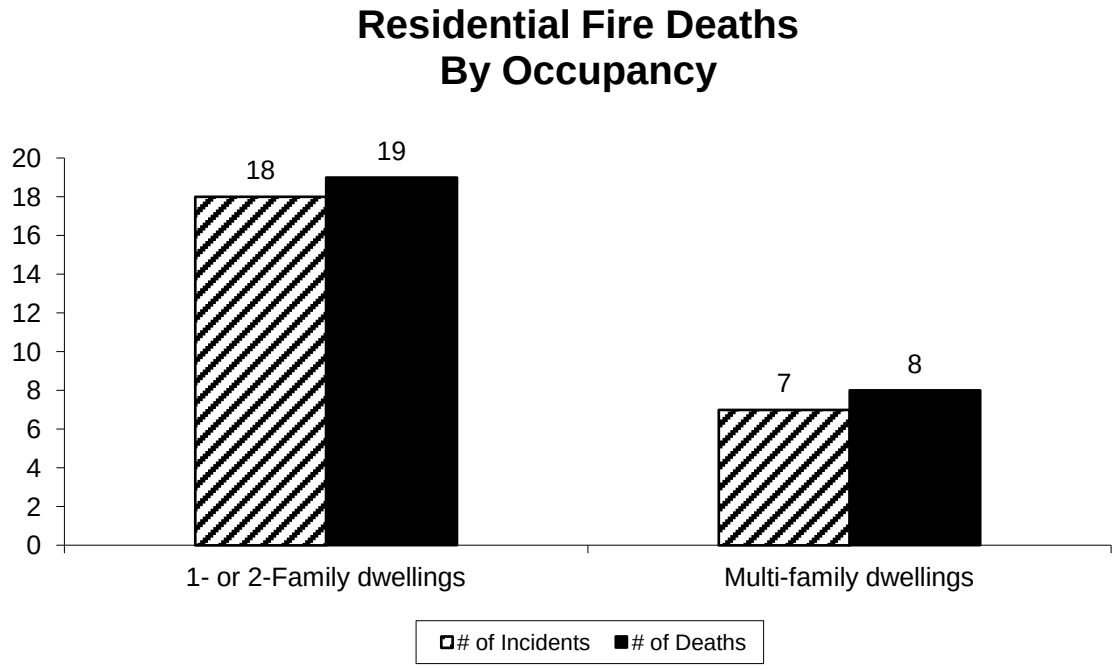
In 2013, there were 28 structure fire deaths in 26 fatal fires. All but one of the structure fire deaths occurred in residential occupancies. Two (2) people under the age of 18 died in a structure fire in Massachusetts.

- On October 9, 2013, at 11:46 a.m., the North Andover Fire Department responded to a fatal fire in a chemical processing plant. It is believed that the victim, a 51-year old male employee, either dropped a chemical container or a valve broke causing the pyroflouric chemical to come into contact with the air causing an explosion and ensuing fire. No one else was injured at this fire. Detectors were present and operated. The sprinkler system activated and effectively suppressed the fire. Damages from this fire were estimated at $1.1 million.

Residential Building Fire Deaths

Most Fire Deaths Occur in the Home
The majority of fire deaths occur in residential occupancies. We focus our analysis on these deaths because it is where prevention can yield the greatest results or have the most impact.

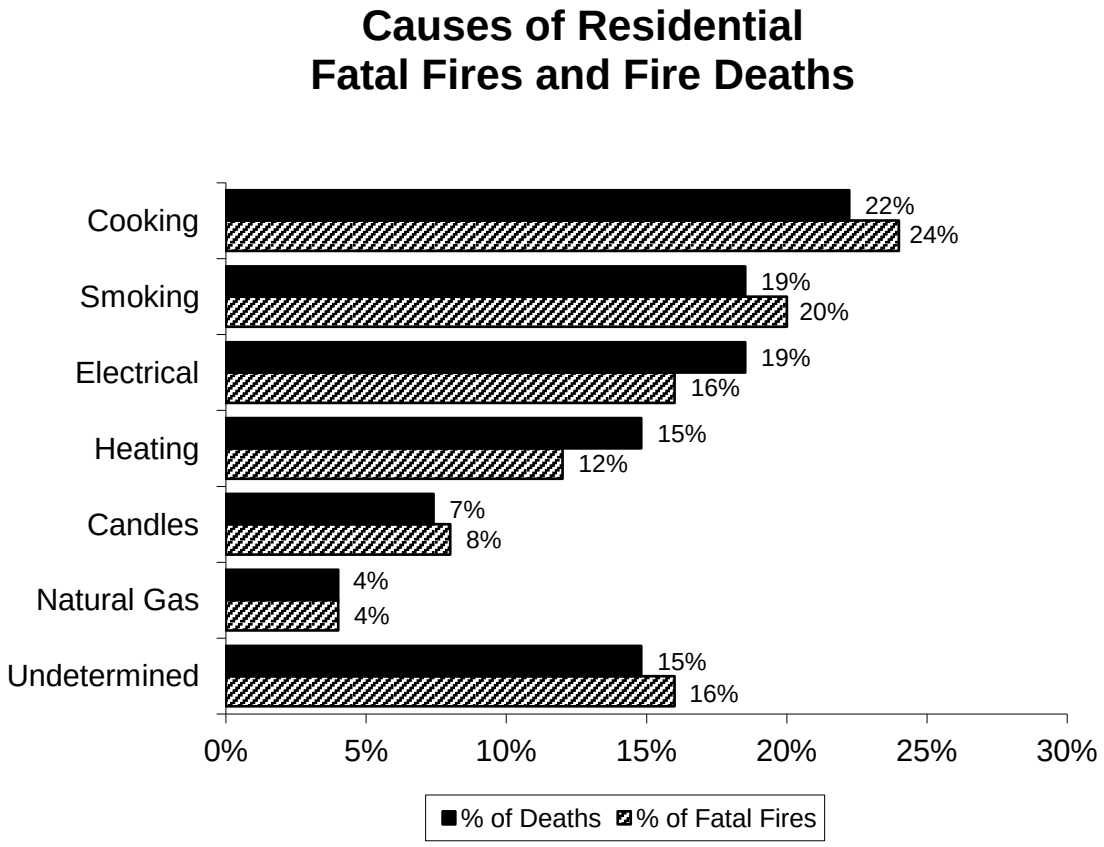
In 2013, there were 27 fire deaths in 25 fatal residential building fires. This represents 96% of the structure fire deaths and 61% of all fire deaths. Nineteen (19) fire deaths occurred in 18 fires in one- and two-family dwellings, and eight fire deaths occurred in seven apartment fires. Typically more fatal fires and associated deaths occur in one- and



two-family homes than occur in apartment fires. The graph below shows the number of fatal fire incidents and the number of civilian fatalities associated with various types of residential occupancies in 2013.

Cooking Fires Are Leading Cause of Fire Deaths
In 2013, cooking was the leading cause of residential fire deaths and fatal residential fires. These fires accounted for six, or 22%, of residential fire deaths. Careless disposal of smoking materials tied with electrical fires as the second leading cause of fire deaths, each accounting for five, or 19%, of residential fire deaths. Heating caused four deaths, or 15% of residential fire deaths. Candle fires caused two deaths, or 7%, and natural gas caused one, or 4%, of these fire deaths. Four (4), or 15%, of these deaths occurred in fires where no cause could be determined or multiple causes could not be ruled out.

For years, smoking has been far and away the leading cause of fatal fires and fire deaths in Massachusetts, with no other cause coming close except in 1999, 2005 and 2011. In 1999, cooking and smoking tied as the leading causes of fires that kill. In 2005 and 2011, electrical fires were the leading cause of residential fire deaths.



In 2012 suicide was the leading cause of fatal residential fires and fire deaths. In 2013 there was not one instance of suicide by fire in a residence.

The previous graph illustrates the number of residential building fire deaths and the number of fatal residential building fires by cause. The classifications are ranked by the percentage of fire deaths that they caused.

6 Killed in 6 Cooking Fires
Six (6) people died in six fatal residential cooking fires in 2013. Cooking fires accounted for 22% of residential fire deaths and 24% of fatal fires in residential buildings.

- On January 23, 2013, at 7:52 a.m., the Ayer Fire Department was called to a fatal cooking fire in a single-family home. The victim, a 76-year old woman, was cooking bacon on the stove when the robe she was wearing ignited. No one else was injured at this fire. Detectors were present but the fire was too small to activate them. The home was not sprinklered. Damages from this fire were not estimated.

- On August 14, 2013, at 12:26 a.m., the Springfield Fire Department was called to a fatal cooking fire in a single-family home. The victim, a 65-year old woman, was most likely sleeping at that time of night. No one else was injured at this fire. Detectors were not present and the home was not sprinklered. Damages from this fire were estimated to be $70,000.

- On August 23, 2013, at 7:20 a.m., the Gardner Fire Department was called to a fatal cooking fire in a six-unit apartment building. The fire started when the 86-year old male victim's clothes ignited when they came into contact with the electric stove while he was cooking. No one else was injured at this fire. Smoke detectors were present and they operated. The building was not sprinklered. Damages from this fire were estimated to be $36.

- On September 10, 2013, at 3:52 a.m., the Springfield Fire Department was called to a fatal cooking fire in a single-family home. The fire started in the gas stove. The victim, a 34-year old woman, was unconscious on the living room sofa. She was extricated by firefighters and transported to a local hospital where she later succumbed to her injuries. Another civilian occupant and two firefighters were injured at this fire. It was undetermined if smoke detectors were present. The building was not sprinklered. Damages from this fire were estimated to be $30,000.

- On October 15, 2013, at 11:35 a.m., the Rockland Fire Department was called to a fatal cooking fire in a single-family home. The fire started when the open flame from the gas stove ignited the 71-year old female victim's clothes. No one else was injured at this fire. Smoke detectors were present operated. The building was not sprinklered. Damages from this fire were estimated to be $5,000.

- On October 28, 2013, at 12:12 a.m., the Webster Fire Department was called to a fatal cooking fire in an eight-unit apartment building. The hot plate near the victim's upholstered chair ignited the chair. The victim, a 60-year old man, was asleep in the chair. No one else was injured at this fire. Smoke detectors were present but it was

undetermined if they operated. The building was not sprinklered. Damages from this fire were estimated to be $45,000.

5 Fatal Smoking Fires Cause 5 Deaths in Homes
In 2013, the improper use and disposal of smoking materials caused five, or 19%, of residential building fire deaths and five, or 20%, of fatal residential building fires.

3 Elderly Fire Deaths Caused by Smoking
In 2013, three of the older adult fire deaths were caused by the improper disposal of smoking materials while at home. In 2012 no one over the age of 65 died in a smoking fire. In 2010 six older adults died in smoking-related fires. In 2009, seven older adults died in smoking-related fires. In 2008, four older adults died in smoking fires and in 2007, nine older adults died in a smoking-related fire. In 2006 only one older adult died in one of these fires; in 2005 there were two of these deaths; and in 2004 there were no fire deaths to older adults caused by smoking at home.

You will note some common threads as you read the following summaries of the fatal fires caused by smoking materials, such as people falling asleep in the living room on upholstered furniture, or in bed while smoking, and with no working smoke alarms in the building.

- On January 28, 2013, at 11:31 a.m., the Haverhill Fire Department was called to a fatal smoking fire in a six-unit apartment building. The victim, a 45-year old woman, was smoking inside a bedroom closet. Items in the closet ignited. Detectors were present but they failed to operate because of a power shut-off. Sprinklers were not present. Damages were estimated to be $20,000.

- On February 18, 2013, at 9:54 p.m., the Peabody Fire Department was called to a fatal smoking fire in a single-family home. The 79-year old female victim was found on the kitchen floor with burns to over 80% of her body surface area. Her clothes ignited as she was trying to light her cigarette. There were no other injuries at this fire. The fire was confined to the victim. It was undetermined if detectors were present. There were no sprinklers. Damages from this fire were not estimated.

- On April 26, 2013, at 11:49 p.m., the Newton Fire Department was called to a fatal smoking fire in a two-family home. The 59-year old physically disabled female victim fell asleep and her cigarette started the fire. There were no other injuries at this fire. Detectors were present and alerted the other occupants of the building. There were no sprinklers. Damages from this fire were estimated to be $180,000.

- On April 28, 2013, at 6:36 a.m., the Boston Fire Department was called to a fatal smoking fire in a two-family home. The 22-year old female victim was a college student at Boston University living in off-campus housing. Approximately 20 people were living in the home. The victim was living in an attic apartment. She was trapped above the fire and her exits were blocked by the flames. Abandoned smoking materials started the fire in an interior stairway. There were eight other civilian

injuries and seven firefighter injuries at this fire. Heat detectors were present and alerted the occupants. There were no sprinklers. Damages from this fire were estimated to be $610,000.

Smoking on Oxygen
Using home oxygen increases the risk of fires and burns. When more oxygen is in the air, fires will burn hotter and faster. In 2013, the use of oxygen while smoking contributed to one of the five smoking-related fire deaths in three of the nine smoking-related fatal fires.

- On February 25, 2013, at 1:38 p.m., the Westfield Fire Department was dispatched to a smoking fire in a 107-unit apartment building. The victim, a 74-year old woman, was smoking while on home oxygen. The fire began in her bedroom. Three (3) other occupants of the building and one firefighter were injured at this fire. Detectors were present and alerted the other occupants of the building. The building was sprinklered but the fire was not in an area protected by them. Damages from this fire were estimated at $50,000.

4 Fatal Electrical Fires Cause 5 Deaths
Five (5) people died in four residential electrical fires in 2013. Electrical fires accounted for 19% of residential fire deaths and 16% of fatal residential fires.

- On January 5, 2013, at 11:08 p.m., the Chelmsford Fire Department was called to a fatal electrical fire in a 24-unit apartment building. The fire was started by an extension cord in a third floor apartment. The victims, a 77-year old man, and his 67-year old wife were both overcome by the heat and smoke while they attempted to escape. Four (4) other civilians and one firefighter were injured at this fire. Detectors were present and alerted the occupants of the building. There were no sprinklers. The fire caused an estimated $3.5 million worth of damage.

- On January 24, 2013, at 10:21 a.m., the Barre Fire Department was called to a fatal electrical fire in a two-family home. A kitchen light fixture was not properly wired in place which led to resistive heating over time that eventually ignited nearby combustible materials. The victim, an 89-year old woman, was overcome by smoke inhalation as she attempted to escape the fire. No one else was injured at this fire. Detectors were not present. There were no sprinklers in the home. The fire caused an estimated $195,000 worth of damage.

- On April 9, 2013, at 10:38 p.m., the Gloucester Fire Department was called to a fatal electrical fire in a two-family home. The fire began in a bedroom. Someone put paper over the lampshade to dim the light. The heat from the light bulb ignited the paper and started the fire. The victim, a 15-year old girl, was not able to escape and was overcome by the heat and smoke of the fire. She was transported to a local hospital where she succumbed to her injuries. One (1) other civilian was injured at this fire. Detectors were present and alerted the occupants. There were no sprinklers. The fire caused an estimated $130,000 worth of damage.

- On November 13, 2013, at 7:26 p.m., the Shrewsbury Fire Department was called to a fatal electrical fire at a single-family home. The fire was caused by arcing in an electrical extension cord. The victim, an 82-year old man, was overcome by the smoke. No one else was injured at this fire. It was undetermined if there were detectors in the home. Sprinklers were not present. Damages were estimated to be $288,300.

3 Fatal Heating Fires Caused 4 Deaths
Three (3) fatal heating fires, or 12% of fatal residential building fires, caused four, or 15%, of the residential building fire deaths in 2013.

- On January 4, 2013, at 6:57 p.m., the Winchendon Fire Department responded to a fatal heating fire at a single-family home. The fire began when the wood stove ignited an interior wall covering. The victim was a 70-year old man. No one else was injured at this fire. Detectors were present and they operated. The building was not sprinklered. Damages from this fire were estimated to be $146,300.

- On January 5, 2013, at 4:29 a.m., the Holyoke Fire Department responded to a fatal heating fire at a single-family home. The cause of the fire was the ignition of combustible materials too close to the wood stove. The victim, a 15-year old girl, was asleep at the time of the fire and was overcome by the heat and smoke. Her mother and one firefighter were also injured at this fire. It was undetermined if detectors were present, and the building was not sprinklered. Damages from this fire were estimated to be $223,500.

- On April 3, 2013, at 11:30 p.m., the Whately Fire Department responded to a fatal heating fire at a single-family home. The fire started underneath the floor of an old prefabricated fireplace where, over time, the fireproof brick had cracked and the metal fireplace rusted and decayed. This allowed the heat and possibly sparks from the woodstove and fireplace to come into contact with structural members. One of the victims was a 94-year old woman who was asleep at the time of the fire and was overcome by the heat and smoke. The other victim was her 64-year old daughter who was overcome attempting to rescue her mother. They were both transported to a local hospital where they succumbed to their injuries. No one else was injured at this fire. Detectors were present, and they alerted the occupants. The building did not have any sprinklers. Damages from this fire were not estimated.

2 Fatal Candle Fires Caused 2 Deaths
Two (2) fatal candle fires, or 8% of fatal residential building fires, caused two, or 7%, of the residential building fire deaths in 2013.

- On February 22, 2013, at 1:30 p.m., the Boston Fire Department was dispatched to an EMS call for a severely burned victim in a single-family home. Upon arrival they found an 18-year old woman with severe burns to her body. The victim's clothes ignited when she got too close to a candle. Her father heard her screams and extinguished the flames with his bare hands and a coat to smother them. Nothing else

in the home ignited. She was transported to a local hospital where she succumbed to her injuries. The victim's father was also injured at this fire. It was undetermined if detectors and sprinklers were present. Damages from this fire were not estimated.

- On November 29, 2013, at 3:58 a.m., the Plymouth Fire Department was called to a fatal candle fire in an 85-unit apartment building. The candle ignited the plastic appliance housing it was situated upon. The victim, a 79-year old woman, was asleep at the time of the fire and overcome by the smoke generated by the fire. No one else was injured at this fire. Detectors were present and alerted the other occupants. The building was not sprinklered. Damages from the blaze were estimated to be $950,000.

Natural Gas Explosion Caused 1 Fatal Fire & 1 Death
A natural gas explosion and ensuing fire caused, one, or 4%, of fatal residential building fires, and one, or 4%, of the residential building fire deaths in 2013.

- On February 9, 2013, at 7:11 p.m., the Attleboro Fire Department was called to a fatal natural gas explosion with ensuing fire in a single-family mobile home. The victim, an 80-year old man, overexerted himself while escaping and collapsed in the street upon exiting the trailer. Suffering from cardiac arrest, he was transported to a local hospital where he succumbed to his injuries. One (1) firefighter was also injured at this fire. It was undetermined if smoke detectors were present and the building was not sprinklered. Damages from this fire were estimated to be $105,000.

4 Fatal Fires of Undetermined Cause
Four (4) fatal residential building fires that took the lives of four Massachusetts residents in 2013 remain undetermined. These represent 16% of the fatal residential fires, and 15% of the residential fire deaths in 2013. The cause of over one-third of all residential fire deaths could not be definitely determined after investigation. According to the National Fire Protection Association (NFPA) standard 921, Chapter 16.2.4, whenever the cause of a fire cannot be proven, the proper classification is "undetermined." NFPA 921, Chapter 16.2.5 advises that, "Undetermined is also acceptable when multiple fire causes or ignition factors cannot be eliminated, leaving the investigator with most probable causes."

- On January 21, 2013, at 2:23 a.m., the Amherst Fire Department was dispatched to a fire in a 10-unit apartment building of undetermined cause. The fire began in a second floor bedroom. The victim, a 21-year old man, was a college student living in off-campus housing. He was found in an upstairs bathroom. There were no other civilian injuries associated with this fire; but 15 firefighters were injured. Smoke detectors were present and alerted the occupants of the building. The building was not sprinklered. Damages from this fire were estimated to be $800,000.

- On January 26, 2013, at 11:02 p.m., the Gloucester Fire Department was called to a fatal fire in a single-family home of undetermined cause. The fire originated in the first floor living room where the victim, a 55-year old woman, was found overcome by the heat and smoke. No one else was injured at this fire. It was undetermined if

detectors were present and operated but the building was not sprinklered. Damages from the blaze were estimated to be $240,000.

- On May 5, 2013, at 3:32 a.m., the Salem Fire Department was dispatched to a fire in a two-family home of undetermined cause. The most likely causes were either a candle or careless disposal of smoking materials but neither one could be ruled out. The victim, a 54-year old man, was sleeping at the time but was overcome by the heat and smoke as he attempted to escape. There were no other injuries associated with this fire. Detectors were present but failed to operate due to dead batteries. The building was not sprinklered. Damages from this fire were estimated to be $30,000.

- On Christmas morning, December 25, 2013, at 12:38 a.m., the Brimfield Fire Department was called to a fatal fire in a single-family home of undetermined cause. The victim, a 63-year old man, was overcome by the heat and smoke. No one else was injured at this fire. It was undetermined if detectors were present and the building was not sprinklered. Damages from the blaze were estimated to be $190,000.

Bedroom or Living Room is the Area of Origin for 1/3 of Fire Victims
Given that most fatal fires occur at night, and that many people fall asleep in their living rooms, it is not surprising that one-third were killed in fires that started in the bedroom or living room. Nine (9), or 33%, of residential fire victims died in a fire originating in the bedroom or living room. Six (6) victims, or 22%, died in fires that began in the bedroom, and three, or 11%, succumbed to fires that originated in the living room. Seven (7) victims, or 26%, died when the area of origin was the kitchen. Three (3), or 11%, of the deaths occurred in fires that began on the exterior of the building. Unclassified function rooms and unclassified storage areas were each the area of origin of the fire for two, or 7%, of the residential fire deaths in 2013. A hallway, an interior stairway and a concealed wall space were each the area of origin of the fire for one, or 4%, of the residential fire deaths in 2013. One (1) victim, or 4%, died where there were multiple areas of origin. Six (6) victims, or 21%, died in fires where the area or origin was undetermined.

Over 1/3 of Deaths Involved Operating Equipment as a Heat Source
Of the 27 residential building fire deaths, 37% were classified as heat from operating equipment; 22% from radiated or conducted heat from operating equipment, 7% from undetermined operating equipment, 4% from arcing, and 4% from sparks, embers or flames from operating equipment. Fifteen percent (15%) involved smoking materials; 11% from cigarettes and 4% from undetermined smoking materials. Matches and heat or spark from friction each caused 7%. A lighter and an unclassified hot or smoldering object were each the heat source in 4% of these deaths. The *Heat Source* was undetermined or unclassified in seven deaths, or 26%, of the residential building fire deaths in 2013.

Clothing Was the Leading Item 1st Ignited in Residential Fire Deaths
Of the 27 residential building fire deaths, wearing apparel on a person was the item first ignited in 19% of these deaths. Cooking materials, unclassified soft goods or wearing apparel and structural member or framing were each the item first ignited in 7% of

residential fire deaths. An appliance housing or casing, bedding, natural gas, unclassified utensils, an interior wall covering, a magazine or newspaper, and an upholstered chair or sofa were each the item first ignited in 4% of these fire deaths. The item first ignited was undetermined or unclassified in nine, or 33%, of the residential building fire deaths in 2013.

The National Association of State Fire Marshals (NASFM) has supported mandatory national fire safety standards for mattresses and upholstered furniture. NASFM and CPSC have recommended the adoption of 16 CFR 1634 – Standard for the Flammability of Residential Upholstered Furniture (Proposed Rule). This is based on the revised California standard (California Technical Bulletins 116 & 117) for upholstered furniture that addresses both small open flame (match, lighter, candle) and cigarette ignitions These standards make the average piece of furniture less likely to ignite rapidly, and if ignited, less likely to burn quickly or sustain burning[37]. The CPSC has adopted 16 CFR 1632 – Standard for the Flammability of Mattresses and Mattress Pads, and 16 CFR 1633 – Standard for the Flammability (Open Flame) of Mattress Sets.

Although many buildings and building materials help contain fires, the problem is that all of the contents we have inside our homes are more flammable than ever and create ever increasing levels of toxic gases when they burn.

Detectors Operated for 45% of Residential Fire Victims

Of the 27 people who died in residential building fires in 2013, the smoke detector performance was reported for 17 of the victims. Victims were not alerted by smoke detectors in three fires that killed four people, or 15% of the victims. No detectors were present at all in one fire that was responsible for two, or 7%, of the deaths. In two deaths, or 7%, there were detectors present but they failed to operate.

Twelve (12) people died in 10 separate residential fires with detectors that did operate, accounting for 44% of fatal fire victims. It is important to remember that detectors provide an early warning of a fire. They do not guarantee an escape if exits are blocked or an individual's clothing ignites. A fire that appears small when discovered can quickly grow beyond an individual's ability to control or escape it.

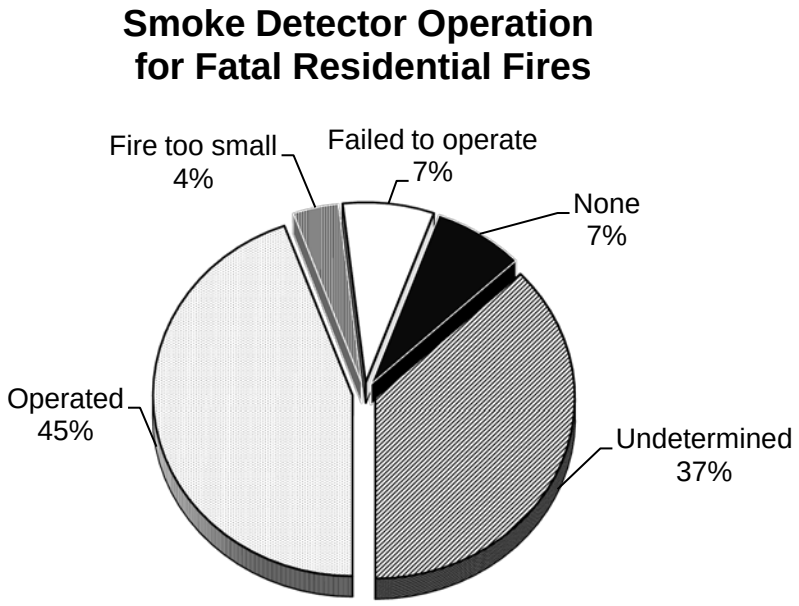
There was one fatal fire where the fire was too small to activate the detector. That accounted for one death, or 4% of the residential fire deaths in 2013.

[37] There has been some debate about the use of certain types of flame retardant used to make products conform to these standards. The issue is about using polybrominated diphenyl ethers (PBDEs) that have caused health concerns in animals in lab tests. According to the U.S. Environmental Protection Agency (EPA) production of these chemicals ceased in 2004 and their use will end when existing stocks are exhausted. The National Association of State Fire Marshals (NASFM) is working with health and environment toxicologists, the EPA and the U.S. Consumer Product Safety Commission (CPSC) in assuring that there are many other fire retardant chemicals that can be used with confidence on upholstered furniture.

In 2013, four of the 12 fatal residential fire victims whose smoke detectors operated were in the area of origin. Three (3) of these victims were intimately involved with ignition; two were cooking and one was smoking while using home oxygen.

Three (3) other victims were not in the area of origin and not involved in the ignition of the fires. One (1) victim was not in the area of origin but was involved in ignition; and it was not reported where another of the victims was at the time the incident began. While smoke detectors cannot by themselves save a person who is directly involved in the ignition, they can alert other occupants to the danger and give them precious time to escape to safety.

Detector performance was undetermined in 10 residential building fires that killed 10 people, accounting for 37% of the residential building fire deaths in 2013. In one of these, fires detectors were present but it was undetermined if they operated. The pie chart shows the smoke detector status as a percentage of the civilian residential building fire deaths in 2013.



No Working Smoke Detectors in 16% of Fire Deaths in 1 & 2-Family Homes
In 2013, you were more likely to die in a fire in a one- and two-family home than in any other residence and one without a working smoke alarm. There were 138% more fire deaths in one- and two-family homes than all other residential occupancies combined. Nineteen (19) people died in 18 one- and two-family dwelling fires in 2013. Three (3), or 16%, of the fire deaths in one- and two-family homes occurred in fires with no detectors at all or with detectors that failed to operate. Of these three deaths, one occurred in a home where smoke detectors failed to work while the other two deaths were in homes where there were no smoke detectors present. Six (6) deaths, or 32%, occurred in homes where the smoke detectors operated, and one death, or 5% happened when the fire was

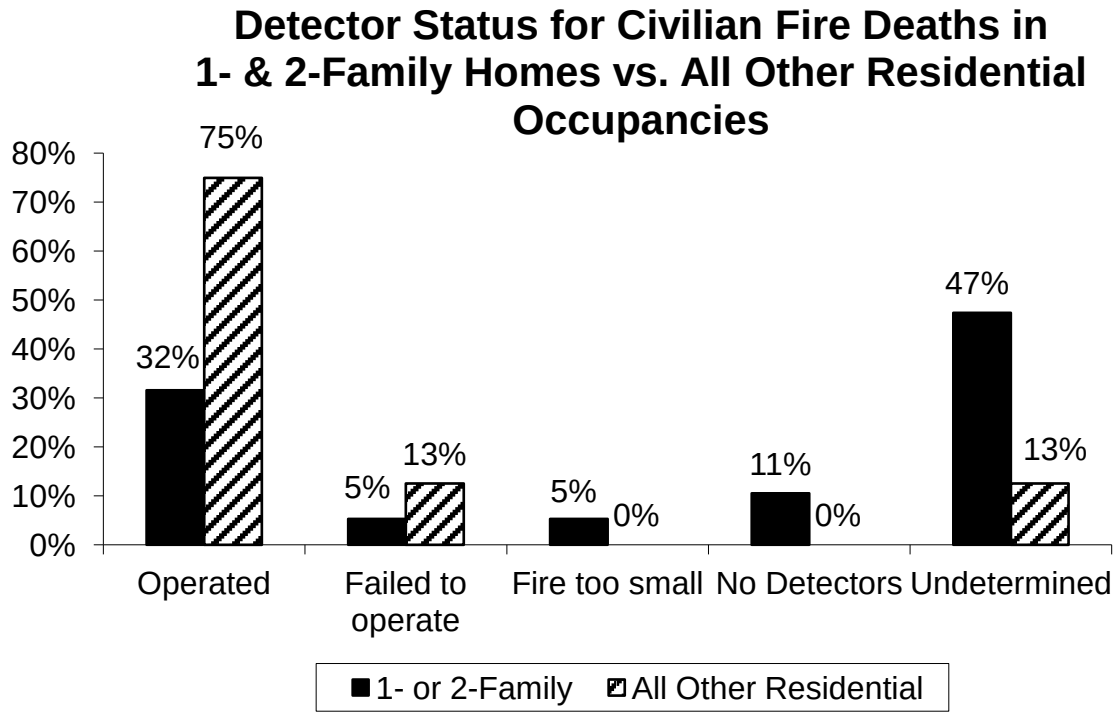
too small to activate the detector. Nine (9) deaths, or 47%, occurred in four fires where smoke detector performance was undetermined.

Eight (8) of the 15 senior residential fire deaths had working smoke alarms. Because of their age older adults may have mobility and hearing impairments making escape from a fire more difficult. Earlier warning and/or residential sprinklers may have allowed them to escape or survive the fire until firefighters arrived.

2 Detectors Failed
Of the two residential fire deaths where smoke detectors were present but failed to operate, one failed to operate because of dead batteries and the other failed because of a power failure, shut-off or disconnect.

Other Residential Occupancies More Likely to be Protected by Smoke Detectors
Eight (8) people died in seven apartment fires in 2013. The detector performance was known for seven of the victims. Six (6) people died in fires where smoke detectors were present and working. One person was killed in a fire where the detector failed to operate because of a power failure, shut-off or disconnect. Detectors were present but the performance was unknown in one fire that killed one person.

The following graph illustrates the detector status and the percentage of deaths between 1- and 2-family homes and all other residential occupancies.



Sleeping Led Human Factors Contributing to Injury[38]
Of the 27 fatal residential building fire victims, a *Human Factor Contributing to Injury* was reported to MFIRS for nine. Seven percent (7%) of the victims were asleep; another 7% were bedridden or had another physical handicap; 4% were unconscious; 4% were possibly impaired by another drug or chemical; and 4% were possibly mentally disabled. Twenty-one (21), or 78%, of the 27 civilian fire deaths did not report a human factor contributing to injury.

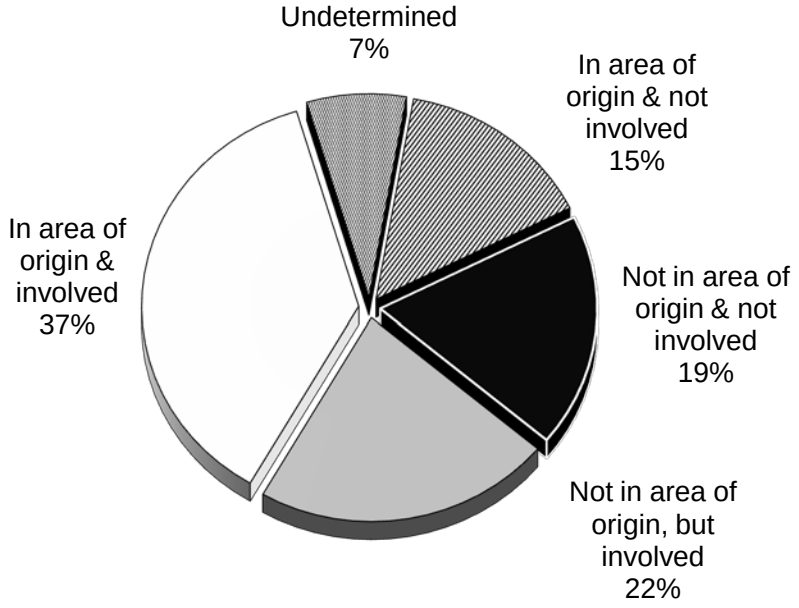
22% of Victims Were Escaping When They Were Overcome
Six (6), or 22%, of the 27 fatal fire victims were trying to escape when they were fatally injured. Fifteen percent (15%) were asleep when they incurred their fatal injuries. Being unable to act was the activity for 7% of the victims. A rescue attempt, fire control and a return to the vicinity of the fire before it was under control were each the activity at the time of death for 4% of these victims. Activity at time of death was undetermined or not reported for 12, or 44%, victims of fatal residential fires in 2013. Working smoke detectors combined with a home escape plan are essential to escape a fire.

All But 1 of the Victims Suffered Burns, Smoke Inhalation or Both
Burns or smoke inhalation was the primary apparent symptom for 26, or 96%, of the victims where the primary apparent symptom of their injury was known; seven, or 26%, suffered from smoke inhalation only; 15, or 56%, suffered burns and smoke inhalation; and four victims, or 15%, died from the burns incurred in the fire. Cardiac arrest was the primary apparent symptom for one, or 4%, of these victims. There were no deaths where the primary apparent symptom was undetermined or not reported.

Over 1/2 of All Fatalities Were Somehow Involved in Ignition
Fourteen (14), or 52%, of the residential fatal fire victims were in the area of origin of the fire. Ten (10), or 37%, of these victims were intimately involved with the ignition of the fire that killed them, and four, or 15%, were not involved in its ignition. Six (6), or 22%, of these victims were not in the area of origin but were somehow involved in starting these fires; such as a person who is smoking and exits the room, leaving the cigarette behind unattended, or a person who forgets that they started cooking on the stove. Five (5), or 19%, of the victims were not in the area of origin and not involved with the ignition of the fire that claimed their lives. The *Location at Time of Incident* was unknown for two, or 7%, of the residential fatal fire victims.

[38] 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.

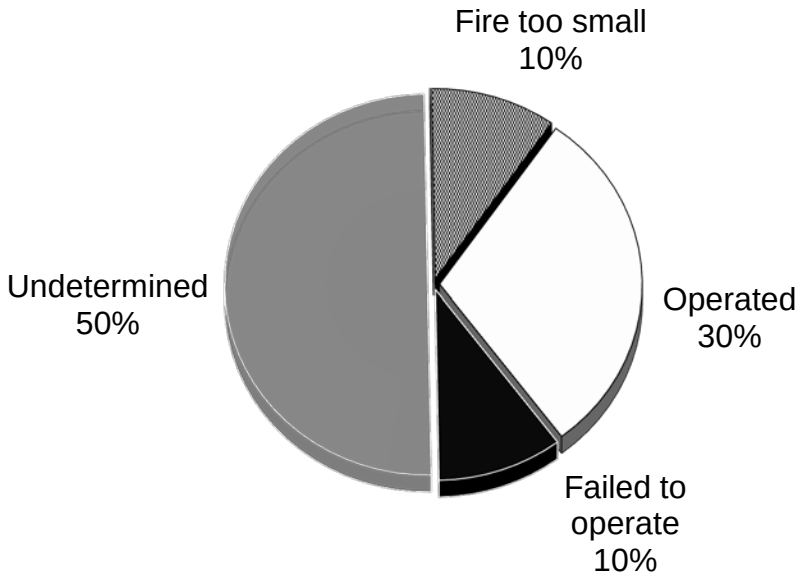
Civilian Fatalities
Location at Time of Incident



30% of Detectors Operated When the Victim Was Intimately Involved in Ignition
There were 10 victims that were reportedly in the area of origin and they were involved with the ignition of the fire that killed them. It is most probable that no amount of early warning would have saved any of these victims. This is where fire prevention and education become key components in saving lives. Three (3), or 30%, of these 10 victims, actually had a working smoke detector in their home at the time of the fire. One (1) fire death, or 10%, did not have any smoke detectors; and in another fire death, or 10%, the fire was too small to activate the detector. It was undetermined for the other five, or 50%, of the victims that were intimately involved with ignition, whether their homes had operating smoke detectors.

In the case of three of these victims where the detectors operated and involved with the ignition, two of the victims had their clothing ignite while they were cooking and the third victim was smoking while using home oxygen. All three were older adults.

Detector Perfomance of Fire Deaths When Victim was Intimately Involved with Ignition



Fatal Motor Vehicle Fires

In 2013, eight motor vehicle fires killed 10 civilians. Motor vehicle fire deaths are determined subsequent to the autopsy of the victim. When smoke is found in the lungs of the victim, it is an indication the victim survived the impact of the collision and was killed by the fire and not the crash. Four of these fires and five accompanying deaths involved motor vehicle crashes. One (1) of these fires and two deaths involved an airplane crash, another one involved a victim living in a vehicle and the other two involved suicides.

4 Motor Vehicle Crashes Kill 5 Occupants
Four (4) motor vehicle fires and the subsequent 5 deaths were caused by motor vehicle crashes. These incidents accounted for 11% of the fatal fires and 10% of the fire fatalities in the Commonwealth in 2013.

- On July 7, 2013 at 2:58 a.m., the Greenfield Fire Department was dispatched to Interstate 91 for a tractor trailer on fire. The truck was off the road approximately 100 feet into the woods. Both victims were trapped inside the vehicle. The victims were a 33-year old man and a 45 year old woman.

- On October 8, 2013, at 5:34 p.m., the Montague Center Fire Department was called to a fatal motor vehicle crash with ensuing fire. The driver and only victim was a 70-year old man.

- On November 8, 2013, at 2:07 a.m., the New Bedford Fire Department was called to a fatal two car motor vehicle crash with ensuing fire on Route 140. The driver and a 23-year old man was trapped in one of the vehicles and succumbed to the fire. A passenger was injured but able to get out of the vehicle before the fire.

- On November 10, 2013, at 5:46 p.m., the Longmeadow Fire Department was called to a fatal motor vehicle crash with ensuing fire on Interstate 91. It is believed that the driver, a 17-year old man, swerved to avoid hitting some debris in the road and then hit a tractor trailer. The victim's car ignited and he was able to escape the car but was did so while his clothes were on fire. He died at the scene.

1 Airplane Crash Kills 2 Occupants
One (1) motor vehicle fire and the subsequent two deaths were caused by an airplane crash. This incident accounted for 3% of the fatal fires and 5% of the fire fatalities in the Commonwealth in 2013.

- On August 25, 2013 at 6:24 a.m., the Taunton Fire Department was called to a fatal airplane crash with ensuing fire. The single-engine plane, a 1946 Aeronca 7AC two-seater, crashed while taking off from Taunton Municipal Airport. The pilot, a 69-year old man and his passenger, a 61-year old man were entangled in the wreckage and died in the ensuing fire. Damages from this fire were not estimated.

1 MV Fire Kills Person Living in It
One (1) motor vehicle fire and the subsequent death was caused by a propane stove that the occupant was using while he lived in the vehicle. This incident accounted for 3% of the fatal fires and 2% of the fire fatalities in the Commonwealth in 2013.

- On February 8, 2013, at 8:54 a.m., the Granville Fire Department was called to a fatal motor vehicle fire behind a motor vehicle repair shop. The victim, a 61-year old homeless man, was squatting in the old van. He was using a propane stove as a heater and it ignited some of the bedding. Another homeless person, a 52-year old woman, who was also living in the van, was severely burned while escaping from the burning van.

2 Suicides Kill 2 Occupants
Two (2) motor vehicle fires and the subsequent two deaths were suicide by fire. These incidents accounted for 5% of the fatal fires and 5% of the fire fatalities in the Commonwealth in 2013.

- On June 22, 2013, at 11:28 a.m., the Lunenburg Fire Department was dispatched to a motor vehicle fire at a local gravel pit. The driver and only occupant of the vehicle

had poured gasoline inside his car and then ignited it. The victim was a 49-year old man. No one else was injured in this fire.

- On October 22, 2013, at 2:12 a.m., the Springfield Fire Department was dispatched to a fatal motor vehicle fire in a parking lot. The victim, an 83-year old man, parked his car and ignited it. No one else was injured at this fire.

Other Fatal Fires

In 2013, six outside fire incidents killed six civilians. These incidents accounted for 15% of the fatal fires and 14% of the fire fatalities in Massachusetts in 2013.

2 Outside Suicide Fires Kill 2 Massachusetts Residents

- On February 2, 2013, at 8:19 p.m., the Boston Fire Department was called to a fatal outside fire in a backyard. The victim, a 34-year old man, poured gasoline on himself and lit his clothing on fire in a suicide attempt. He was transported to a local hospital where he later succumbed to his injuries. No one else was injured in this fire.

- On July 25, 2013, at 9:07 p.m., the Boston Fire Department was called to a fatal outside fire in a backyard. The victim, a 58-year old man, lit his clothing on fire in a suicide attempt. He was transported to a local hospital where he later succumbed to his injuries. No one else was injured in this fire.

1 Outside Electrical Fire Kills 1 Massachusetts Resident

- On August 20, 2013, at 9:15 a.m., the Holliston Fire Department was called to a fatal electrical fire on a utility pole. The victim, a 26-year old man, was cutting tree limbs in a bucket truck when his extension saw cut through a power line. The arcing caused the bucket to ignite. The victim was brought down to street level where the fire was extinguished and he was transported to a local hospital via helicopter where he succumbed to his injuries.

1 Outside Fire Pit Fire Kills 1 Massachusetts Resident

- On October 29, 2013, at 4:58 p.m., the Weymouth Fire Department was called to a fatal outside fire in a backyard. The victim, a 58-year old man, was using his fire pit. It is believed that his clothing ignited when he was too close to the fire pit. His body was discovered after the fire was extinguished.

1 Outside Trash Fire Kills 1 Massachusetts Resident

- On November 4, 2013, at 1:33 p.m., the Charlton Fire Department was called to a fatal outside fire in a backyard. The victim, a 91-year old man, was burning trash in a 55 gallon drum when he got too close to the fire and his clothing ignited. His body was discovered while firefighters extinguished the fire.

1 Undetermined Brush Fire Kills 1 Massachusetts Resident

- On March 30, 2013, at 6:06 p.m., the Boston Fire Department was called to a brush fire adjacent to the Fenway. When the fire was knocked down, a civilian reported seeing the victim, a 50-year old man, floundering in the river. He was rescued by firefighters and transported to a local hospital with burns over 50% of his body surface area. He later succumbed to his injuries.

Multiple Fire Deaths

For statistical purposes, a fire is considered a multiple death fire if it kills three or more people. In 2013, there were no multiple death fires in Massachusetts.

Civilian Fire Deaths - Conclusion

44 Civilians Died in Massachusetts Fires – 13% Increase

In 2013, there were 40 fatal fires in Massachusetts with 44 accompanying fatalities. This is a 13% increase from the 39 deaths reported in 2012. Of these 44 deaths, 27 occurred in residential fires.

Majority of Fire Deaths Occur in Residential Occupancies

We focus our analysis on residential fire deaths because it is where prevention can have the most impact. Twenty-seven (27) of the 28 fatal structure fire victims died in residential building fires. Nineteen (19) of these deaths occurred in one- or two-family homes, accounting for 43% of all fire deaths.

Cooking Fires Are Leading Cause of Fire Deaths

For the third time in as many years and since records have been kept, and continuing a trend started in 2011, smoking was not the leading cause of residential fire deaths and fatal residential building fires. In 2013, cooking fires were the leading cause of residential fire deaths and fatal residential fires. These fires accounted for six, or 22%, of residential fire deaths. The careless disposal of smoking materials tied with the electrical fires as the second leading cause of fire deaths each, accounting for five, or 19%, of residential fire deaths.

In 2013, heating fires accounted for four, or 15%, of these deaths, candles caused two, or 7% of residential fire deaths, and natural gas explosion caused one, or 4%, of the residential fire deaths.

3 People Under 18 Died in a Fire
Three (3) people under the age of 18 died in a fire in Massachusetts in 2013. Two (2) 15-year olds died in residential fires and a 17-year old died in a motor vehicle crash with ensuing fire.

Older Adults at Significant Risk for Fire Death
Older adults, especially those over the ages of 75 had a significant risk of dying in a fire. The risk of fire death for adults over the age of 85 is 4.5 and those adults between the ages of 75 and 84 is 3.6. This means that they were four and a half times and over three and a half times as likely to become a fire-related fatality.

43% of All Fire Deaths are Older Adults
Nineteen (19) older adults died in fires, accounting for 43% of all fire deaths in Massachusetts in 2013. Three (3) of these victims died in smoking fires. Historically, the lack of working smoke detectors is a significant factor in senior fire deaths. However in 2013, eight of the 15 senior residential fire deaths had working smoke alarms, two of the deaths occurred in fires with no detectors at all, one death happened at a fire where the fire was too small to activate the detector, and in the other four deaths it was undetermined if detectors were present.

1/2 of People Died in Fires While They Slept
Half of the people who died in fires died while they slept. Twenty-two (22), or 50%, of the fire victims died in fires that occurred between 10:00 p.m. and 7:00 a.m.

45% of Fatalities Had Working Smoke Detectors
Forty-five percent (45%) of the residential fire victims had a working smoke detector. Many of these victims were older adults so they have a need for more warning or possibly residential sprinklers to help them survive the fire. Thirty-three percent (33%) of the victims died in fires that began in either the bedroom or living room. Clothing a person was wearing was the leading item first ignited. Also, all but one victim, or 96%, suffered burns, smoke inhalation or both.

Over 1/2 of Fatalities Were in the Area of Origin
Fourteen (14), or 52%, of all the civilians that died in residential fires were reported to be in the area of fire origin. Ten (10) victims were intimately involved in the ignition of the fire that killed them. It is most probable that no amount of early warning would have saved any of these victims. This is where fire prevention and education become key components in saving lives.

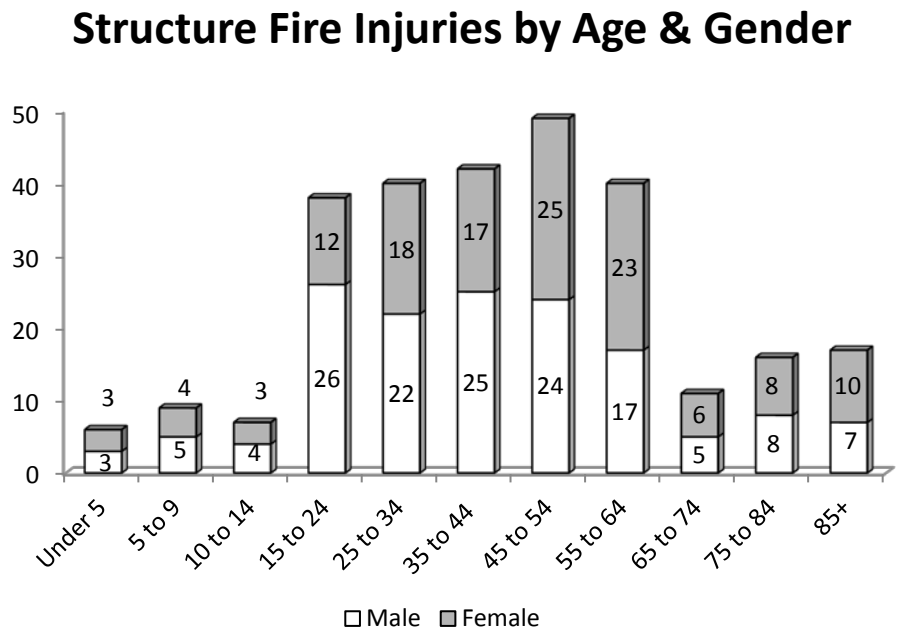
4 Suicides – Bucks Recent Tragic Trend
In past years there were a tragic number of people who used fire to take their own lives. In 2013, there were four confirmed suicides. All four were by self-immolation, two in motor vehicles and two outside. In 2012 there were 12 self-immolations. In 2011 there were four self-immolations and in 2010 there were five self-immolations. In 2009 there were six self-immolations, in 2008 there were three self-immolations, five in 2007, two in 2006, and four in 2005. In 2004, there were eight suicides by self-immolation.

Civilian Injuries

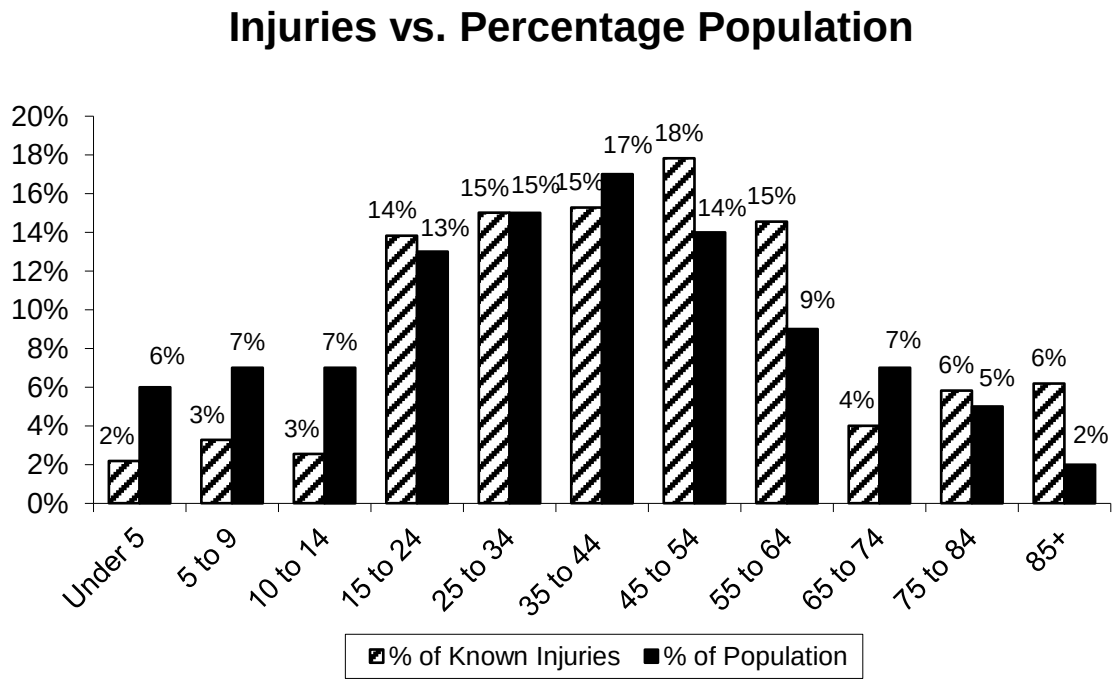
323 Civilians Injured in Fires in 2013 – Mostly at Home
Massachusetts' fires injured 323 civilians in 2013. Two hundred and seventy-five (275), or 85%, of civilian injuries occurred in structure fires. Two hundred and fifty-three (253) injuries occurred in residential building fires, accounting for 78% of all injuries and 92% of all structure fire injuries. Twenty-four (24), or 7%, occurred in motor vehicle fires. Twenty-four (24), or 7%, of civilian injuries occurred in outside and other fires. Special outside fires accounted for two, or 1%, of all civilian injuries. Brush fires accounted for two, or 1%, of civilian fire injuries; and outside rubbish fires accounted for one, or less than 1% of all civilian fire injuries. Nineteen (19), or 6%, of civilian injuries were caused by unclassified fires.

Structure Fire Injuries

Of the 275 civilian injuries resulting from structure fires where gender was reported, 146, or 53%, were men and 129, or 47%, were women. Overall, 28 children under 18 years of age, 203 adults aged 18 to 64 years old, and 44 older adults over the age of 65, were injured in structure fires in 2013. The following chart illustrates the structure fire injuries by age and gender in 2013. Men and women ages 35-44 and 45-54 were injured the most and youths under five were injured the least in 2013. Six (6) children ages 0-4 were injured; nine children ages 5-9; seven children ages 10-14; 38 people ages 15-24; 40 people ages 25-34; 42 people ages 35-44; 49 people ages 40-54; 40 people ages 55-64; 11 people ages 65-74; 16 people ages 75-84; and 17 people were injured that were over 85 years of age, seven were men and 10 were women.



The following graph shows the percentage of injuries by age group and the percent of the population that age group represents in Massachusetts. When the percentage of injuries is greater than the percentage of population, that group is at a greater risk for being injured in a fire.



Adults 45 to 54 & 55 to 64 at High Risk for Fire Injury
Adults between the ages of 45 and 54 represent 14% of the Massachusetts population, yet they accounted for 18% of the injuries at structure fires in 2013. Adults between the ages of 55 and 64 represent 9% of the population and yet they accounted for 15% of the injuries in 2013. People in these age groups are most at risk being injured in a fire because they are more likely to try and control the fire. In these age groupings, 38% of the fire-related injuries were incurred while trying to control the fire.

86% of Injuries Were Directly Related to Exposure to Fire Products
Of the 231 civilian injuries in structure fires where the *Cause of Injury* was known, 86% were directly linked to exposure to fire products; 4% of the casualties were exposed to hazardous materials or toxic fumes; 2% were injured while jumping in an escape attempt; 2% slipped or tripped; 1% were struck by or came in contact with an object or fell; and 1% were caught or trapped. Three percent (3%) of the civilian fire injuries were caused by 'Other' causes. The *Cause of Injury* was undetermined or not reported for 44 victims. These figures were not included in this analysis.

77% of Injuries Were Due to Smoke Inhalation or Burns or Both
Of the 210 civilian injuries in structure fires where the *Primary Apparent Symptom* was known, 38% were caused by smoke inhalation only. Twenty-five percent (25%) were

caused by thermal burns only. Burns and smoke inhalation together caused 14% of the injuries. Breathing difficulty or shortness of breath caused 8%; scald burns caused 3% of these injuries; and cardiac symptoms and emotional or psychological stress and pain each caused 2%. Cuts and lacerations, abrasions, and pain were each responsible for 1% of these injuries. Dizziness, fainting or weakness, fractures, cardiac arrest and convulsions or seizures each accounted for less than 1% of the injuries. 'None' was reported as the *Primary Apparent Symptom* for four of these victims. The nature of injury was undetermined or not reported in 61 civilian fire injuries. These were excluded from the percentage calculations.

41% Injured While Trying to Control the Fire

Of the 186 victims for whom A*ctivity at Time of Injury* was known, 41% were attempting to control the fire. Twenty-two percent (22%) were escaping. Twelve percent (12%) were sleeping; 7% were attempting a rescue; 6% returned to the vicinity of the fire before it was under control; 2% were acting irrationally; 2% returned to the vicinity of the fire after it was under control; 1% were from irrational acts; and 1% were unable to act. Eight percent (8%) were injured in 'Other' activities. There were 89 injuries where the activity at time of injury was unknown; these were excluded from the percentage calculations.

Men More Likely to Be Injured Trying to Control the Fire

In 2013, 51, or 50%, of male victims sustained their injuries while attempting to control the fire as compared to 26, or 31%, of female victims. In 2013 men were twice as likely to be injured trying to fight the fire. A higher percentage of men (9%) sustained their injuries while making a rescue attempt than did women (7%), and 28% of women were attempting to escape compared to 17% of men. Ten percent (10%) of men and 15% of women were injured while sleeping; and 2% of men and zero women were injured performing irrational acts. There is a 1% or less difference between men and women in every other activity.

The key to preventing these injuries is to make and practice a home escape plan, remember to get out and stay out, and leave firefighting to the professionals. They have the training, equipment and protective clothing to do the job.

Almost 1/3 of Victims Were Asleep Just Before the Injury

Of the 44 victims for which the *Human Factor Contributing to the Injury* was known, 32% were asleep; 20% were possibly impaired by alcohol; 17% were physically disabled; 12% were possibly impaired by drugs; 10% were possibly mentally disabled; 7% were unconscious; and 3% were unattended or unsupervised persons. Fire sprinklers can provide the extra time to escape to safety for people who are impaired, have a disability, are very young or are very old.

The following table is a cross tabulation which allows us to know what the person was doing when injured and what was either their physical or mental state shortly before becoming a victim. The overall majority of civilian fire injuries came about through trying to control the fire.

CIVILIAN INJURIES BY ACTIVITY AND PRIOR CONDITION

Human Factors Contributing to Injury

Activity At Injury	Asleep	Uncon-scious	Possibly Impaired		Mentally Disabled	Physically		Unsuper-vised
			Alcohol	Drugs		Disabled	Restrained	
Escaping	1	0	1	0	0	1	0	0
Rescue attempt	1	0	0	0	0	0	0	0
Fire control	**4**	0	1	0	1	0	0	1
Return before fire control	0	0	0	0	0	0	0	0
Return after fire control	0	0	0	0	0	0	0	0
Sleeping	**10**	1	1	1	0	0	0	0
Unable to act	0	0	0	0	0	1	0	0
Irrational action	0	0	1	0	1	0	0	0
Other	0	0	0	0	0	0	0	0
Unknown	1	2	5	0	1	2	0	1
Total	17	3	9	1	3	4	0	2

Most Injured People Usually Asleep When Fire Started & Then Slept Through Fire

Historically when both of the fields, *Activity When Injured* and *Human Factors Contributing to Injury,* were completed, the majority of civilian fire injuries occurred when people were asleep at the time of injury and were still asleep at the time of the fire. Although not the overwhelming majority of prior years, one of the leading causes of civilian fire injuries was when people were asleep at the time of injury and were still asleep at the time of the fire. The other leading result was when someone was asleep, awoke and attempted to escape.

Over 1/2 of All Victims Were Involved With the Ignition of the Fire

Fifty-three percent (53%) of all victims were involved with the ignition of the fire that injured them. Eighty-six (86), or 44%, of the 197 civilian victims where *Location at Time of Incident* was known, were in the area of origin and intimately involved with the ignition of the fire. Nineteen (19), or 10%, were not in the area of origin but were involved with starting the fire. An example of this is when someone is involved with starting the fire like tossing a cigarette into a trash can, then leaves the area, but becomes trapped by the heat or smoke of the fire and is injured in their attempt to escape. Fifty-four (54), or 27%, of the 197 victims were in the area of origin but not involved with the ignition of the fire. An example of this is when someone leaves food unattended on the stove in the kitchen and leaves the room. After the fire starts and the individual is alerted to its presence, they are injured trying to put out the fire. Thirty-eight (38), or 19%, of these victims were not in the area of fire origin and were also not involved with its

ignition. The *Location at Time of Incident* was undetermined or not reported in 78 civilian fire injuries. These were excluded from the percentage calculations.

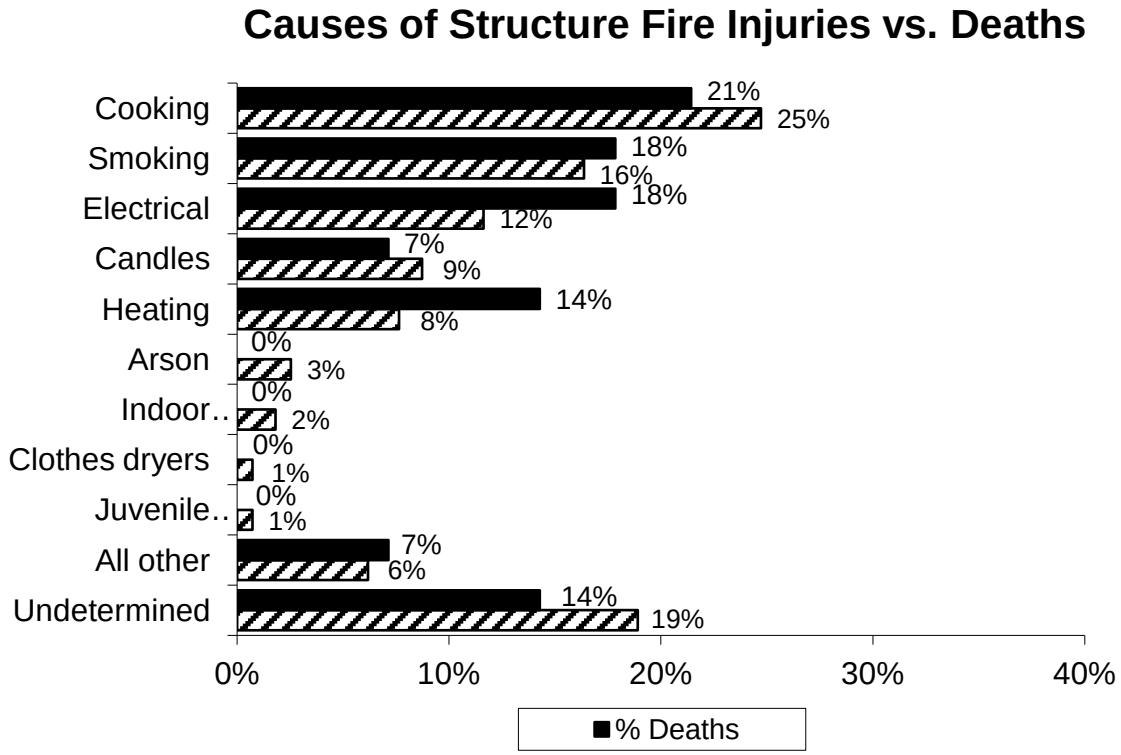
Leading Cause of Injuries Was the Leading Cause of Deaths

The leading cause of fire-related injuries is most often not the leading cause of fire-related deaths. However, in 2013, this was not the case. Cooking fires caused the most injuries and the most fire deaths. Historically smoking fires are the leading cause of fire deaths. In smoking fires, the victim is usually intimately involved in the ignition of the fire. The victim usually falls asleep with a lit cigarette or cigar and the ashes or butt fall down and ignite the victim's clothing, bedding or furniture upon which they were sleeping. The resulting smoke usually renders the victim unconscious and unable to respond to any alarms and any attempt at an escape, and thus succumb to burns, smoke inhalation or both. In cooking fires, most of the victims are directly involved with the ignition of the fire. When the fire begins they are either alerted by working smoke alarms or by the smell of the smoke itself. The alerted individual usually either tries to control the fire or escape from the flames, incurring their injury in the process.

Cooking Fires Were the Leading Cause of Injuries in Structure Fires

Cooking fires were the leading cause of injuries in structure fires. Cooking fires caused 25% of structure fire injuries and 21% of structure fire deaths. Fires started by smoking caused 16% of structure fire injuries and 18% of structure fire deaths. Electrical fires caused 12% of structure fire injuries and 18% of structure fire deaths. Candles caused 9% of injuries and 7% of the deaths. Heating equipment fires caused 8% of injuries and 14% of deaths. Arson caused 3% of structure fire injuries and none of structure fire deaths. Indoor rubbish fires caused 2% of civilian injuries with no deaths. Clothes dryer fires caused 1% of the structure fire injuries and none of the structure fire deaths. Juvenile-set fires caused 1% of structure fire injuries and none of the structure fire deaths in 2013. All the other known causes of structure fires combined caused 6% of the structure fire injuries and 8% of the structure fire deaths. In 2013, undetermined fires caused 19% of structure fire injuries and 14% of structure fire deaths in Massachusetts.

Cooking fires were tied with electrical fires as the leading cause of fires that injured children. Six (6) each, or 21%, were injured in structure fires caused by cooking and electrical fires in 2013. Candles were the second leading cause of injuries with five, or 18% of child injuries in structure fires; and smoking was third with four injuries, or 14%. Cooking was also the leading cause of fires that injured older adults. Eleven (11) older adults were injured in cooking fires accounting for 25% of structure fire injuries to older adults. Smoking fires caused the second most injuries to older adults with eight, or 18%, of these injuries.



Detectors Operated in 57% of Civilian Injuries

Of the 275 injuries where detector status was reported, 57% occurred where smoke detectors were present and operated. In 3% of these fires[39], the detectors did not alert the occupants. Nine percent (9%) of the injuries occurred in structure fires where detectors were present but did not operate. Six percent (6%) of the injuries occurred where there were no detectors present in the structure at all. Seven percent (7%) of civilian structure fire injuries occurred where the fire was too small to activate the smoke detector. Smoke detector performance was undetermined in 49 injuries, or 18% of all injuries. The presence of operating smoke detectors generally gives the victims the time needed to escape the byproducts of the fire: heat, flame and smoke.

Motor Vehicle Fire Injuries

There were 24 motor vehicle fire injuries in 2013, accounting for 7% of all civilian fire injuries. Sixty-seven percent (67%) of these injuries were to men and 33% were to women. Fifty-six percent (56%) of the injuries were caused by exposure to fire products, when the cause was known. Twenty-two percent (22%) were struck by or came into contact with an object and another 22% were injured by multiple causes. When the *Primary Apparent Symptom was Reported*, 33% of these were reported as burns only, 27% were reported as smoke inhalation only; and 13% reported only pain. Where the *Activity at Time of Injury* was known, 33% were unable to act; 27%, of the victims were trying to control the fire when injured; and 13% were trying to escape the fire. The causes

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

of motor vehicle fires that injured civilians in 2013 included fuel spills, collisions, arson, and mechanical malfunctions. See the Motor Vehicle Fire section for safety tips in the event of a car fire.

Outside and Other Fire Injuries

Twenty-four (24), or 7%, of civilian fire injuries occurred in outside and other fire incidents in 2013. Two (2), or 1%, of civilian injuries were caused by special outside fires. Two (2), or 1%, of these injuries occurred in brush fires. One (1), or less than 1%, happened in an outside rubbish fire. Nineteen (19), or 6%, of civilian injuries were caused by unclassified fires.

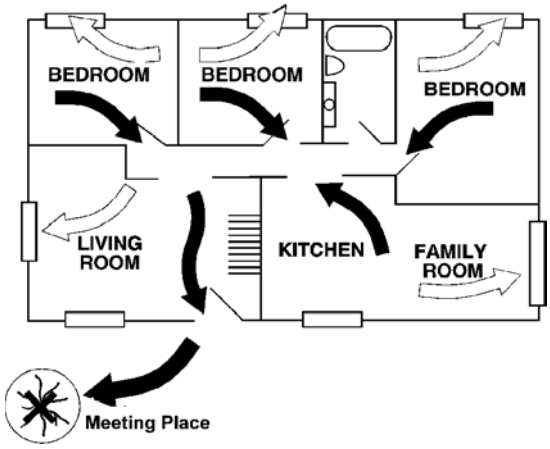
Seventy-five percent (75%) of the civilian victims were men and 25% were women. Burns accounted for 53%, of the injuries to this group, when the *Primary Apparent Symptom* was known. The victim was intimately involved with the ignition in 81% of these injuries where *Location at Ignition* was known.

Safety Practices Are the Best Prevention Methods

In a typical nighttime fire, there is a window of 1-3 minutes in the average home after the smoke alarm sounds for the family to get out safely. In a few minutes, heat and toxic gases make escape impossible. To survive a fire, one must install and maintain smoke detectors as well as make and practice an escape plan. These types of basic fire safety practices are ignored by too many Massachusetts residents and result in fires, injuries, and deaths.

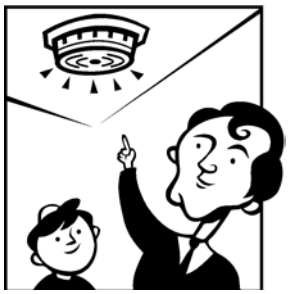
Home Escape Plan

- Practice your home escape plan with the whole family at least twice a year.
- Hold a nighttime drill to test if your children will react properly to a smoke alarm activation. Adjust your escape plan accordingly.
- Plan two ways out of each room. The easy way out is probably a door and the second way out might be a window.
- If you plan for a child or a senior to exit a window, make sure they can open it easily.
- If you can't get out, close your door and go to the window and signal for help.
- Teach children to never hide under beds or in closets.
- If you must go through smoke, crawl low. The coolest, cleanest air will be about 18 inches off the ground.
- Have a meeting place outside where everyone will meet. Be able to tell the fire department if everyone is out safely.



- Get out and stay out; don't go back into a burning building for anything.
- Telephone the fire department from a neighbor's house or use the fire alarm emergency box or a cell phone at a safe distance from the building.

Smoke Detectors

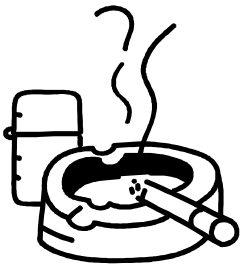


- Install smoke detectors on every level and outside each sleeping area.
- Test smoke detectors monthly.
- Replace the batteries twice a year.
- Never disable your detector.
- Replace detectors every 10 years.

Cooking Safety

- Put a lid on a grease fire to smother it, then turn off the heat.
- Wear short or tight fitting sleeves when cooking. Loose sleeves easily catch fire.
- Never throw water on a grease fire. Water will only spread the fire around.
- Never move a burning pan. You can too easily ignite your clothes or spill the fire onto someone or something else.
- Stand by your pan! Never leave cooking unattended.

Safe Smoking



- Quit!
- Never smoke in bed.
- Use large ashtrays with center rests so cigarettes fall into the ashtray, not on the floor.
- Never throw cigarettes into mulch or flower pots.
- Restrict smoking to outdoors.
- Do not smoke in homes or buildings where medical oxygen is used. Oxygen soaks into clothes, rugs, furniture, hair and bedding, creating an oxygen enriched environment, which make fires start more easily and burn more rapidly, even when the oxygen is "turned off."

Dryer Safety

- Clean the filter screen after each load.
- Stay home while the dryer is in use.
- Clean vents to outside.
- Vacuum the motor area periodically.
- Clean dryer vents regularly.

2013 Firefighter Deaths

No Fire-Related Firefighter Deaths in 2013
In 2013, there were no fire-related fire service fatalities. In the past five years there have been five fire-related fire service deaths for an average of one fire-related fire service death per year.

Fire Service Injuries

478 Firefighters Injured in 2013
In 2013, 478 firefighters were injured while fighting the 29,828 reported fires in Massachusetts. On average, one firefighter was injured at one of every 62 fires in 2013. Four hundred and sixteen (416) firefighters were injured at structure fires. Sixteen (16) firefighters were injured at motor vehicle fires. Forty-six (46) firefighters were injured at outside and other fires. This is a decrease of 73, or 13%, from the 551 fire-related fire service injuries reported in 2012.

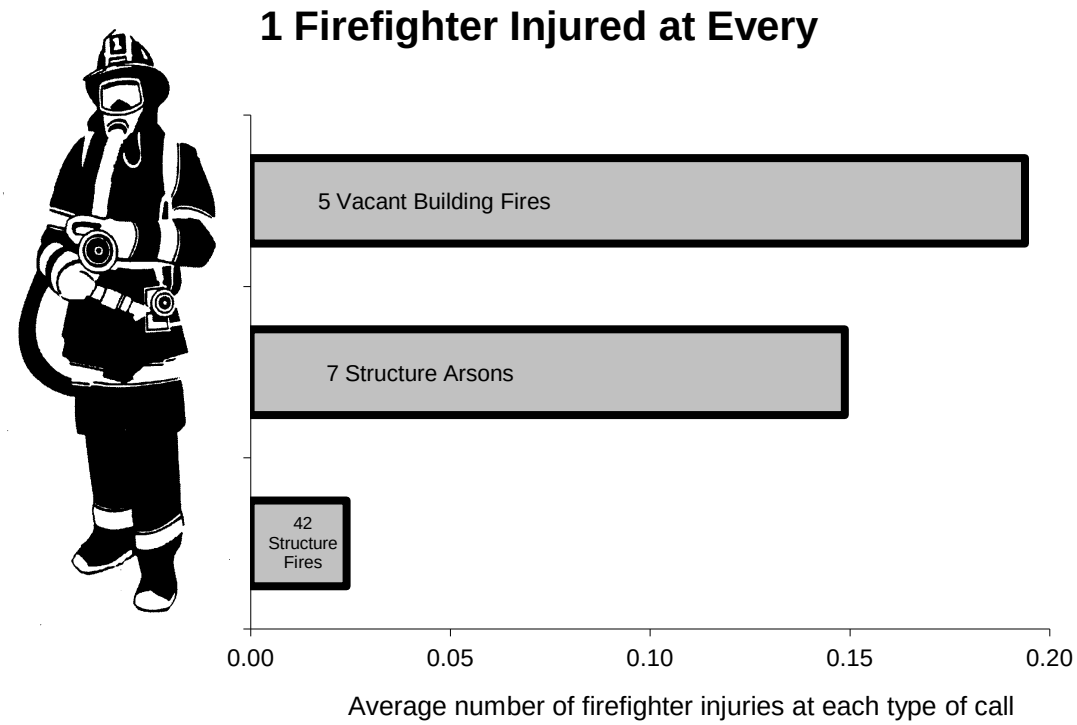
87% of Firefighter Injuries Occurred at Structure Fires
Firefighters were injured more frequently at structure fires than any other fire incident type. Eighty-seven percent (87%) of firefighter injuries occurred at structure fires, while structure fires only accounted for 58% of all fires.

Electrical Fires Caused the Most Injuries at Structure Fires
The largest number of firefighter injuries took place at structure fires caused by electrical problems. Forty-nine (49), or 12%, of structure fire firefighter injuries occurred at electrical fires. Smoking fires accounted for 38, or 9%, of structure fire firefighter injuries. Arsons caused 30, or 7%; and even though cooking fires are the leading cause of structure fires and civilian fire injuries, fires caused by cooking accounted for 28, or 7%, of fire service injuries at structure fires.

Firefighters Injured at 1 of Every 5 Vacant Building Fires
One of the most dangerous types of fires for firefighters in 2013 were vacant building fires. Vacant building fires accounted for 56, or 12%, of all firefighter injuries in 2013. These 56 injuries also represent 13% of the number of firefighter injuries incurred fighting structure fires in 2013. On average there was one firefighter injury for every five

vacant building fires; one firefighter injury for every seven structure arsons; and one firefighter injury for every 42 structure fires[40].

The following graph illustrates this.



71% of Firefighter Injuries Minor

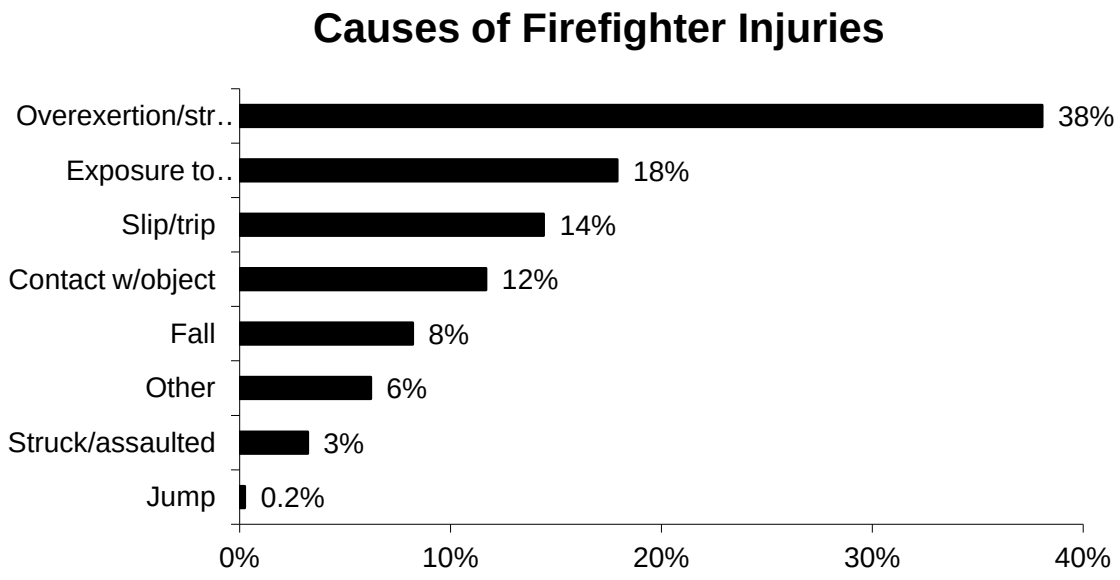
Seventy-one percent (71%) of reported firefighter injuries were minor. Forty-eight percent (48%) of the injuries were reports only, including exposures to toxic substances or harmful physical agents through any route of entry into the body. Ten percent (10%) of these injuries were recorded as only needing first aid. Thirteen percent (12%) reported having been treated by a physician with no time lost. Injuries reported as moderate accounted for 27% of firefighter injuries, meaning that immediate medical attention was needed but there was little danger of death or permanent disability. One percent (1%) of firefighter injuries were coded as severe. This means that the injury was potentially life-threatening if the condition was not controlled. Less than 1% were reported as life-threatening firefighter injuries where body processes and vital signs were not normal in 2013.

Over 1/3 of Injuries from Overexertion or Strain

Thirty-eight percent (38%), or over one-third, of the 402 firefighter injuries, where the cause was known, were due to overexertion or strain; 18% were exposed to some form of

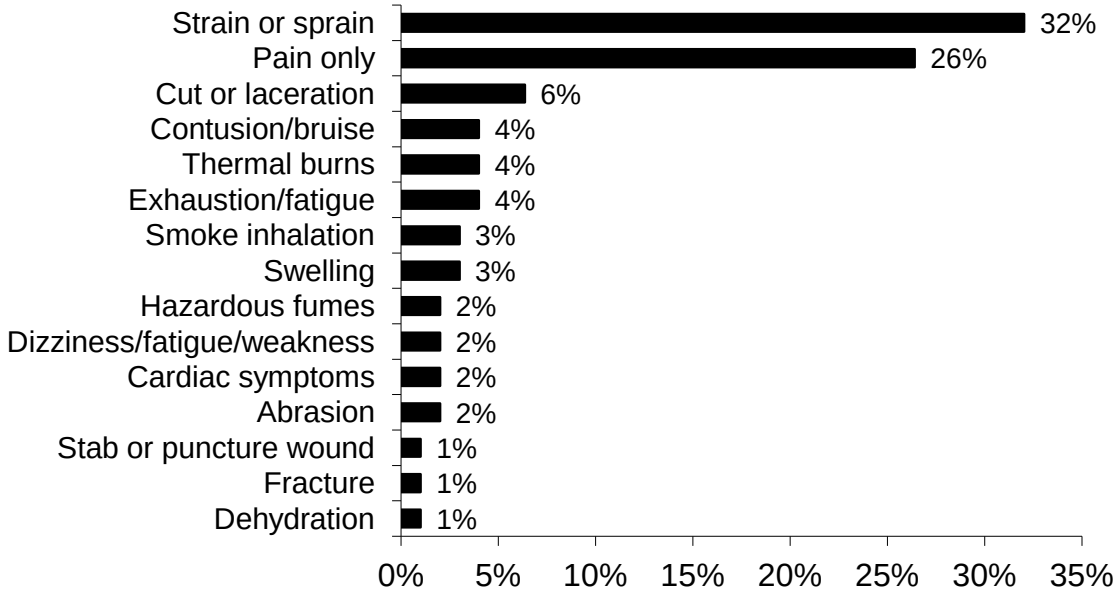
[40] On average there were 0.19 firefighter injuries at every vacant building fire; there were only 0.15 reported firefighter injuries per structure arson in 2013; and there were 0.02 reported firefighter injuries per structure fire in the Commonwealth in 2013.

hazard including heat, smoke or toxic agents; 14% were injured when they slipped or tripped; 12% were caused by contact with some object; 8% of firefighters were injured from falls; 3% were injured when they were struck by an object or assaulted by a person or animal; less than 1% were injured when they jumped; and 6% of the Massachusetts fire service injuries were caused by other conditions where no code was available to describe the situation. The cause was not reported or undetermined for 76 firefighter injuries, and these injuries were excluded from the percentage calculations.



32% Experienced Sprains or Strains & 26% of Firefighters Reported Pain
Of the 409 firefighter injuries where *Primary Apparent Symptom* was known 32%, of injured firefighters reported sprains or strains as their primary symptom; 26% reported pain only; 6% reported cuts or lacerations. Four percent (4%) reported contusions and bruising; thermal burns were reported by 4% of the firefighters; and exhaustion or fatigue also counted for 4% of these injuries. Smoke inhalation and swelling each caused 3% of these injuries. Cardiac symptoms, hazardous fumes, abrasions and dizziness, fatigue or weakness each caused 2% of these injuries. Stab or puncture wounds, fractures and dehydration each caused 1%; of firefighter injuries in Massachusetts in 2013. *Primary Apparent Symptom* was undetermined or not reported for 69 firefighter injuries. These injuries were excluded from the percentage calculations.

Primary Symptoms of Firefighter Injuries



Firefighters Face Other Risks in Addition to Fires
The Massachusetts Fire Incident Reporting System (MFIRS) generally only collects information about injuries at fires. Firefighters face many other dangerous situations in addition to those found at fires. Many are also injured while controlling hazardous materials incidents, performing rescues and extrications, performing emergency medical services, investigations, inspections and other activities.

Look at Symptoms Incurred by Different Parts of Body to Prevent Injuries
Different parts of the body suffer different types of injuries. For example, 44% of eye injuries were caused by avulsions; cuts or lacerations caused 41% of the injuries to the hands and fingers; 48% of the injuries to the back and spine were sprains or strains; and cardiac symptoms caused 31% of the internal injuries.

Over 1/4 of All Firefighter Injuries Were To the Trunk Part of the Body
Firefighting is a very strenuous and potentially dangerous job. It requires a person to lift heavy loads and put large amounts of stress on their body. One hundred and five (105), or 28%, of all firefighter injuries were to the trunk part of the body that includes the lower back. Forty-two (42), or 42%, of these injuries were from strains or sprains and 37, or 35%, were reports of pain only. The chart below shows the distribution of firefighter injuries by body part. The percentages given are the ratio of the number of reported primary apparent symptoms for each given body part grouping.

Firefighter Injuries by Part of Body

Eyes (9)

Avulsion	44%
Foreign body obstr.	22%
Abrasion	11%

Trunk (105)

Strain or sprain	42%
Pain only	35%
Thermal burns	4%

Internal (13)

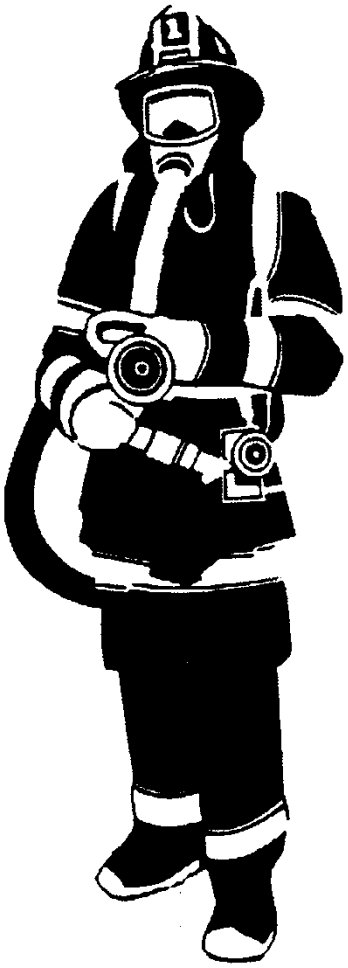
Cardiac symptoms	31%
Breathing difficulty	15%
Smoke inhalation	8%
Dehydration	8%
Heat stroke	8%
Vomiting	8%

Hand, Fingers (39)

Cut, laceration	41%
Pain only	15%
Strain or sprain	8%
Thermal burns	8%
Stab/puncture	8%

Legs (12)

Strain or sprain	42%
Pain only	25%



Ears & Face (10)

Thermal burns	40%
Fracture	30%
Cut or laceration	20%

Back & Spine (46)

Pain only	52%
Strain or sprain	48%

Arms (22)

Strain or sprain	50%
Pain only	23%
Dislocation	9%
Contusion/bruise	9%

Wrists (10)

Pain only	30%
Strain or sprain	30%
Thermal burns	20%

Knees (43)

Strain or sprain	49%
Pain only	26%

Feet & Toes (14)

Pain only	29%
Strain or sprain	21%
Swelling	21%

Fire in Gloucester Injures 19 Firefighters – Most Fire Service Injuries

- On January 18, 2013, at 10:43 p.m., the Gloucester Fire Department was called to a fire at a four-unit apartment building. A young child was playing with a lighter in a bedroom and started the fire. Nineteen (19) firefighters were injured at this fire. All 19 injuries were only exposure reports for smoke inhalation and sprains. Detectors were present and they operated and the building did not have a sprinkler system. Damages from this fire were estimated to be $225,000.

Amherst Fire Injures 15 Firefighters –2nd Most Fire Service Injuries

- On January 21, 2013, at 2:23 a.m., the Amherst Fire Department was dispatched to a fire in a 10-unit apartment building of undetermined cause. The fire began in a second floor bedroom. The victim, a 21-year old man, was a college student living in off-

campus housing. He was found in an upstairs bathroom. There were no other civilian injuries associated with this fire; but 15 firefighters were injured. Smoke detectors were present and alerted the occupants of the building. The building was not sprinklered. Damages from this fire were estimated to be $800,000.

Arson Fires

902 Arsons - 195 Structures, 75 Vehicles, 632 Other Arsons
Nine hundred and two (902), or 3%, of the 29,828 fire incidents reported to the Massachusetts Fire Incident Reporting System were considered to be intentionally set, or for the purpose of analysis, arson[41]. The 195 structure arsons, 75 motor vehicle arsons, and 632 outside and other arsons caused four civilian deaths, accounting for 9% of civilian fire deaths, nine civilian injuries and 30 fire service injuries. The estimated dollar loss from arsons was $6.6 million. The average dollar loss per arson fire was $7,327. Total arson was down by 23% from the 1,165 in 2012.

1,128 Fires with Cause Still Under Investigation
In 2013, 1,128 Massachusetts fires were still listed as Cause Under Investigation. There were 3,104 fires where the Cause of Ignition was listed as Undetermined. It is important that fire departments update their fire incident reports when either a cause is determined or its cause is deemed to be undetermined after investigation.

The following table shows the total number of reported arsons for the past 10 years. The total is then broken down into the total number of reported structure, vehicle and all other types of arsons along with that subtotal's percentage of the total number of arsons. It also illustrates that all types of arsons, including structure, motor vehicle and outside and other arsons are at an all time.

[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.

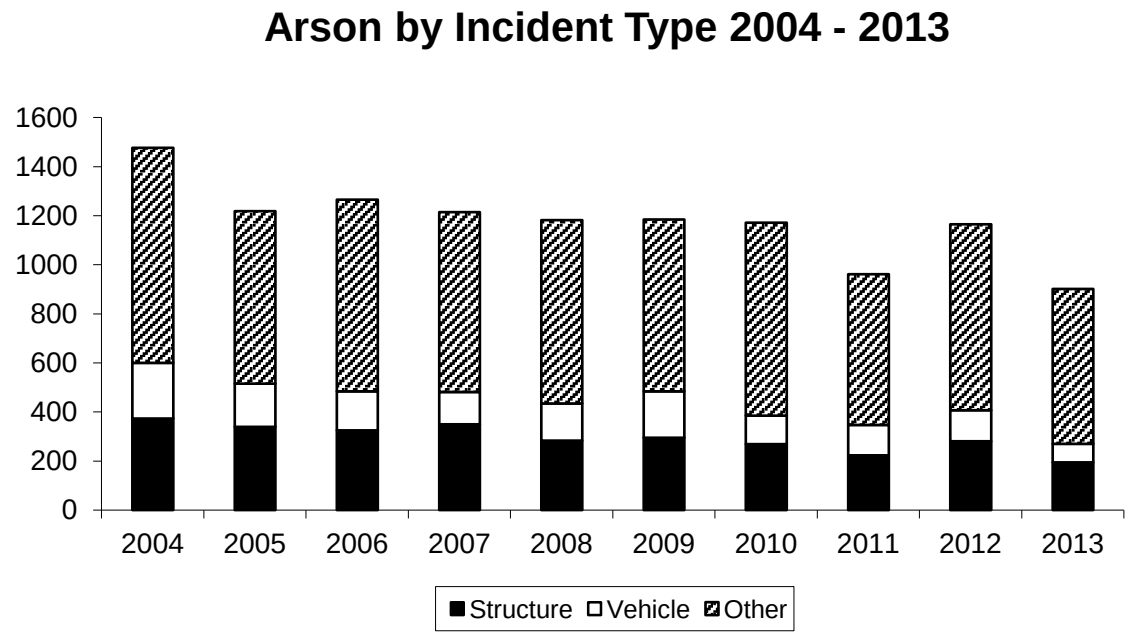
ARSONS BY YEAR

Year	Total Arsons	Structure Arsons	% All Arsons	Vehicle Arsons	%All Arsons	Other Arsons	% All Arsons
2013	902	195	22%	75	8%	632	70%
2012	1,165	281	24%	126	11%	758	65%
2011	962	223	23%	124	10%	615	67%
2010	1,171	269	23%	116	10%	786	66%
2009	1,185	295	25%	189	16%	701	59%
2008	1,182	283	24%	151	13%	748	64%
2007	1,215	350	28%	131	11%	734	61%
2006	1,265	325	26%	159	13%	781	62%
2005	1,234	343	28%	184	15%	707	57%
2004	1,477	373	26%	227	15%	877	59%

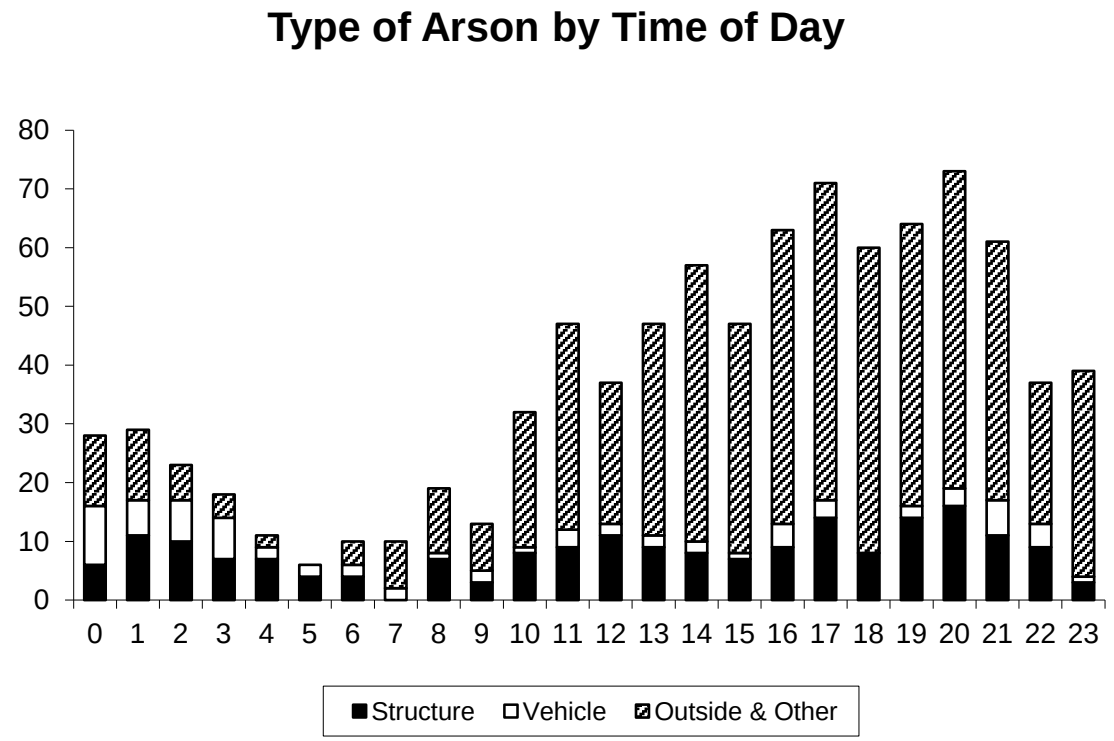
Largest Reduction in Motor Vehicle Arsons

The following chart illustrates arson by incident type over the past decade. This type of chart can be used as a visual representation of the ratios between the three types of arson: structure, motor vehicle and outside and other arsons. The trend has been for motor vehicle arsons to comprise a smaller percentage of total arsons, while the percentage of outside and other arsons of total arsons has risen during the same time span. For example, motor vehicle arsons accounted for 21% of arson fires in 2001 but only 8% of the total reported arson fires in 2013. Looking at these ratios allows one to more clearly identify specific fire problems, such as increases in structure or motor vehicle arsons. Trends may be masked if you were to look just at total numbers.

For instance, outside and other arsons numbered 987 in 2001 and 632 in 2013. While we have a huge drop in the total numbers of reported outside and other arsons, the ratio or percentage of outside and other arsons to total arsons has remained at or above 50%.



The following chart illustrates the types of arsons by the time of day they occur. Midnight to 1:00 a.m. is represented by 0, 1:00 a.m. to 2:00 a.m. is represented by 1, etc. Arson is most likely to occur between the hours of 2:00 p.m. to 9:00 p.m. The peak times for structure arsons were 5:00 p.m. and 10:00 a.m. Motor vehicle arsons were most likely to occur between 12:00 a.m. and 3:00 a.m. Outside and other arsons peaked from 2:00 p.m. to 10:00 p.m.



Structure Arson

195 Arsons, 7 Civilian Injuries, 29 Fire Service Injuries
In 2013, there were 195 reported structure arsons. They caused seven civilian injuries, 29 fire service injuries and an estimated dollar loss of $6.1 million. These 195 incidents accounted for 1% of the 17,353 structure fires in 2013, and were down by 31% from the 281 reported structure arsons in 2012.

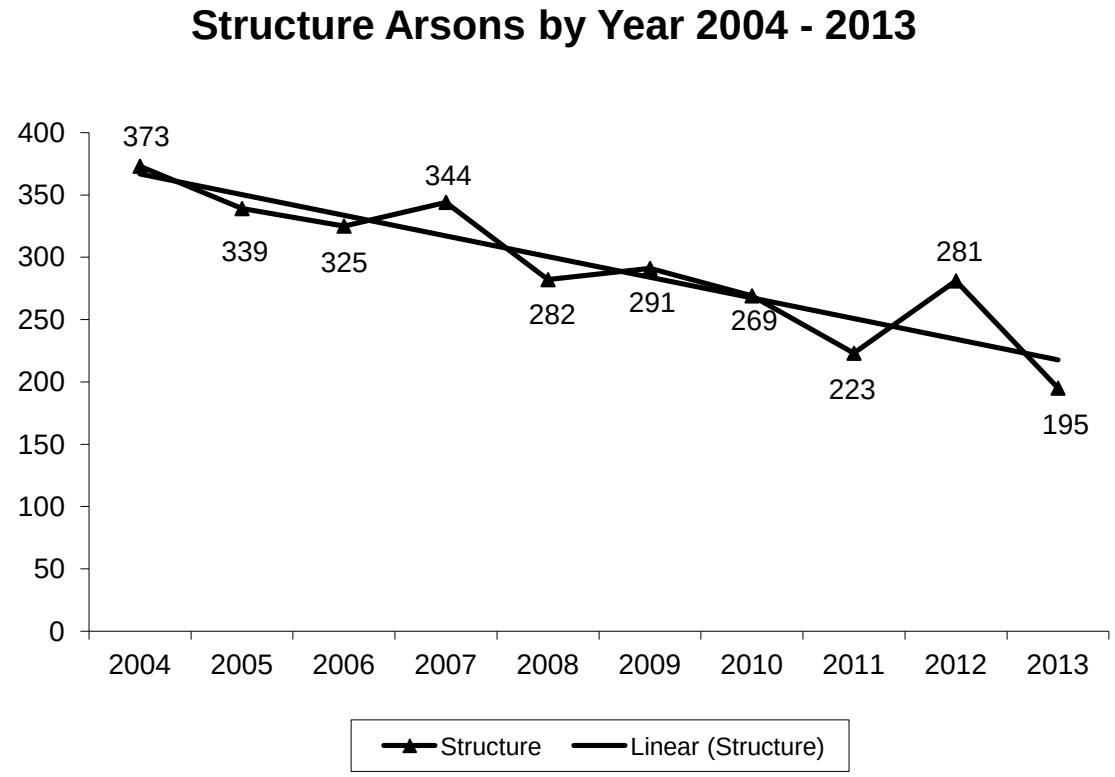
There were no civilian deaths in structure arsons in 2013. In 2012 arson was the leading cause of structure fire deaths and all fire deaths. There were five civilian deaths from arson; all five being suicides. The seven civilian injuries accounted for 2% of the overall civilian injuries and 3% of all civilian injuries at structure fires. The 29 fire service injuries accounted for 6% of the total fire service injuries and 7% of the injuries firefighters sustained at all structure fires in 2013. The estimated dollar loss for structure

arsons was $6,093,309, accounting for 2% of the overall dollar loss and 3% of the estimated dollar loss in all reported structure fires. The average loss per structure arson was $31,248.

In 2013, 583 Massachusetts structure fires were still listed as Cause Under Investigation. There were 570 structure fires where the Cause of Ignition was listed as Undetermined.

Structure Arsons Drop
Structure arsons decreased in 2013. These 195 arsons were a decrease of 86, or 31%, from the 281 reported in 2012.

Structure Arson Down 48% Since 2004
Structure arson has been on a downward trend since 1991 when 1,974 structure arsons were reported to MFIRS. Structure arsons have decreased by 48% since 373 were reported in 2003. The chart below shows the trend of structure arsons in the past decade.



The following table shows the cities that reported the most structure arsons in 2013; their 2010 population according to the United States Census; the number of structure arsons reported in 2013; and the rate of structure arsons per 1,000 people in 2013. The cities are ranked by the 2013 rate of arsons per 1,000 population. Cities with the most structure arsons may not have the highest rate of structure arsons.

The City of Boston, as the largest city in the Commonwealth, leads the state in the number of structure arsons but the Shelburne Center Fire District had a higher structure arson rate. Although Shelburne Center had only one structure arson and was tied with a rank of 31, its rate of 1.04 structure arsons per 1,000 population was the highest in the state and was 35 times the state structure arson rate of 0.03 per 1,000 population.

MASSACHUSETTS CITIES WITH THE MOST STRUCTURE ARSONS PER 1,000 POPULATION IN 2013

City	Population	2013 Arsons	2013 Rate/ 1,000 Pop.
Chelsea	35,177	7	0.20
Fall River	88,857	15	0.17
Everett	41,667	6	0.14
Lowell	106,519	13	0.10
Lawrence	76,377	8	0.09
Taunton	55,874	5	0.09
Pittsfield	44,737	24	0.08
Amherst	37,819	3	0.07
Worcester	181,045	12	0.06
Methuen	47,255	3	0.06
New Bedford	95,072	6	0.05
Chicopee	55,298	3	0.05
Waltham	60,632	3	0.05
Haverhill	60,879	3	0.05
Brockton	93,810	4	0.04
Boston	617,594	22	0.04
Springfield	153,060	5	0.03
Massachusetts	**6,547,629**	**195**	**0.03**

Building Arsons

In 2013 there were 188 building arsons. These 188 arsons accounted for 96% of all the structure arsons in Massachusetts. These building arsons caused all seven civilian injuries, 29 fire service injuries and an estimated dollar loss of $6.1 million.

Over 2/3 of Building Arsons Occurred in Residences

One hundred and thirty (130), or 69%, of the 188 building arsons occurred in residential occupancies. Educational facilities and storage properties each accounted for 7% of these arsons. The following table shows the number of structure arsons, civilian deaths, civilian injuries, fire service injuries, dollar loss and the percentage of the total structure arsons for each occupancy type.

BUILDING ARSON BY OCCUPANCY TYPE

Occupancy	Building Arsons	Percent of Total	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss
Assembly	12	6%	3	1	0	0	$63,802
Educational	13	7%	0	0	0	0	3,056
Institutional	4	2%	0	0	0	0	26,700
Residential	**130**	**69%**	**25**	**6**	**0**	**0**	**5,436,400**
1- & 2-Family	*47*	*25%*	*16*	*4*	*0*	*0*	*2,671,521*
Multifamily	*72*	*38%*	*9*	*2*	*0*	*0*	*2,751,779*
All Other Residential	*11*	*6%*	*0*	*0*	*0*	*0*	*13,100*
Mercantile, business	11	6%	0	0	0	0	190,051
Basic Industry	1	1%	0	0	0	0	0
Manufacturing	5	3%	0	0	0	0	38,000
Storage	11	6%	1	0	0	0	328,800
Special Properties	1	1%	0	0	0	0	0
Unclassified	0	0%	0	0	0	0	0
Total	**188**	**100%**	**29**	**7**	**0**	**0**	**$6,086,809**

Motor Vehicle Arson

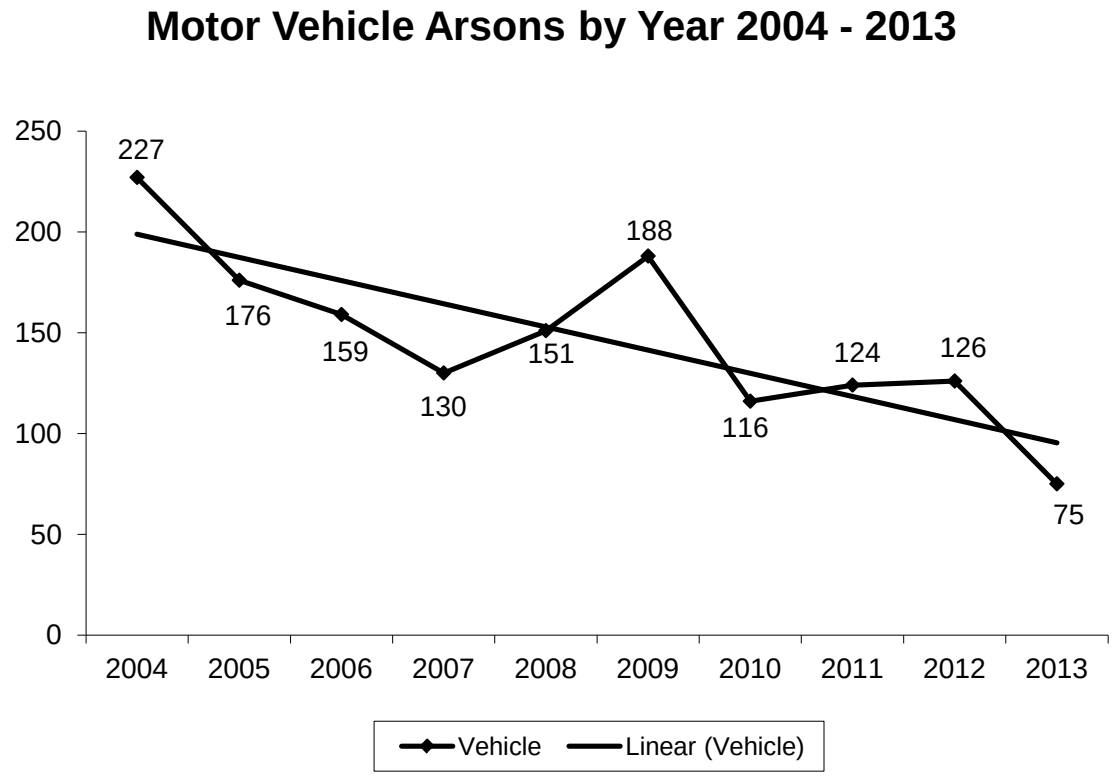
75 Arsons – 2 Civilian Deaths & $387,751 in Damages
Seventy-five (75), or 3%, of the 2,587 vehicle fires were considered intentionally set in 2013. There were two civilian deaths in motor vehicle arsons in 2013. The estimated dollar loss in motor vehicle arsons was $387,751, accounting for less than 1% of the overall fire dollar loss and 1% of the dollar loss associated with all the 2013 motor vehicle fires. The average loss per vehicle arson was $5,170. Passenger cars and vans accounted for 87% of the 75 motor vehicle arsons. Both civilian deaths in motor vehicle arsons were self-immolation.

In 2013, 254 Massachusetts motor vehicle fires were still listed as 'Cause Under Investigation'. There were 601 motor vehicle fires where the "Cause of Ignition" was listed as 'Undetermined'.

Motor Vehicle Arsons Decrease
Motor vehicle arsons decreased in 2013. These 75 arsons are a decrease of 51, or 40%, from the 126 reported in 2012.

The Burned Motor Vehicle Reporting Law
The Massachusetts Fire Incident Reporting System first identified motor vehicle fires and motor vehicle arson as major problems in 1985. The Burned Motor Vehicle Reporting Law took effect in August of 1987. The law requires owners of burned motor vehicles to complete and sign a report that must also be signed by a fire official from the department

in the community where the fire occurred. The graph below shows the effectiveness of this law. Since the law took effect in 1987, motor vehicle arsons have decreased by 99% from 5,116 in 1987 to 75 in 2013.

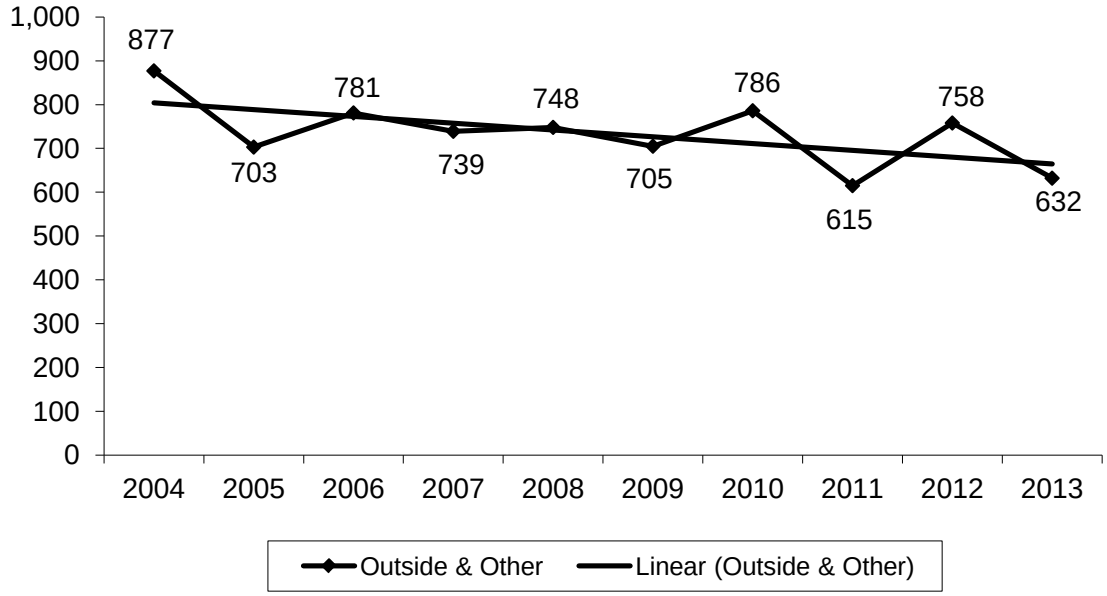


Outside and Other Arson

632 Arsons – 2 Civilian Deaths & 2 Civilian Injuries
Six hundred and thirty-two (632), or 6%, of the total outside and other fires were considered intentionally set in 2013. There were two civilian deaths in outside or other arsons in 2013. Both were self-immolation incidents. The two civilian injuries in outside and other arson fires accounted for 1% of the total civilian injuries and 8% of civilian injuries in all outside and other fires. The fire service injury accounted for less than 1% of all fire-related fire service injuries and 2% of all fire service injuries in outside in other fires. The estimated dollar loss for these arsons was $127,650. The average loss per outside and other arson was $202.

In 2013, 291 outside and other fires were still listed as ‘Cause Under Investigation.’ There were also 1,933 outside and other fires where the “Cause of Ignition” was listed as ‘Undetermined’.

Outside & Other Arsons by Year 2004 - 2013



Outside & Other Arsons Drop

Outside and other arsons decreased in 2013. These 632 arsons are a decrease of 126, or 17%, from the 758 reported in 2012. Brush arsons decreased by 72, or 18%; outside rubbish arsons decreased by 12, or 13%; special outside arsons decreased by 23, or 13%; cultivated vegetation or crop arsons increased by three, or 300%; and unclassified arsons decreased by 22, or 22%, from those reported in 2012.

Lenox and Shelburne Center Had Largest Loss Arsons in 2013

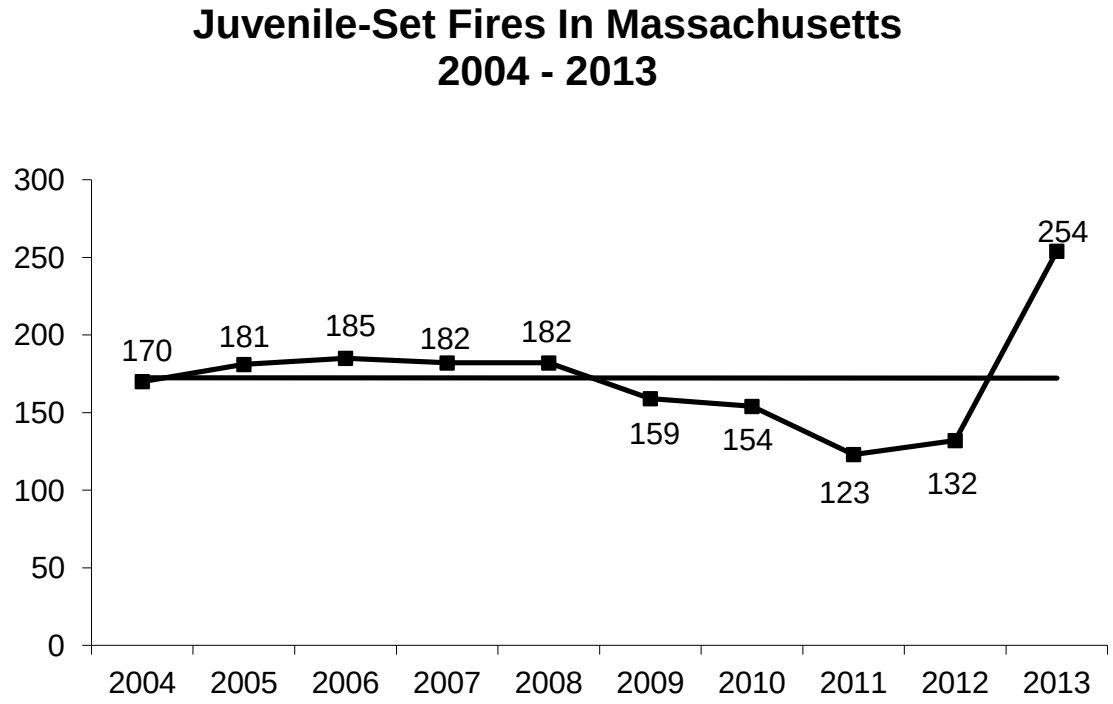
There were no arsons where the dollar loss was greater than $1 million in 2013. There were 15 arsons where the dollar loss was between $100,000 and $999,999.

- On April 11, 2013, at 7:16 p.m., the Lenox Fire Department was called to an intentionally set fire in a 54-unit apartment building. An occupant set her mattress on fire in an apparent suicide attempt. Two civilians and one firefighter were injured at this fire. Detectors were present and alerted the occupants of the building. The building was sprinklered but it did not operate because the fire was in an area not protected by the system. Damages from this fire were estimated to be $560,000.

- On April 23, 2013, at 10:31 p.m., the Shelburne Center Fire Department was called to an intentionally set fire in a two-family home. Someone poured gasoline in an interior stairway and ignited it. One civilian and one firefighter were injured at this fire. Detectors were present and alerted the occupants of the building. The building was not sprinklered. Damages from this fire were estimated to be $550,000.

Juvenile-set Fires

Children Playing With Fire Caused 254 Fires & 1.1 Million in Damages
In 2013, children playing[42] with matches, lighters and other heat sources caused 254 reported fires, three civilian injuries, 20 fire service injuries and an estimated dollar loss of $1.1 million. The average dollar loss per fire was $4,475. These fires were up by 92% from 132 incidents in 2012. This number goes against the downward trend of the past decade. This is the most reported juvenile-set fires since 2001, which is the year MA converted to the new MFIRS version 5 reporting system with new rules and definitions.



41 Structure Fires & 213 Outside & Other Fires
The 254 fires set by children and youth included: 41 structure fires, 169 brush, tree or grass fires, nine outside rubbish fires, 23 special outside fires, one cultivated crop fire, and 11 fires that could not be classified further. What is amazing is the 231% increase in brush fires that were set by juveniles in a year were all brush fires decreased by 914 fires, or 16%.

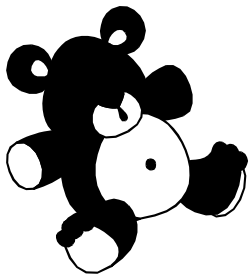
[42] The U.S. Fire Administration (USFA) determines the codes for the National Fire Incident Reporting System (NFIRS) & uses the code children playing to describe juvenile-set fires. We fully realize this term is inadequate to describe all child and youth-set fires & try to limit use of the phrase to describe the codes used to report these fires.

Juvenile-set Fires Cause 3 Civilian Injuries & 20 Fire Service Injuries
Three (3) civilians and 20 fire service personnel were injured at the 254 fires set by juveniles. Two (2) of the three civilian injuries were female. Two (2) were under the age of 18. One (1) was injured trying to extinguish the fire and it was undetermined how the other two were injured.

Nineteen (19) of the 20 fire service injuries occurred at a single building fire. All 19 of these fire service injuries were classified as 'report only from exposure to hazardous materials'.

Over 1/2 of All Juvenile-set Building Fires Occur in Apartments
Fifty-one percent (51%) of the 41 building fires caused by juveniles occurred in multi-family homes; 27% occurred in one or two-family homes; 7% occurred in high schools, junior high schools or middle schools. Twenty percent (20%) of the juvenile-set fires started in bedrooms; another 20% began in kitchens; and 17% began in bathrooms.

48% of Fires Set by Juveniles Using Smoking Materials
Forty-eight percent (48%) of juvenile-set fires were started by smoking materials[43]. Twenty-two percent (22%) of the structure fires were started using matches. Twenty percent (20%) of the structure fires set by children were started with lighters. Heat from other open flames or smoking materials caused 7% of these fires. Hot embers or ashes were the heat source for 17% of these fires and unclassified hot or smoldering objects caused 8%. Fireworks, radiated heat from operating equipment and candles were each the heat source for 4% of juvenile-set fires in 2013. Unclassified explosives or fireworks was the cause in 2% of the juvenile-set fires. Flying brands, radiated heat from another fire, magnified sunlight, Heat from direct flame from another fire, heat or spark from friction and a model rocket were each caused 1% of these fires. This demonstrates a need for education to both parents and children on the danger of matches and lighters, the use of illegal fireworks and safe candle use.



Child with Lighter Sets Own Apartment Building on Fire in Northampton
In 2013 there were three juvenile-set fires that caused over a $100,000 in estimated damages. These three fires caused one civilian injury, 19 fire service injuries and a dollar loss of $945,000, or 83%, of the total dollar loss for all juvenile-set fires.

- On July 22, 2013, at 1:08 p.m., the Northampton Fire Department was called to a fire at a 12-unit apartment building caused by a youth playing with a cigarette lighter. The fire was started by a 6-year old playing with a cigarette lighter in the basement. One (1) civilian was injured at this fire. Smoke detectors were present and alerted the occupants of the building. The building was not sprinklered. Total damages were estimated to be $395,000.

[43] Smoking materials includes cigarettes, pipes, cigars, cigarette lighters, matches, and heat from unspecified smoking materials.

Parents and Caregivers Must Protect Children from Themselves
Parents and caregivers must take steps to protect their children from the dangers of fire.

- Make sure that all matches and lighters are stored out of children's reach.
- If you need a lighter, buy one that is child resistant. Since 1994, all disposable butane lighters and most novelty lighters are required to be able to resist the efforts of 85% of children under five who try to operate them in a specified test. Some are easier to use than others. If one brand is cumbersome, switch to another. *Do not disable the child-resistant feature.*
- Supervise young children at all times. Teach children the safe uses of fire, including birthday candles and barbecuing. When a child is old enough, let him or her light the candles while you watch. It is only safe for children to use fire when adults are present.

- If your child seems overly curious about fire or has set a fire, call your local fire department and ask if they have a juvenile firesetting intervention program. Don't assume the child will 'grow out of it.' Juvenile firesetting is dangerous and must be addressed by trained professionals.
- Parents who smoke should keep their lighters on their person at all times, not on the table or in a purse.
- Fireworks are illegal in Massachusetts. Adults should leave the fireworks to the professionals in order to protect everyone's children.

Tip of the Iceberg
These fires should be considered just the tip of the iceberg. Juvenile firesetting programs have found that only one in 10 juvenile-set fires are actually reported to the fire department.

Cooking Fires

Cooking Caused 11,725 Fires, 7 Civilian Deaths & 72 Civilian Injuries
Unattended cooking, other unsafe cooking practices and defective cooking equipment caused 11,725 fires, seven civilian deaths, 72 civilian injuries, 28 firefighter injuries and an estimated dollar loss of $10.7 million. The average dollar loss per fire was $916. Cooking fires accounted for 39% of the total 29,828 fires that occurred in 2013.

Ninety-eight percent (98%) of the fires caused by cooking occurred in structures. The 11,725 fires included: 11,522 structure fires, 63 special outside fires, two motor vehicle fires, two brush fires, one outside rubbish fire, and 135 fires that could not be classified further.

Confined Cooking Fires Account for 35% of Total Fires

There were 10,992 cooking fires confined to a non-combustible container. These 10,992 fires represent 37% of the total 29,828 fires that occurred in Massachusetts in 2013. This is the largest single cause of fires in Massachusetts. Confined cooking fires decreased by 1% from the 11,068 reported in 2012.

82% of Cooking Fires in Buildings Were Unintentional

In 1,065, or 82%, of the 1,306 cooking fires in building fires where the 'Cause of Ignition' was reported, it was reported as unintentional. Five percent (5%) of these fires were the result of a failure of equipment or heat source. One percent (1%) of the reported cooking fires were classified as intentional. In 12% of cooking fires, the cause of ignition was undetermined. Ten thousand one hundred and ninety-eight (10,198), or 87%, of all cooking fires were fires contained to non-combustible containers that did not require having a cause reported.[44]

Unattended Cooking Starts 11% – Stand by Your Pan!

Human error was responsible for the majority of cooking fires. Eleven percent (11%) of cooking fires, where 'Factors Contributing to Ignition' was completed, were caused by unattended cooking; 4% were caused by combustibles left too close to the cooking equipment; 3% were caused by the misuse of materials or products; 3% was a failure to clean the cooking equipment; 3% were started by abandoned materials; and 2% started when the equipment was accidentally turned on or not turned off. Eighty-eight percent (88%) of cooking fires were confined fires where this data is not collected. This data has led to our "Stand By Your Pan" cooking safety campaign.

Cooking Was the Leading Cause of Injury in Fires in 2013

Cooking was the leading cause of injury in all types of fires in 2013. This is not surprising considering that two-thirds, or 66%, of residential fires start in the kitchen. Of the 72 cooking fire injuries, 54% of victims were male and 46% were female. Seven percent (7%) of victims were under age 10; 1% of the victims were between the ages of 10-14; 14% were 15-24; 22% were 25-34; 15% were 35-44; 14% were 45-54; 14% were 55-64; 4% were 65-74; 6% were 75-84; and 3% were over the age of 85. People aged 25 to 54 accounted for 51% of the people injured in cooking fires.

90% of Victims in Room or Area of Fire Origin

Of the 50 cooking fire injuries where location at ignition is known, 90% of the victims were injured in the room or area of fire origin. Sixty-two percent (62%) were intimately involved with the ignition; 28% of victims were in the room or space of fire origin but not involved; 4% were not in the area of origin but involved, most likely these are the people who initially left the cooking unattended; and 6% were not in the area of origin and not involved.

[44] A fire contained to a non-combustible container has a special incident type code. If one of these codes is used then only a Basic Form is completed and the Cause of Ignition field on the Fire Module does not have to be populated. A fire department may still elect to complete the Fire & Structure Fire Modules and all associated fields if it wants to.

58% of Cooking Injuries Occurred When Trying to Control Fire
Fifty-eight percent (58%) of cooking injuries occurred when trying to control the fire. Of the 53 cooking fire injuries for which activity at time of injury was known, 58% of victims were attempting to control the fire; of the 31 victims injured while attempting to control the fire, 68% were male. Thirteen percent (13%) of the victims of cooking fire injuries were escaping; 8% were injured making a rescue attempt; 6% were attempting to return to the vicinity of the fire before the fire was under control; 2% were sleeping at the time of injury; 2% were attempting to return to the vicinity of the fire after the fire was under control; and 11% of the victims activities were classified as 'Other'. This data has lead to our "Put A Lid On It" cooking safety campaign.

Almost 1/2 of All Cooking Injuries Were Breathing Related
Stovetop fires tend to produce a lot of smoke and when people choose to attempt to extinguish them, they run a great risk of being overcome by toxic smoke. Of the 58 cooking fire injuries where nature of injury was known, 29% suffered only from smoke inhalation; 16% suffered from burns and smoke inhalation; 3% suffered from breathing difficulty or shortness of breath; and 2% suffered from hazardous fumes inhalation. Thirty-eight percent 38% of victims suffered only from thermal burns; 10% received scald burns. A cut or laceration and emotional or psychological stress were both the primary apparent symptom in 1% of cooking fire injuries.

7 Civilian Fire Deaths in 2013
While cooking is the leading cause of residential building fires, it usually isn't the leading cause of civilian fire deaths. However in 2013 it was the leading cause of fire deaths. There were seven civilian fire deaths attributed to cooking fires in 2013. These seven deaths accounted for 22% of residential fire deaths and 14% of all civilian fire deaths.

The importance of responding correctly to a clothing ignition – Stop, Drop and Roll – cannot be overemphasized. Older adults, who often are more afraid of falling than of fire, are historically the age group with the highest risk of being injured in a cooking fire. They must be persuaded that they can indeed safely lower themselves to the ground and roll to smother the flames.

- **Stand by your pan!** Never leave cooking, boiling, broiling, or frying unattended.
- **Put a lid** on a grease fire to smother it, and then turn off the heat.
- Never move a burning pan. You can too easily ignite your clothes or spill the fire onto someone or something else.
- Wear short or tight fitting sleeves when cooking. Loose sleeves can easily catch fire.
- Stop, Drop and Roll if clothing ignites, no matter how young or old.
- Never throw water on a grease fire. Water will only spread the fire around.

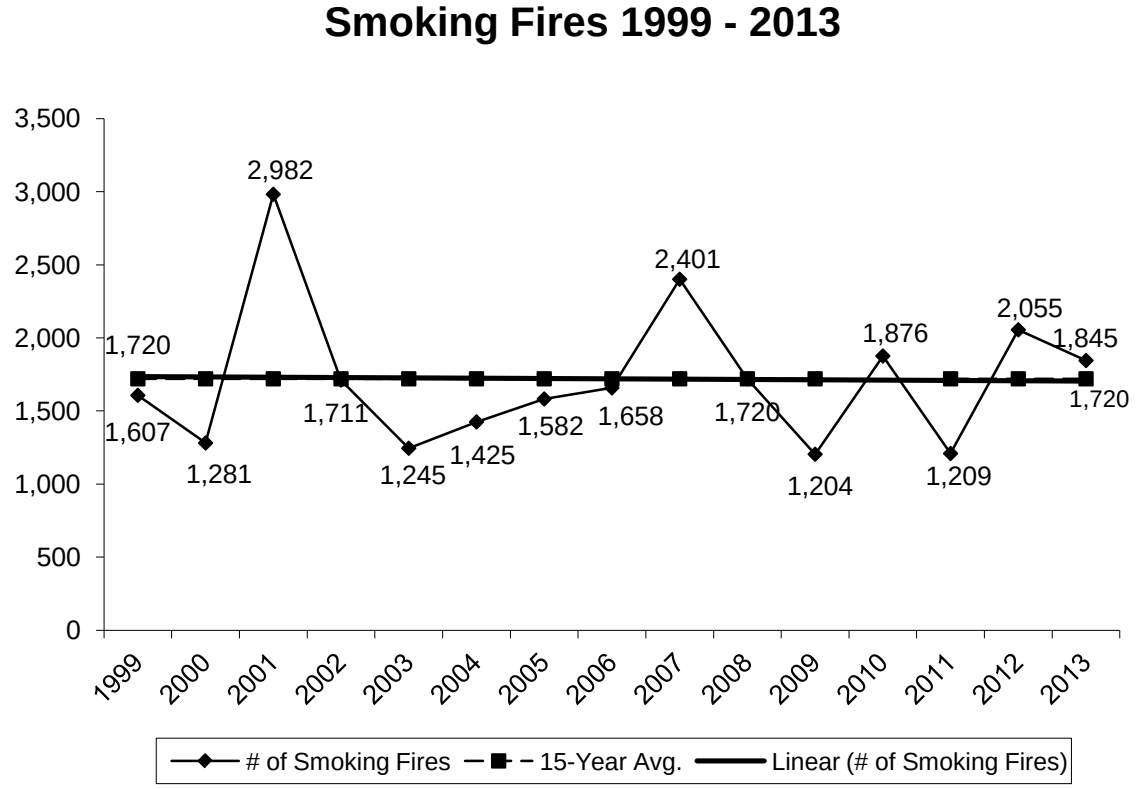
Fires Caused by Smoking

Smoking Caused 6% of Fires and 11% of Deaths
During 2013, 1,845, or 6%, of the 29,828 reported fire incidents were caused by the improper use or disposal of smoking materials. These 1,845 fires caused five, or 11%, of the 44 civilian deaths and five, or 18%, of the 28 structure fire deaths, 52 civilian injuries, 39 fire service injuries, and an estimated dollar loss of $17.9 million. The average dollar loss per fire was $9,794. The number of smoking fires decreased by 210, or 10%, from 2,055 in 2012.

518 Structure Fires – Down 12% From 2012
The 1,845 fires caused by smoking included: 518 structure fires, down 73 from 591, or 10%, in 2012; 29 motor vehicle fires, down three from 32 in 2012; 1,022 tree, brush or grass fires, down 102 from 1,124 in 2012; 89 trash or rubbish fires, down 10 from 99 in 2012; 106 special outside fires, down 16 from 122 in 2012; 10 cultivated vegetation or crop fires, down one from 11 in 2012, and 71 fires that could not be classified further, down five from 76 in 2012.

Total Smoking Fires Down 10%
The total number of fires caused by smoking has decreased by 210, or 10%, from 2012. The largest decrease came in brush fires, with a decrease of 102, or 9%, from the 1,124 reported in 2012. Structure fires also saw a significant decrease in fires started by smoking materials. They decreased by 71, or 12%, from the 587 reported in 2012.

Over the last 15-year period, smoking fires have had a slightly increasing trend. 2013 had the fifth highest number of reported smoking fires in the past 15 years. The 2009 number is the lowest number of recorded smoking fires on record since 1986 and is far below the 15-year average or 1,720 smoking fires. In 2007, 2010 and 2012 there were sudden spikes in the number of smoking-related fires, predominantly outdoor brush fires caused by smoking materials. In those years the weather conditions were dry and made it easier for brush type fires to get started as we can see in the dramatic increases statewide in brush fires.



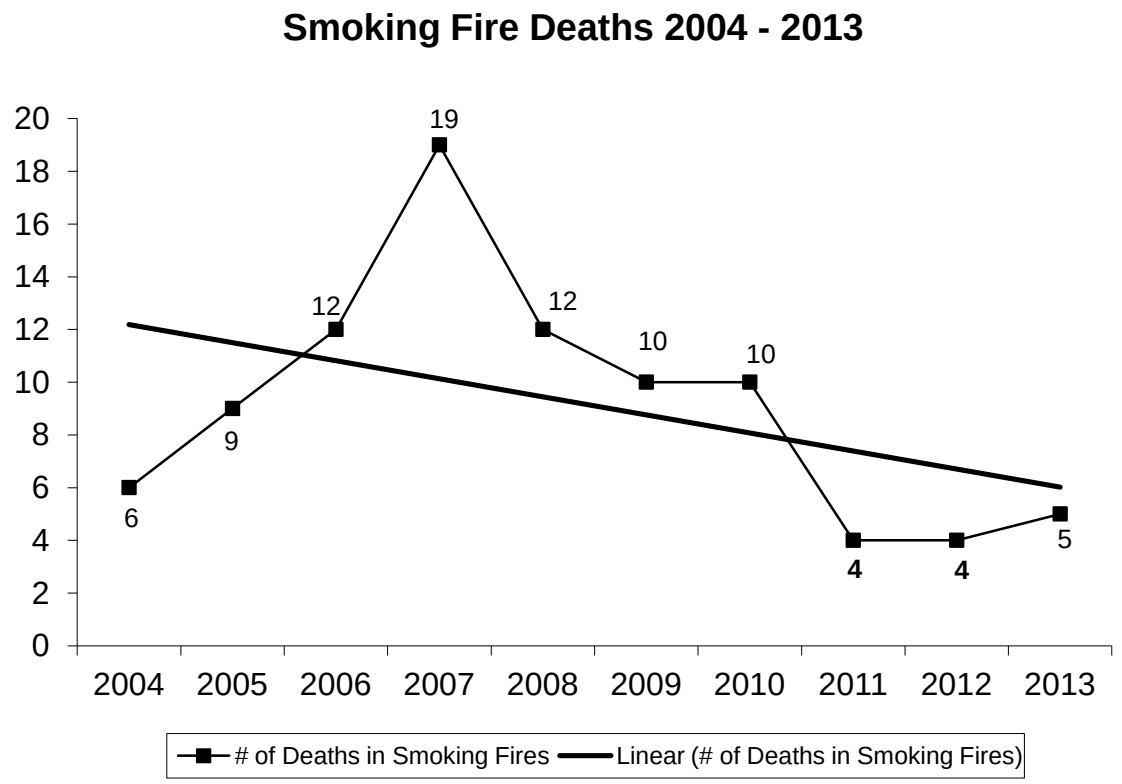
84% of All Smoking Building Fires Occurred in Residences
Eighty-four percent (84%) of all smoking-related building fires occurred in residential occupancies. The occupancies with the next highest percentages of smoking-related structure fires in Massachusetts in 2013 were businesses at 6%, public assembly facilities at 3%, and storage facilities at 2%.

There are statutes that prohibit smoking in public places. These laws have forced smokers to smoke outside where they may not be as careful disposing of their cigarettes or cigars.

Smoking Tied as Second Leading Cause of Fire Deaths - Elders at Risk
The 518 smoking-related structure fires caused all five of the smoking-related fire deaths, 45 civilian injuries, 38 fire service injuries, an estimated dollar loss of $17.9 million and an average dollar loss of $34,157. Smoking fires accounted for 15% of the fatal structure fires and 18% of structure fire deaths in 2013. The unsafe and improper use of smoking materials caused 19% of residential structure fire deaths and 20% of fatal residential structure fires. Three (3), or 20%, of the 15 home fire deaths to seniors (over 65) were caused by smoking, compared with one in 2012 and none in 2011.

2013 Smoking Fire Deaths
In 2013, five people died in smoking-related fires of all types. These five deaths are 45% below the 10-year average of nine smoking-related fire deaths per year since 2003. After a high-water mark of 18 deaths in 2003, smoking-related fire deaths dropped drastically, except for the sharp spike of 19 deaths in 2007. In 2004, six people died in smoking fires;

in 2005, nine people died; in 2006 and 2008, 12 people died in smoking-related fires of all types, and in 2009 and 2010 there were 10 smoking-related fire deaths. In 2011 and 2012 there were four smoking-related fire deaths, the lowest recorded number on record.



Working Detectors in 2 of 5 Fatal Smoking Fires
Two (2) of the five smoking fatal fires occurred in a structure where smoke detectors were present and operated. One (1) occurred in a fire where the detector failed to operate; and the other two fires occurred in building where it was undetermined if the detector operated. Four (4) of these victims were intimately involved with the ignition; and the other victim, while not in the area of origin when the fire began, was involved in starting it. The smoke detectors helped prevent these fires from claiming any additional lives.

For a listing of all the smoking-related fire deaths in 2013, please refer to the *2013 Massachusetts Fire Deaths* section of this report.

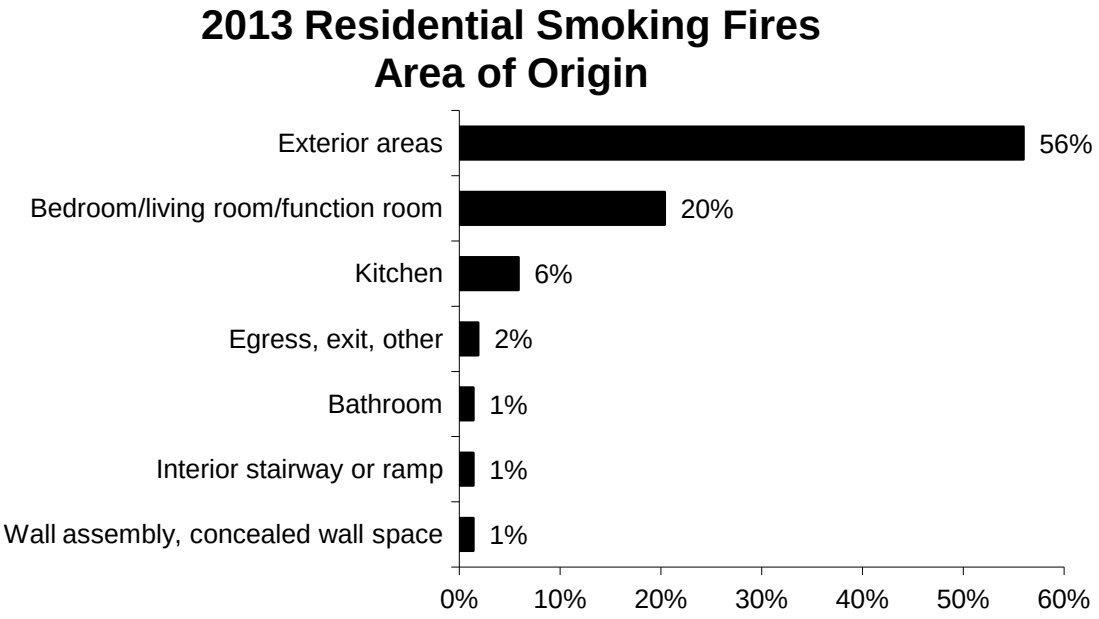
Smoking on Oxygen
The use of oxygen while smoking caused one of the smoking-related structure fire deaths in 2013. This death occurred in a fire in a Westfield apartment building.

1/3 of Building Smoking Fires Occurred had Operating Detectors
Of the 508 smoking-related building fires, 427, or 84%, occurred in residences. Smoke detectors operated in 33% of the smoking-related residential structure fires. Detectors were present but failed to operate in 8% of these incidents. No smoke detectors were

present in 11% of these incidents. In 16%, the fire was too small to activate the smoke detector. It was undetermined if the detectors were present or if they operated in 32% of these fires.

Over 1/2 of Smoking Fires in the Home Start in the Exterior
It is interesting to note that over half (56%) of all residential smoking fires started outside the home, not inside. Historically the bedroom and living room are where most smoking fires have started. As more people smoke outside the home in areas like balconies, exterior stairways or enclosed porches, we see more smoking fires starting in these areas. The number of exterior areas of origin in residential smoking fires continued to this trend in 2013. These exterior area of origins accounted for 284, or 56%, of all residential smoking fires. Twenty-two percent (22%) occurred on exterior balconies or porches; exterior stairways accounted for 9%; unclassified outside areas and exterior wall surfaces each accounted for 7%; courtyard, patio or terraces accounted for 4%; and the remaining outside areas comprised 4% of the areas of origin for residential smoking fires in 2013.

Twenty percent (20%) of residential smoking fires occurred in bedrooms, living rooms or function rooms; 13% occurred in bedrooms; 6% in living rooms and 1% in unclassified function rooms. Kitchens accounted for 6%, and egresses or exits accounted for 2% of these fires. Bathrooms, interior stairways and concealed wall spaces were all the area of origin in 1% of these fires.



Fire Standard Compliant Cigarettes
In January 2007, the Fire Standard Compliant (FSC) Cigarette legislation or 'fire safe cigarette' law, making it mandatory for cigarette manufacturers to start selling only the fire standard compliant type of cigarettes in Massachusetts, took effect. There is no federal standard for self-extinguishing cigarettes despite nearly 20 years of proposed legislation. On January 1, 2012, every state had implemented their own state law banning the sale of ordinary cigarettes.

Fire safe cigarettes meet an established cigarette fire safety performance standard based on ASTM E2187, Standard Test Method for Measuring the Ignition Strength of Cigarettes. It requires that no more than 25% of 40 cigarettes tested burn their full length when placed on 10 layers of standard filter paper. These cigarettes are designed to be less likely to ignite upholstered furniture and mattresses, historically the item first ignited in most fatal smoking fires.

Smoking Fires Ignite Exterior Sidewall Covering & Rubbish

The most common item first ignited by smoking fires in the home were exterior sidewall coverings, accounting for 12% of these smoking fires. The second leading cause was rubbish, trash or waste, accounting for 9% of residential smoking fires. Many more of these fires go unreported because of the confined indoor trash fires where the Fire Module does not have to be completed and therefore no causal information is collected. Also, the new fire standard cigarettes may have little or no impact on trash fires, as they are not designed to resist igniting these items. Twelve percent (12%) of smoking fires ignited upholstered furniture and bedding. Fire standard compliant cigarettes cannot prevent every cigarette from causing a fire, and not every smoking fire is caused by a cigarette.

Furniture Should Meet CA Flammability Standard

Another safety aspect to think about is purchasing only upholstered furniture that meets the California flammability standard, because many smoking-related fires start by igniting upholstery.

Smokers Should Always Use Non-Flammable Ashtrays or Containers

Until they can quit, smokers should use deep ashtrays, store ashes in metal containers and never smoke in bed. Families should consider banning smoking inside the house for health and fire safety reasons. Children of smokers often have easy access to matches and lighters. Adults must keep these tools out of the reach of small children. If smokers are going to smoke on an exterior balcony, deck or porch, they should also be using an appropriate metal or other non-combustible container to collect the ashes and properly extinguish their smoking materials. In 2013, 10% of these fires ignited organic materials or light vegetation, mostly potted plants on balconies or porches or mulch used for landscaping.

Think of Flame Retardant Sleepwear for Adults

State and federal regulations require most children's sleepwear to be flame-retardant. However, no such requirements apply to adult clothing. Physically disabled and elderly people may not be able to easily 'Stop, Drop and Roll' if their clothing ignites.

Everyone Needs a Working Smoke Detector at Home

While everyone needs at least one working smoke detector on every level of their home, this is even more important for smokers and their families because of the high risk of fire death. Placing a detector inside every bedroom increases the probability that if a fire occurs, residents will wake up in time to escape. A cigarette accidentally left on a sofa

places the smoker and everyone else in the building at risk. A smoke detector's warning may enable a smoker to live long enough to quit.

Never Smoke Where Oxygen is in Use
No smoking should ever be permitted in a home where oxygen is in use. The oxygen-enriched environment increases the speed at which the fire will burn once it starts. "Most materials will ignite at considerably lower temperatures in oxygen-enriched environments than in air, and once ignited, combustion rates are greater in oxygen-enriched environments."[45]

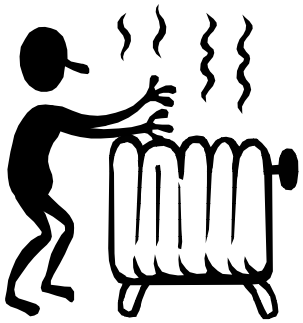
Oxygen can saturate clothing, rugs, upholstery, and facial hair thus increasing the fire danger even when the home oxygen system is "turned off".

Illegal to Throw Cigarettes Out Car Window
The improper disposal of smoking materials has been a major problem for the fire service for years. Massachusetts General Law Chapter 148 Section 54 states, "Whoever drops or throws from any vehicle while the same is upon a public or private way running along or near forest land or open fields, or, except as permitted by law, drops, throws, deposits or otherwise places in or upon forest land, any lighted cigarette, cigar, match, live ashes or other flaming or glowing substance, or any substance or thing which in and of itself is likely to cause a fire, shall be punished by a fine of not more than one hundred dollars or by imprisonment for not more than thirty days."

Mulch Regulation Implemented in 2012
Since more people are being forced to smoke in outside areas of their homes and other buildings, cigarettes are finding their way into adjacent landscaped areas; most of which are filled with mulch, a combustible material. On September 1, 2012 a new regulation on mulch safety took effect in the Commonwealth that prohibits the new application of mulch within 18 inches around combustible exteriors of buildings (such as wood or vinyl but not brick or concrete). Residential buildings with less than six units are exempted from this regulation, but all homeowners may also wish to adopt this safety practice. It is also beneficial to note that FSC cigarettes were not designed to prevent igniting mulch-type materials.

[45] *Fire Protection Handbook*, 19th edition, 2003, National Fire Protection Association, pg. 8-134, Quincy, MA.

Heating Equipment Fires



2,093 Fires, 4 Civilian Deaths & 21 Civilian Injuries
Massachusetts fire departments reported that some form of heating equipment was involved in 2,093, or 12%, of the 17,276 building fires in 2013. These heating equipment fires caused four civilian deaths, 21 civilian injuries, 18 fire service injuries, and an estimated dollar loss of $13.5 million. The average loss per fire was $6,432. This is less than a 1% decrease from the 2,087 fires reported in 2012.

86% of All Heating Fires Were Confined Fires
In 2013, 86% of heating fires were confined to the container of origin. One thousand and six (1,006), or 48%, of all heating related building fires in Massachusetts were coded as 'fuel burner/boiler malfunction, fire contained'. Seven hundred and ninety-five (795), or 38%, were determined to be chimney or flue fires, confined to the chimney or flue.

The number of contained heating fires fell in 2013. Confined heating equipment fires decreased by 44 incidents, or 2%, from the 1,845 reported in 2012.

Types of Heating Equipment
Only one type of equipment per fire incident may be reported to MFIRS. Consequently, the totals for specific types of equipment should, in many cases, be considered underestimates. For example, sparks from a wood stove may ignite a fire in the chimney. The recorded equipment involved might be either the chimney or the wood stove, but not both. When a fire results from an extension cord overloaded by the demands of a portable heater, the extension cord might be recorded instead of the heater.

The following table shows the number of fires caused by each of the leading types of heating equipment, the percentage of heating equipment fires for each type of equipment, the number of civilian and fire service deaths and injuries, and the estimated dollar loss for each type of heating equipment.

HEATING EQUIPMENT FIRES

Equipment	# of Fires	% of Heat Eq.	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss
Central heating units	1,027	49%	1	2	0	0	$1,041,079
Confined	*1,006*	*48%*	*1*	*1*	*0*	*0*	*650,829*
Furnace, central heating unit	*13*	*1%*	*0*	*0*	*0*	*0*	*189,250*
Boiler (power, process, heating)	*8*	*0.4%*	*0*	*1*	*0*	*0*	*201,000*
Chimney, flue	830	40%	4	1	0	0	2,993,690
Confined	*795*	*38%*	*1*	*1*	*0*	*0*	*283,157*
Fireplace, chimney, other	*9*	*0.4%*	*1*	*0*	*0*	*0*	*1,251,933*
Chimney connector, vent connect.	*4*	*032%*	*0*	*0*	*0*	*0*	*90,000*
Chimney, brick, stone, masonry	*13*	*1%*	*0*	*1*	*0*	*0*	*931,500*
Chimney, metal, incl. stovepipe	*9*	*0.4%*	*2*	*0*	*0*	*0*	*437,100*
Fixed, local heating	102	5%	3	9	0	4	3,305,802
Stove, heating	*85*	*4%*	*3*	*9*	*0*	*4*	*3,053,200*
Furnace, local heat. unit, built-in	*17*	*1%*	*0*	*0*	*0*	*0*	*252,602*
Space heaters	33	2%	1	5	0	0	1,060,816
Portable space heaters	*14*	*1%*	*0*	*4*	*0*	*0*	*959,120*
Fireplace	24	1%	6	0	0	0	2,805,150
Fireplace, masonry	*10*	*0.5%*	*2*	*0*	*0*	*0*	*732,200*
Fireplace insert/stove	*1*	*0.05%*	*0*	*0*	*0*	*0*	*50,000*
Fireplace factory built	*13*	*1%*	*4*	*0*	*0*	*0*	*2,022,950*
Water heater	14	1%	0	1	0	0	28,350
Heating, vent. & air cond., other	47	2%	2	3	0	0	735,001
All other reported equipment	16	1%	1	0	0	0	1,492,005
Total	**2,093**	**100%**	**18**	**21**	**0**	**4**	**13,461,893**

Central Heating Units

1,027 Fires & $1 Million in Damages

Central heating units[46] were involved in 1,027 structure fires in 2013. These fires caused two civilian injuries, one fire service injury, and an estimated dollar loss of $1 million. The average loss per fire was $1,014. This is an 8% decrease from the 1,110 fires reported the previous year. One thousand and six (1,006) of these fires involving central heating units were confined fires.

8% Caused by Mechanical Failures

Of the 131 central heating unit fires where *Factors Contributing to Ignition* was completed, 8% were caused by mechanical failures or malfunctions; 7% were caused by automatic control failures; 2% of these fires were caused by combustibles being placed

[46] These include all structure fires with Equipment Involved = 132: Furnace & 133: Boiler, central heating unit. And all Incident Type = 116 Fuel burner/boiler malfunction, fire confined that did not complete a Fire Module.

too close to the heating unit; 1% were caused by a failure to clean; 1% were from an arc or spark; and 1% were caused by unclassified electrical failures or malfunctions.

Forty-four (44), or 44%, of the 102 central heating unit fires where the power source was known were caused by liquid-fueled equipment. These fires caused an estimated dollar loss of $219,300. The average loss per fire was $4,984.

Twenty-six (26), or 26%, of these fires were caused by electrically powered equipment[47]. These 26 fires caused $9,900 in estimated damages. Twenty-one (21), or 21%, of the central heating unit fires were caused by gas-fueled equipment causing one civilian injury and $126,052 in estimated damages. Three (3), or 3%, were caused by solid-fueled equipment causing $9,000 in estimated damages.

Furnaces Should Be Cleaned and Checked Annually

- Homeowners should have furnaces cleaned and checked annually to ensure that they are working well.
- Combustible materials such as trash or supplies should never be stored near heating equipment.
- Keep a 3-foot clear space around the furnace.
- Only licensed trades people may install oil, gas, or electric heating units.
- Regulations about oil burners may be found in 527 CMR 4.

Chimney Fires

830 Fires Caused 4 Fire Service Injuries & $3 Million in Damages

Eight hundred and thirty (830) building fires involved chimneys[48], gas vent flues, chimney connectors or vent connectors. These 830 fires caused one civilian injury, four fire service injuries, and an estimated dollar loss of $3 million. The average dollar loss per fire was $3,607. This is a 5% increase from the 792 fires reported the previous year.

Seven hundred and ninety-five (795) of these chimney or flue fires were confined to the chimney or flue. In 630 of these fires the *Equipment Involved in Ignition* either wasn't reported or were reported using only a Basic Module.

Twenty percent (20%) of the 204 fires where *Factors Contributing to Ignition* was reported were caused by a failure to clean the creosote buildup, and 6% were caused by installation deficiencies. Three (3%) were caused when combustibles were too close to the chimney or flue and another 3% were from a misuse use of the material or product.

[47] Version 5 has a data field called Equipment Power Source that describes the power source of the equipment involved in ignition.

[48] These include all incidents with an Incident Type = 114: Chimney or flue fire, confined to the chimney or flue, and all other structure fires with Equipment Involved = 120 or between 125 and 127.

Have Chimneys Cleaned Annually to Remove Creosote
Creosote is a black, tar-like by-product of fire. It can accumulate in a chimney and cause a fire. Chimneys should be cleaned at the start of each heating season and checked monthly for soot build-up. They should also be checked for loose mortar. Keep the temperature in the recommended range when using wood or coal stoves. Use chimney guards to prevent animals from nesting in your chimney. Have the chimney inspected by a professional after a fire before using your chimney again.

Fixed Heater Fires

102 Fires, 4 Civilian Fire Deaths, 9 Civilian Injuries & $3.3 in Estimated Losses
One hundred and two (102) fixed heater structure fires caused four civilian deaths, nine civilian injuries, three fire service injuries and an estimated dollar loss of $3.3 million. The average dollar loss per fire was $32,410. This is a 7% increase from the 95 fires reported the previous year.

Fixed heaters include stationary local units such as wood stoves and in-room gas heaters. A central heating unit heats the entire building or apartment, whereas a fixed local heating unit is set in a specific room to heat just that room or immediate area.

16% Caused by Being Left Unattended
Combustibles being too close to the heat source caused 10% of these fires. Seven percent (7%) of fixed heater fires were caused by the equipment being left unattended. The heaters being accidentally turned on and not turned off and a failure to clean each caused 5% of these fires in 2013.

Electrical powered fixed heaters caused 44, or 44%, of these fires and were responsible for five civilian injuries, one fire service injury and a dollar loss of $898,650. Twenty-nine (29), or 29%, were caused by gas-fueled fixed heaters and they were responsible for one civilian injury and a dollar loss of $434,500. Twenty-three (23), or 23%, of fixed heater fire incidents in 2013 involved solid fueled fixed heaters, 22 of which were wood fueled. These fires caused all four civilian heating fire deaths, three civilian injuries, two fire service injuries and an estimated dollar loss of $1.8 million.

Install Wood Stoves According to Building Code Standards
A homeowner must obtain a building permit prior to installing a wood, pellet or coal stove and the installation must be inspected upon completion. In general, the stove should be at least three feet away from walls, ceilings and furnishings. If the flue does not draw properly, deadly levels of carbon monoxide may accumulate in the home.

- Keep the temperature within the manufacturer's suggested range. Wood and coal stoves should be operated at moderate heat. If the fire is too low, creosote may accumulate in the chimney and eventually cause a fire. If the fire is too hot, nearby combustibles or creosote in the chimney could ignite.

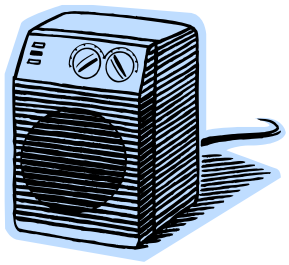
- Only burn fuels intended for use in these stoves. Other items may cause overheating and the release of toxic gases. Never use gasoline or flammable liquids to stoke the fire — doing so could cause a flash fire or explosion.
- Install and regularly test smoke and carbon monoxide detectors.
- Have your chimney cleaned and inspected for creosote build-up before each heating season, and check it at least once a month during the season.
- Place ashes in a covered metal container until they are completely cool. Store them outdoors, away from the house, porch or other outside buildings. Hot ashes may stay "live" for 24 hours or longer.

Space Heater Fires

33 Fires, 5 Civilian Injuries & $1 Million in Damages
Space heaters of all kinds accounted for 33 fires and caused five civilian injuries, one fire service injury, and an estimated dollar loss of $1 million. The average dollar loss per fire was $32,146. This is a 27% increase from the 26 fires reported the previous year.

Portable Space Heater Fires

14 Fires, 4 Civilian Injuries & $1 Million in Losses
Fourteen (14) portable space heater[49] fires caused four civilian injuries, one fire service injury and an estimated dollar loss of $1 million. The average dollar loss per fire was $32,146. This is a 7% decrease from the 15 fires reported the previous year. The heater being too close to combustibles caused 29% of the space heater fires in 2013.



Twelve (12), or 86%, of the portable heaters involved in fires were electric; and two, or 14%, were gas fueled space heaters.

History has taught us that the larger heating fire problem is from portable space heater fires. Though not many in number, they usually result in a high number of deaths. During the past five years (2009– 2013), there have been 60 reported residential fires started by portable space heaters with no civilian deaths, 14 civilian injuries, nine fire service injuries and $3.2 million in estimated losses resulting from these fires. From 2004 through 2013 there has been one fire death for every nine space heater fires.

If you must use a space heater for heat, use it as safely as possible.

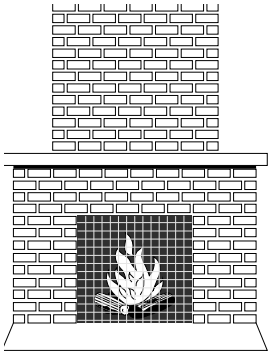
- When buying a heater, look for one that has been tested and labeled by a nationally recognized testing company.

[49] These include all structure fires with Equipment Involved = Between 141 and 143; and Equipment Portability = 1: Portable

- Keep the heater 3 feet away from drapes, furniture or other things that can burn. Place it on a level surface away from areas where a person or a pet might bump it and knock it over.
- If you must use an extension cord, make sure it is a heavy-duty cord marked with a power rating as least as high as that on the label of the heater itself.
- Never leave a space heater unattended or running while you sleep.
- Keep electric heaters away from water. Never use them near a sink or in the bathroom.
- Do not use space heaters to thaw pipes. They were not designed for this task. Space heaters must be kept at least 3 feet away from any combustibles including walls and wall coverings.

According to MGL Chapter 148, Section 5A, 25A and 25B, the sale and use of liquid-fired unvented space heaters using kerosene, range oil, number one fuel oil, or any oil as fuel are illegal in Massachusetts. The use of unvented space heaters using natural gas or propane gas as fuel is acceptable only if they meet the requirements of 780 CMR 30.00.

Fires Caused by Fireplaces



24 Fires, 6 Fire Service Injuries & 2.8 Million in Damages
Twenty-four (24) fireplaces[50] were involved in Massachusetts structure fires in 2013. These 24 fires caused six fire service injuries and an estimated dollar loss of $2.8 million. The average dollar loss per fire was $116,881. This is a 41% increase from the 17 fires reported the previous year.

Twenty-five percent (25%) were caused by combustibles being placed too close to the fireplace; and 17% were caused by construction deficiencies.

Nineteen (19), or 79%, of fireplaces involved in fires were solid-fueled. Four (4), or 17%, of these fireplaces were gas fueled; and one or 4% was electrically powered.

Fires Caused by Hot Water Heaters

14 Fires Caused 1 Civilian Injury & $28,350 in Damages
Fourteen (14) structure fires were caused by hot water heaters[51] in 2013. These 14 fires caused one civilian injury and an estimated dollar loss of $28,350. The average dollar loss per fire was $2,025. This is a decrease of eight or 36% from the previous year. Unclassified electrical failures and mechanical failures each caused 14% of these fires.

[50] These include all structure fires with Equipment Involved = Between 121 and 123.
[51] These include all structure fires with Equipment Involved = 151: Water Heater.

Combustible being placed too close to the water heater and overloaded equipment each caused 7% of these fires. Arcing started 43% of water heater fires. Twenty-nine percent (29%) were started by the water heater itself; 7% were started by sparks, embers or flames from the water heater; and another 7% were started by an unclassified open flame.

Sixty-four percent (64%) were identified as electric fueled water heaters and 36% were identified as gas powered water heaters.

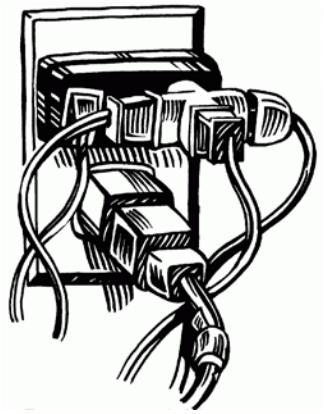
Fires Caused by HVAC, Other

53 Fires, 3 Civilian Injuries & 2 Fire Service Injuries
Fifty-three (53) structure fires were caused by unclassified heating, ventilation and air conditioning equipment (HVAC, other)[52] in 2013. These 53 fires caused three civilian injuries, two fire service injuries and an estimated dollar loss of $737,501. The average dollar loss per fire was $13,915. This is a 5% decrease from the 56 fires reported the previous year.

Combustibles placed too close to the equipment and unclassified mechanical failures were each responsible for 11% of these fires in 2013.

Sixty-nine percent (69%) of the 53 fires involving unclassified heating, ventilating or air conditioning equipment were identified as electric powered. Nineteen percent (19%) were identified as gas-fueled equipment; 8% were powered by liquid fuels; and 4% were identified as solid-fueled equipment.

Electrical Fires



705 Electrical Fires Caused 5 Civilian Deaths
Local fire departments reported that there were 705 structure fires caused by electrical problems in Massachusetts in 2013. These fires caused five civilian deaths, 32 civilian injuries, 49 fire service injuries and an estimated dollar loss of $40.8 million, accounting for 17% of the total dollar loss to fire in 2013. The average loss per fire was $57,857.

Electrical Fires Were the 2nd Leading Cause of Fire Deaths
Electrical fires were the second leading cause of structure fire deaths in 2013. Four (4) fatal electrical fires, or 20%, of fatal structure fires caused five, or 19%, of structure fire deaths in 2013. In 2011 electrical fires were the leading

[52] These include all structure fires with Equipment Involved = 100: Heating, ventilating & air conditioning, other.

cause of fire deaths, causing 14, or 33%, of the structure fire deaths and in 2012 they tied as the second leading cause of fire deaths.

The criteria to qualify for an electrical equipment fire includes all fires caused by electrical problems or malfunctions. Specifically, it is to have *Heat Source* – arcing or - *Factors Contributing to Ignition* – equipment overloaded or – electrical failure malfunction or to have *Equipment Involved in Ignition* in the 200 series – electrical distribution, lighting and power transfer equipment.

Unspecified Electrical Failure Responsible for Over 1/4 of Electrical Fires[53]
Over one-quarter of electrical fires were caused by unspecified electrical failure. One hundred and ninety (190), or 27%, of electrical fires were caused by an unclassified electrical failure or malfunction. One hundred and five (105), or 15%, were caused by an unspecified short circuit arc. Seven percent (7%), or 45, of these fires had a short circuit arc from defective or worn insulation. Mechanical failures caused 25, or 4%, of these electrical fires. The heat source being too close to combustibles caused 21, or 3%, of these fires. Twenty (20), or 3%, of electrical fires were caused by an arc from a faulty contact or broken conductor. An arc or spark from operating equipment caused 19, or 3%, of these fires. Fourteen (14), or 2%, of electrical fires were caused by a short circuit arc from mechanical damage in 2013. Two percent (2%), or 14, of these fires were caused by overloaded equipment.

Electrical Equipment Fires

Six hundred and forty-nine (649), or 91%, of the 705 electrical fires reported the type of equipment involved in ignition. These 649 fires caused five civilian deaths, 30 civilian injuries, 41 fire service injuries and an estimated dollar loss of $31 million. The average dollar loss per fire was $47,829.

271 Electrical Service, Wiring, Meter Boxes & Circuit Breaker Fires
The most common reported equipment involved in the ignition of electrical fires were electrical service, outside utility wires, branch circuits consisting of wiring inside a building, meter boxes, electrical panels and circuit breakers, accounting for 271, or 42%, of the fires. These fires caused one civilian death, 10 civilian injuries, 22 fire service injuries and an estimated dollar loss of $17 million. The average dollar loss per electrical wiring fire was $62,608.

[53] *Factors Contributing to Ignition* is one of the fields in version 5 that allows for multiple codes. Two factors contributing to ignition may be coded. For example, in the case of a malfunctioning electrical heater, we can capture not only the electrical malfunction, but also a contributing factor such as: was the heater too close to combustibles; did the automatic control fail; was it knocked over; was it worn out; or was the equipment overloaded. This field also is not a mandatory field, although fire departments are strongly encouraged to complete it, should it apply to the incident. Because of these factors, the percentages may not add up to 100%.

Lamp, Lighting Fixtures Involved in 94 Fires
Lamps and other lighting fixtures were involved in 94, or 14%, of electrical equipment fires where equipment involved in ignition was reported. These fires caused one civilian death, four civilian injuries, one fire service injury and an estimated dollar loss of $1.6 million. The average loss per fire was $16,736.

Ventilation & Air Conditioners Caused 62 Fires
Sixty-two (62), or 10%, of the structure fires involving known electrical equipment were caused by air conditioning or ventilation units. These fires caused five civilian injuries, three fire service injuries and an estimated dollar loss of $1.8 million. The average dollar loss per fire was $29,688.

55 Fires Involving Kitchen & Cooking Equipment
Fifty-five (55) electrical equipment fires involving kitchen or cooking equipment caused two fire service injuries and an estimated dollar loss of $536,100. These fires accounted for 8% of the structure fires involving electrical equipment when equipment involved in ignition was reported. The average dollar loss per fire was $9,747

Transformer, Generator, Battery or Chargers Caused 3 Fires
Transformers, generators, batteries or chargers were involved in 34, or 5%, of the electrical fires where equipment involved in ignition was reported. These fires caused three civilian injuries, two fire service injuries and an estimated dollar loss of $2.4 million. The average loss per fire was $71,640.

Cords or Plugs Caused 30 Fires
Thirty (30), or 4%, of the structure fires where electrical equipment was involved were caused by cords or plugs. These fires caused three civilian deaths, six civilian injuries, two fire service injuries and an estimated dollar loss of $5.1 million. The average dollar loss per fire was $169,722.

Heating Equipment Caused 28 Fires
Twenty-eight (28), or 4%, of the structure fires involving known electrical equipment were caused by various types of heating equipment. These electrical fires involving heating equipment caused an estimated dollar loss of $141,250. The average dollar loss per fire was $5,045.

Household Appliances (Non-Cooking) Caused 23 Fires
Non-cooking household appliances such as clothes dryers, washing machines and trash compactors caused 23, or 4%, of the 649 electrical structure fires where equipment involved in ignition was reported. These 23 fires caused one civilian injury, one fire service injury and an estimated $681,602 in damages. The average dollar loss was $29,635.

19 Fires Involving Unspecified Electrical Distribution Equipment
Nineteen (19) electrical equipment fires involving unspecified electrical distribution equipment caused three fire service injuries and an estimated dollar loss of $570,501.

These fires accounted for 3% of the building fires involving reported electrical equipment. The average dollar loss per fire was $30,026.

12 Fires Involving Electronic & Other Electrical Equipment
Twelve (12) electrical equipment fires involving electronic and other electrical equipment caused one civilian injury, four fire service injuries and an estimated dollar loss of $432,725. These fires accounted for 2% of the structure fires involving reported electrical equipment. The average dollar loss per fire was $36,060.

9 Fires Involving Shop Tools & Industrial Equipment
Nine (9) electrical fires involving shop tools or industrial equipment caused one fire service injury and an estimated dollar loss of $305,500. These fires accounted for 1% of the structure fires involving electrical equipment. The average dollar loss per fire was $33,944.

7 Fires Involving Commercial & Medical Equipment
Seven (7) electrical fires involving commercial or medical equipment caused an estimated dollar loss of $446,101. These fires accounted for 1% of the structure fires involving electrical equipment. The average dollar loss per fire was $63,729.

5 Fires Involving Decorative Lighting & Signs
Five (5) electrical fires involving decorative or landscaping lights or electric signs caused an estimated dollar loss of $19,350. These fires accounted for 1% of the structure fires involving electrical equipment. The average dollar loss per fire was $3,870.

56 Unspecified Electrical Equipment Fires Caused 1 Civilian Death
There were 56 electrical fires where the piece of equipment involved in ignition was unknown or not reported. These 56 fires caused one civilian death, two civilian injuries, eight fire service injuries and an estimated dollar loss of $9.7 million. The average dollar loss per fire was $174,071.

Large Loss Electrical Fire
There were three large loss ($1 million+) electrical fires in 2013. These fires caused an estimated $10.3 million in damages, accounting for 25% of the total dollar loss from electrical structure fires in 2013. There were also 96 fires with estimated damages between $100,000 and $999,999.

- On February 20, 2013, at 9:18 a.m., the Boston Fire Department was called to an electrical fire in a five-unit apartment building. The fire originated from an unspecified short-circuit above the fourth floor ceiling. There were no injuries associated with this fire. Detectors were present and alerted the occupants. The building was not sprinklered. Damages were estimated to be $5.3 million.

Electrical Fire with Most Fire Service Injuries
- On Christmas morning, December 25, 2013, at 6:27 a.m., the Malden Fire Department was called to an electrical fire in a two-family home. The fire was caused

by arcing in the ceiling and floor assembly. Four (4) firefighters were injured at this fire. Detectors were present and alerted the occupants. Sprinklers were not present. Damages from this fire were not estimated.

3/4 of Electrical Fires Occurred in Residential Occupancies

Three-quarters of electrical fires occurred in residential occupancies. Of the 705 electrical fires, 530, or 75%, occurred in residential occupancies. Sixty (60), or 9%, occurred in mercantile or business properties such as offices, banks, retail stores or markets. Public assembly buildings like restaurants, libraries and courthouses accounted for 29, or 4%, of these fires. Storage properties accounted for 28, or 4%, of these fires. Institutional buildings such as hospitals and asylums had 20, or 3%, of the electrical fires occur on their premises. Educational properties accounted for 14, or 2%, of Massachusetts' electrical fires in 2013. Manufacturing or processing facilities had 10, or 1%, of these incidents. Eight (8), or 1%, of electrical fires occurred in special or outside properties. Six (6), or 1%, of Massachusetts' electrical fires occurred in basic industry properties such as laboratories, communications centers, electrical distribution sites and utility and distribution centers.

19% of Electrical Fires Began in Concealed Spaces

One hundred and thirty-seven (137), or 19%, of electrical fires began in concealed spaces; 7% started in the ceiling and floor assembly or crawl space between stories; 6% started in a wall assembly or concealed wall space; 4% began in substructure areas or crawl spaces; and 3% started in attics or crawl spaces above the top story. One hundred and twenty-four (124), or 18%, of the 705 electrical fires occurred in the bedroom or living room; 14% began in the bedroom and 4% started in the living room. Seventy-nine (79), or 11%, originated in the kitchen. The bathroom accounted for 7%, or 51, of the electrical fires in Massachusetts in 2013.

Electrical Wiring Was the Item First Ignited in 37% of Electrical Fires

Electrical wiring or cable insulation was the item first ignited in 260, or 37%, of electrical fires. This includes fixed wiring, wiring inside electronic items, extension cords and appliance cords. In 80, or 11%, of these fires a structural member or framing was the first item ignited. Unclassified structural components were involved in 33, or 5%, of these fires. Appliance housings or casings were involved in 27, or 4%, of these fires. Exterior sidewall coverings were the item first ignited in 26, or 4%, of electrical fires in 2013. Thermal or acoustical insulation within a wall, partition or ceiling (20) and interior ceiling coverings (19) were each the items first ignited in 3% of electrical fires in 2013.

Watch For Warning Signs

People should watch for warning signs of electrical problems. These include:

- Fuses blowing or circuit breakers tripping frequently.
- Unusually warm or faulty outlets or switches.
- A vague smell of something burning.
- A sizzling sound in the wall.

Any of these signs may indicate a potential problem. Contact a licensed electrician if you notice any of these signs, or contact the local fire department. Many departments now have new technologies such as thermal imaging cameras that can 'see' heat inside walls to detect potential problems before they expand and extend to other parts of the building.

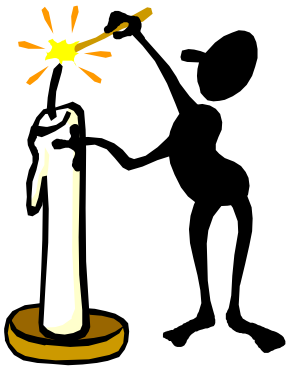
Fuses and circuit breakers are safety devices. They blow or trip when the amount of current cannot safely travel through the wires, which is why frequent blowing or tripping is a warning sign. *Trying to bypass the fuse or circuit breaker protection is an invitation to danger.*

Electrical Systems Pose Unseen Dangers
Just as all systems need maintenance and inspection, so does electrical wiring. As switches, receptacles and connections age, heat is generated and the risk of fires inside walls and at poor connections greatly increases. Because wiring is often hidden behind walls, electrical faults may be hard to detect, except by properly trained electricians.

Have Electrical Systems Examined by a Licensed Electrician Every 10 Years
Have electrical systems examined by a licensed electrician every 10 years. A good electrician will look for electrical faults, check for warm switch plates and receptacles, and analyze the use of electricity to see if additional capacity is needed. It is important to help our homes keep up with the electrical demands of our changing lifestyles, changes in society and new technologies.

Candle Fires

135 Candle Fires Caused 2 Civilian Deaths
In 2013, candles caused 135 fires of all types. These fires caused two civilian deaths, 25 civilian injuries, six firefighter injuries and an estimated dollar loss of $4.3 million in damages. There was a 7% increase from the 126 fires of all types started by candles in Massachusetts in 2012.



81% of Candle Fires are Structure Fires
Of the 135 candles fires in 2013, 110, or 81%, were classified as structure fires. None were reported as motor vehicle fires. One (1), or 1%, was an outside rubbish fire; one, or 1%, was a special outside fire; and 23, or 17%, were unclassified fires.

Candle Fires Happen Most During the Holidays
Between 2009 and 2013, the days of the year on which most candle fires occurred were:

1. December 24 (Christmas Eve), December 25 (Christmas) December 31 (New Year's Eve), November 29 - seven candle fires;
2. October 31 (Halloween), December 10 and 12 - six candle fires.
3. November 27 and 28, and December 14 - five candle fires.

Plymouth Has Largest Loss Candle Fire & Civilian Candle Fire Death
In 2013 candle fires caused two civilian fire deaths.

- On November 29, 2013, at 3:58 a.m., the Plymouth Fire Department was called to a fatal candle fire in an 85-unit apartment building. The candle ignited the plastic appliance housing it was situated upon. The victim, a 79-year old woman, was asleep at the time of the fire and overcome by the smoke generated by the fire. No one else was injured at this fire. Detectors were present and alerted the other occupants. The building was not sprinklered. Damages from the blaze were estimated to be $950,000.

- On February 22, 2013, at 1:30 p.m., the Boston Fire Department was dispatched to an EMS call for a severely burned victim in a single-family home. Upon arrival they found an 18-year old woman with severe burns to her body. The victim's clothes ignited when she got too close to a candle. Her father heard her screams and extinguished the flames with his bare hands and a coat to smother them. Nothing else in the home ignited. She was transported to a local hospital where she succumbed to his injuries. The victim's father was also injured at this fire. It was undetermined if detectors and sprinklers were present. Damages from this fire were not estimated.

92% of Candle Fires Occurred in Homes
Of the 108 candle fires that occurred in buildings, 92% were residential fires. Candles caused 99 residential building fires, two civilian deaths, 24 civilian injuries, five firefighter injuries and an estimated dollar loss of $4.2 million. Six (6) candle fires, or 6%, occurred in a public assembly properties; and two candle fires, or 2%, occurred in mercantile and business properties. One percent (1%), or one candle fire occurred in a special property.

40% of Candle Fires in Homes Occurred in the Bedroom
Of the 99 candle fires in residential structures, 40% occurred in the bedroom; 18% occurred in the kitchen; 16% occurred in the living room; 4% each started in the bathroom and unclassified function rooms; and 2% began in bar areas. It is all too easy to fall asleep and leave a candle burning unattended in the bedroom.

Smoke Detectors Operated in 60% of Candle Fires in Homes
Of the 99 candle fires in homes, smoke detectors operated in 60% of these fires. Smoke detectors were present but did not operate in 14% of these incidents. No detectors were present in 5% of candle fires in people's homes. Six percent (6%) of the candle fires were too small to activate the smoke detector. In 15 incidents, or 15%, the smoke detector status was undetermined.

If you are going to be burning candles with an open flame in your home make sure that your smoke detectors are working properly.

Candle Safety Tips

- Burn candles in the center of a 1-foot **Circle of Safety,** free of anything that can burn.
- Stay in the same room with burning candles; do not leave unattended.

- Burn candles on a non-combustible surface such as a ceramic saucer or plate.
- Be sure to snuff out candles before falling asleep, going out, or leaving the room.
- Teach everyone in the family the rules of safe candle use.
- Keep candles out of reach of small children and pets.

More information on candle fire safety can be found on our webpage at http://www.mass.gov/dfs.htm.

Clothes Dryer Fires

Dryer Fires Cause 2 Civilian Injuries & $1.6 Million in Damages
One hundred and thirty (130) clothes dryer fires caused two civilian injuries, three fire service injuries and an estimated dollar loss of $1.6 million. The average dollar loss per fire was $12,346. Of these 130 fires, 101, or 78%, occurred in residential occupancies.

Twenty-two percent (22%) of the dryer fires were caused by a failure to clean the machines; 10% were caused by mechanical failures or malfunctions; and 7% were caused by operational deficiencies.

2/3 of Dryers Were Electrical
Sixty-seven percent (67%) of the 130 dryers involved in fires were identified as having electricity as their power source. Thirty-two percent (32%) involved gas-fueled clothes dryers. This may be a reflection of the market share of electrical and gas-powered dryers rather than any inherent danger of one power source over another.

Forty-nine percent (49%) of dryer fires identified the heat source as heat coming from the dryer itself but could not be any more specific. Twenty-nine percent (29%) of clothes dryer fires identified the heat source as radiated or conducted heat from equipment inside

the dryer itself; and 7% identified the heat source as a spark, ember or flame from operating equipment.

55% of Clothes Dryer Fires Occurred in 1- & 2-Family Homes
Seventy-five percent (75%) of the dryer fires occurred in residential properties; 55% occurred in one- and two-family homes and 20% occurred in apartments; 18% occurred in mercantile or business properties such as laundry or dry cleaning businesses; 2% occurred in public assembly facilities; 2% happened at educational properties; 1% occurred in institutional properties such as nursing homes, hospitals and jails; 1% occurred at storage facilities.

Clean the Lint Filter After Every Load
The public should be reminded to clean the dryer filter screen after each load of laundry, to clean the outside vents twice a year and to occasionally vacuum the motor area of the dryer. If materials such as cooking oil, solvents and other combustible or flammable liquids were not removed completely during the laundry cycle, heat from the dryer may cause them to ignite. This is the reason that mop heads should not be put into the dryer. An adult should be at home whenever the dryer is in use and the home should have working smoke alarms.

- Remember to keep dryer vents clear during heavy snowstorms to prevent the risk of carbon monoxide poisoning.

Westford Has Largest Loss Clothes Dryer Fire
- On December 20, 2013, at 12:56 p.m., the Westford Fire Department was called to a dryer fire in a single-family home. The fire began in a gas-powered clothes dryer in the basement. No one was injured at this fire. It was undetermined if detectors were present and there were no sprinklers in the building. Damages from this fire were estimated to be $425,000.

Fireworks Incidents

74 Incidents Involving Fireworks Caused 2 Fire Service Injuries
There were 74 fire and explosion incidents reported that involved fireworks in 2013. This is a 1% increase from the 73 fire and explosion incidents reported in 2012. Incidents involving fireworks caused two fire service injuries and an estimated $25,426 in property damages. The average dollar loss per fireworks incident was $706.

Fifty percent (50%) of the fireworks incidents were brush fires, while 14% were structure fires.

A fireworks explosion without fire is coded as an Incident Type 243 – Fireworks explosion (no fires). In 2013, 38 such incidents were reported.

31% of Fireworks Fires Occurred the Week of July 4th
Eleven (11), or 31%, of the 36 fireworks-caused fires in 2013 took place during the week of the 4th of July.

Largest Loss Fireworks Fire –Worcester House Fire

- On July 4, 2013, at 9:51 p.m., the Worcester Fire Department was dispatched to a fireworks fire at a three-unit apartment building. The fire was caused by fireworks landing on top of the roof. One (1) firefighter was injured battling this fire. Detectors were present but the failed to operate from a lack of cleaning and the building was not sprinklered. Damages were estimated at $12,000.

Refer to M–BIRS Annual Report for More Information about Fireworks Injuries
For more information about the causes of burn injuries, please refer to the *Massachusetts Burn Injury Reporting System — 2013 Annual Report.* According to Massachusetts General Law (MGL) Chapter 112, Section 12A, the treatment of all burn injuries extending over 5% or more of a person's body surface area must be reported immediately to the State Fire Marshal. All burn reports received by the Division Fire Safety are reviewed for possible suspicious circumstances. Gasoline burns, burns on the hands and arms or other unusual scenarios are referred for further investigation.

There were four fireworks-related burn injuries reported to M-BIRS in 2013. These four victims were between eight and 38-years old. Since we started collecting burn injury reports in M-BIRS in 1984, the average number of fireworks-related burns per year is 10. The highest number of reported fireworks-related burns occurred in 1989, with 45 reported burn injuries.

Grill Fires

93 Incidents Involving Grills in 2013 Caused 3 Civilian Injuries
In 2013, there were 93 fires and explosion incidents reported to the Massachusetts Fire Incident Reporting System (MFIRS) involving open fired grills. These incidents caused three civilian injuries and an estimated dollar loss of $296,311. This is a 1% increase from the 92 grill fires in 2012.

Predictably almost three-quarters, or 73%, of these incidents occurred in the months of May to September when people are most likely to use their outdoor grills.

Gas Grill Fires
Of the 93 grill incidents, 87, or 94%, of the grills were gas grills. Solid fuels such as charcoal briquettes powered four grills, or 4% of these fires. One (1), or 1%, was electrically powered; and another grill's power source was undetermined. The 87 gas grill incidents caused one civilian injury and $201,511, or 68% of the total damages. Seventy-five percent (75%) of the gas grill fires in Massachusetts occurred between May and September.

It is illegal to have LP-gas on balconies or porches above the first floor. Section 5a of 527 Code of Massachusetts Regulation 6:07 states, "…Storage or use of LP-Gas containers above the first floor of a building used for habitation is prohibited…" The reason for this is that LP-gas is heavier than air and will sink. A spark from below could ignite gas that has leaked.

Braintree Had Largest Loss Grill Fire
Three (3) incidents caused $260,000 million, or 88% of the total damages caused by grill fires in 2013.

- On October 16, 2013, at 4:31 p.m., the Braintree Fire Department was called to a gas grill fire on an exterior balcony of a single-family home. No one was injured in this fire. There were no detectors present and the building was not sprinklered. Damages from the blaze were estimated to be $100,000.

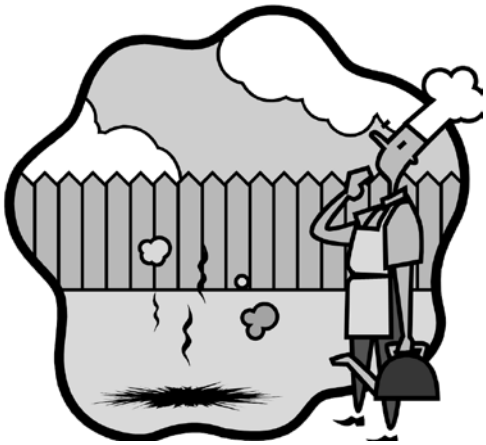
- On July 5, 2013, at 8:49 p.m., the Sandwich Fire Department was called to a charcoal grill fire at a single-family home. The grill was on the back porch but was too close to the exterior wall of the home. The heat from the grill ignited the exterior wall and the fire spread. One (1) civilian was injured at this fire while trying to extinguish it. It was undetermined if detectors were present. The building was not sprinklered. Damages from the blaze were estimated to be $85,000.

- On August 17, 2013, at 5:53 p.m., the Newton Fire Department was called to a gas grill fire at a single-family home. No one was injured at this fire. Detectors were present but the fire was too small to activate them. The building was not sprinklered. Damages from the blaze were estimated to be $75,000.

Refer to MBIRS Annual Report for More Information about Grill Injuries
For more information about the causes of burn injuries, please refer to the *Massachusetts Burn Injury Reporting System — 2013 Annual Report.* According to Massachusetts General Law (MGL) Chapter 112, Section 12A, the treatment of all burn injuries extending over 5% or more of a person's body surface area must be reported immediately to the State Fire Marshal. Seven (7) civilians, including a one-year old and a two-year old were reported to M-BIRS in 2013 with burn injuries from a grill. June, July; and August each had two burn injuries; and one occurred in April.

Grill Safety
Follow these safety tips when using a grill:

- Use all barbecue grills away from the house in the backyard.
- Supervise children whenever any grill is in use.
- Never use gasoline on any grill!



Gas Grill Safety

- Keep all LP-gas outside, 10 feet away from building openings such as doors, windows, and dryer vents and 20 feet from air intake vents. Gas grill containers must be kept at least five feet away from possible ignition sources such as air conditioners, compressors, cars, and pilot lights.
- LP-gas grills are not permitted inside or on balconies above the first floor of any building where people live. LP-gas is heavier than air and sinks. A leaky grill could pose a hazard to people below.
- Make sure all connections are tight and secure.

Charcoal Grill Safety

- Use only charcoal lighter fluid to start charcoal grills.
- Once the coals have been lighted, never add more lighter fluid to the fire — flames may travel up the stream of lighter fluid resulting in serious burns.
- Only use charcoal grills outside.

Carbon Monoxide Incidents

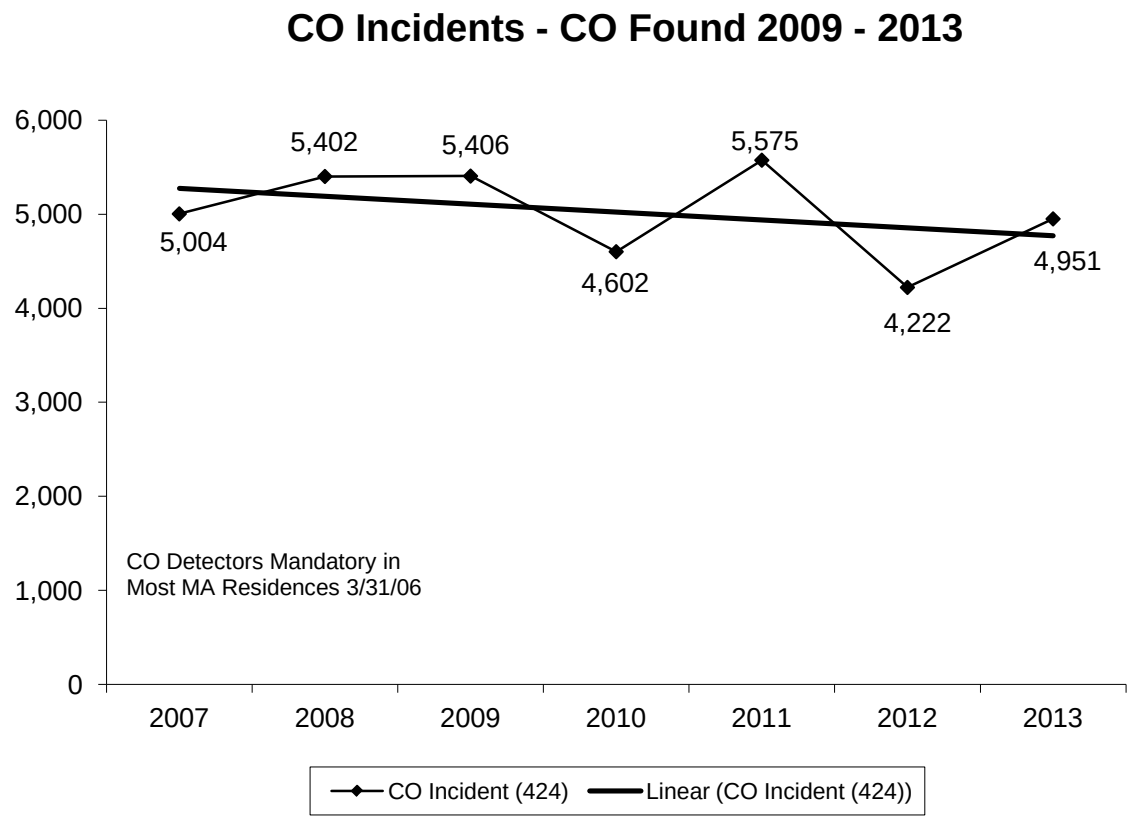
In 2013, 293 fire departments voluntarily reported 19,770 carbon monoxide (CO) incidents: hazards[54], carbon monoxide detector activation due to malfunction[55] and carbon monoxide detector activation – no CO[56]. A CO hazard is an identifiable carbon monoxide emergency whether or not a CO detector activated, the presence of CO was confirmed, and some corrective action was indicated. Fire departments responded to some 4,190 confirmed CO hazard incidents.

28% Increase from 2012
2013 returned to the previous trend started after the institution of Nicole's Law in 2006, which made CO detectors mandatory in most residential occupancies throughout the Commonwealth, where all three types of CO calls increased. In 2013, the number of

[54] Carbon monoxide hazards = Incident Type – 424.
[55] Carbon monoxide detector activation due to a malfunction = Incident Type – 736.
[56] Carbon monoxide detector activation, no CO = Incident Type – 746.

reported carbon monoxide incidents increased by 4,241 calls, or 28%, from the 15,283 calls reported in 2012.

Since the inception of Nicole's Law in 2006, total CO calls have steadily increased. CO calls of all types increased by 105% between 2006 and 2013. Calls where the dangerous gas was found increased by 28% over the same time period. This confirms the need to have these life-saving devices in people's homes as a way to avert potential lethal calls. The decrease in the number of these calls in 2010 and 2012 are an exception, but they were both still above the 2006 figures. The chart below illustrates the number of calls where carbon monoxide was discovered by responding fire service personnel and the increasing trend in the number of these calls.



Boston, the largest city in the Commonwealth, reported the most CO incidents where above normal levels of carbon monoxide were found in 2013. Boston reported 467 of these incidents. The Town of Billerica reported 108 CO calls, the second most CO incidents in 2013. The next five cities in terms of the number of carbon monoxide calls reported were: Lowell with 105 calls, Methuen with 98 calls, Quincy with 98 calls, Springfield with 93 calls; and Plymouth reported 90 carbon monoxide incidents in 2013.

A CO detector activation is when a CO detector activated in response to pollution, an unknown trigger or a non-threatening situation. Fire departments responded to 14,640 CO detector activations. These types of calls are split into two categories: CO detector activation due to malfunction and CO detector activation – no CO found. Two hundred and sixty-nine (269) fire departments reported 8,518 CO detector activations due to malfunction. Two hundred and fifty-four (254) fire departments reported 6,301 CO detector activations with no CO found after investigation.

Finding little or no CO when the fire department arrives does not prove conclusively that no problem existed. An appliance may have released large quantities of CO at one particular stage in its operation or someone may have vented the house with fresh air from the outside. Knowledgeable repair people must check out the equipment.

95% of All CO Incidents Occur in Residences
Ninety-five percent (95%) of all carbon monoxide calls occurred in residential occupancies. Institutional facilities are the next leading property use for CO calls, accounting for 2% of the incidents. Public assembly properties, mercantile and business properties, and educational facilities each accounted for 1% of these calls. Special properties, storage facilities, basic industrial facilities, and manufacturing and processing facilities each accounted for less than 1% of the carbon monoxide calls in 2013.

45% of All CO Calls Occur During the Winter
Forty-five percent (45%) of all the CO calls that occurred in 2013 happened during the colder months of November through February. Most CO calls occurred between the hours of 5:00 p.m. and 9:00 p.m.

These seem to be the times when most people are awake and doing things around the house or coming home from work or school. This would also be the time that people would turn the heat up. Heating equipment is a leading cause of carbon monoxide incidents.

According to the U.S. Consumer Product Safety Commission (CPSC), an acceptable level of CO is a 15 PPM average over a time span of eight hours or a 22 PPM average for an hour. If you have 1,000 PPM for over thirty minutes, it puts you at a high level of danger in the form of a collapse into a coma or permanent brain damage.

Power Outages = Low Batteries
Whenever there is a prolonged power outage, you should change the battery in plug-in CO detectors. When the power goes out the backup battery powers the unit for a couple of days. Many people misinterpret the low battery warning ‘beep’ as an active detection of CO and call the fire department tying up emergency resources that may be needed elsewhere. After two of the latest major disasters to hit Massachusetts, the 2011 Halloween snowstorm, and the 2013 February blizzard, all CO calls increased by 345% and 621% respectively from the previous year. Specifically, CO Detector Activation and

Malfunction calls increased by 279% in the days following the Halloween snowstorm and by 414% following the blizzard.

Beat the Beep - Replace CO Alarms Every 5-7 Years

Many CO alarms were purchased and installed when Nicole's Law took effect in March of 2006. Depending on the make and model, CO alarms have a life expectancy of five to seven years. These alarms are now reaching the end of their useful days and will need to be replaced with new detectors. Both the public and local firefighters need to be aware of the signs of an aged detector. The Department of Fire Services rolled out an educational campaign called "Beat the Beep" at the end of 2011.

Mapping the Fire Experience

Boston & Worcester Had the Most Reported Fires

Boston reported having the most fires, with 5,900 in 2013. Worcester had the second highest number of reported fires at 1,456. Cambridge (932), Springfield (838), Quincy (554), and Lowell (514) rounded out the top six communities in the Commonwealth in terms of reported fires.

However if we look at the number of reported fires compared to the total population of the individual community we get a different picture. One would expect that the bigger cities and towns to have more fires because of their populations. When we calculate the rate of reported fires for every 10,000 people in a given municipality, the ranking changes. Usually the top communities in terms of number of reported fires fall towards the bottom of the rankings. Communities with one, two or three reported fires take over the top spots. These communities may have a rate that far exceeds that actual number of fires that they reported. For example towns like Peru, Chilmark and Heath all reported less than 10 fires in 2013 but their small populations cause them to have a high fires per 10,000 population.

For a listing and breakdown of the number of reported fires and arsons by community, please go to the appendix.

The map titled, *2013 Fires per 10,000 Population by Community*, on page 166, displays the rate of reported fires by community for every 10,000 of that community's population. The map's legend indicates to which group a municipality belongs. Cities and towns that are blank reported no fires or failed to report at all. Communities with diamonds have the next highest, followed by straight lines, diagonal lines, towns shaded gray and finally towns colored black show the more fires per 10,000 people were reported from that municipality. These legend symbols are consistent through the other three maps.

Topsfield, with 94 total fires, had the highest rate of 154 reported fires per 10,000 population. Montgomery was the next highest with 12 total fires and 143 fires per 10,000

population; Rowe had 127; Chelsea had 124; and Great Barrington and Berlin each had 111 fires per 10,000 population. Rates may exceed total actual reported fires.

Boston & Cambridge Had the Most Reported Structure Fires
Boston reported having the most structure fires, with 4,311 in 2013. Cambridge had the second highest number of reported structure fires at 778. Worcester (776), Springfield (464), Brookline (401), and Framingham (366) rounded out the top six communities in the Commonwealth in terms of reported structure fires.

The map titled *2013 Structure Fires per 10,000 Population by Community*, on page 167, displays the rate of reported structure fires by community for every 10,000 of that community's population. Cities and towns that are blank did not report any structure fires or failed to report at all.

Topsfield, with 77 structure fires, had the highest rate of 127 structure fires per 10,000 population. Middleton was the next highest with 82 structure fires and 91 structure fires per 10,000 population; Great Barrington had 89; Chelsea had 79; and Rowe had 76 structure fires per 10,000 population.

Boston & Worcester Had the Most Reported Residential Building Fires
Boston reported having the most residential building fires, with 3,555 in 2013. Worcester had the second highest number of reported building fires at 647. Cambridge (630), Springfield (412), Brookline (358), and Lynn (321) rounded out the top six communities in the Commonwealth in terms of reported residential building fires.

The map titled *2013 Residential Building Fires per 10,000 Population by Community*, on page 168, displays the rate of reported building fires by community for every 10,000 of that community's population. Cities and towns that are blank did not report any residential building fires or failed to report at all.

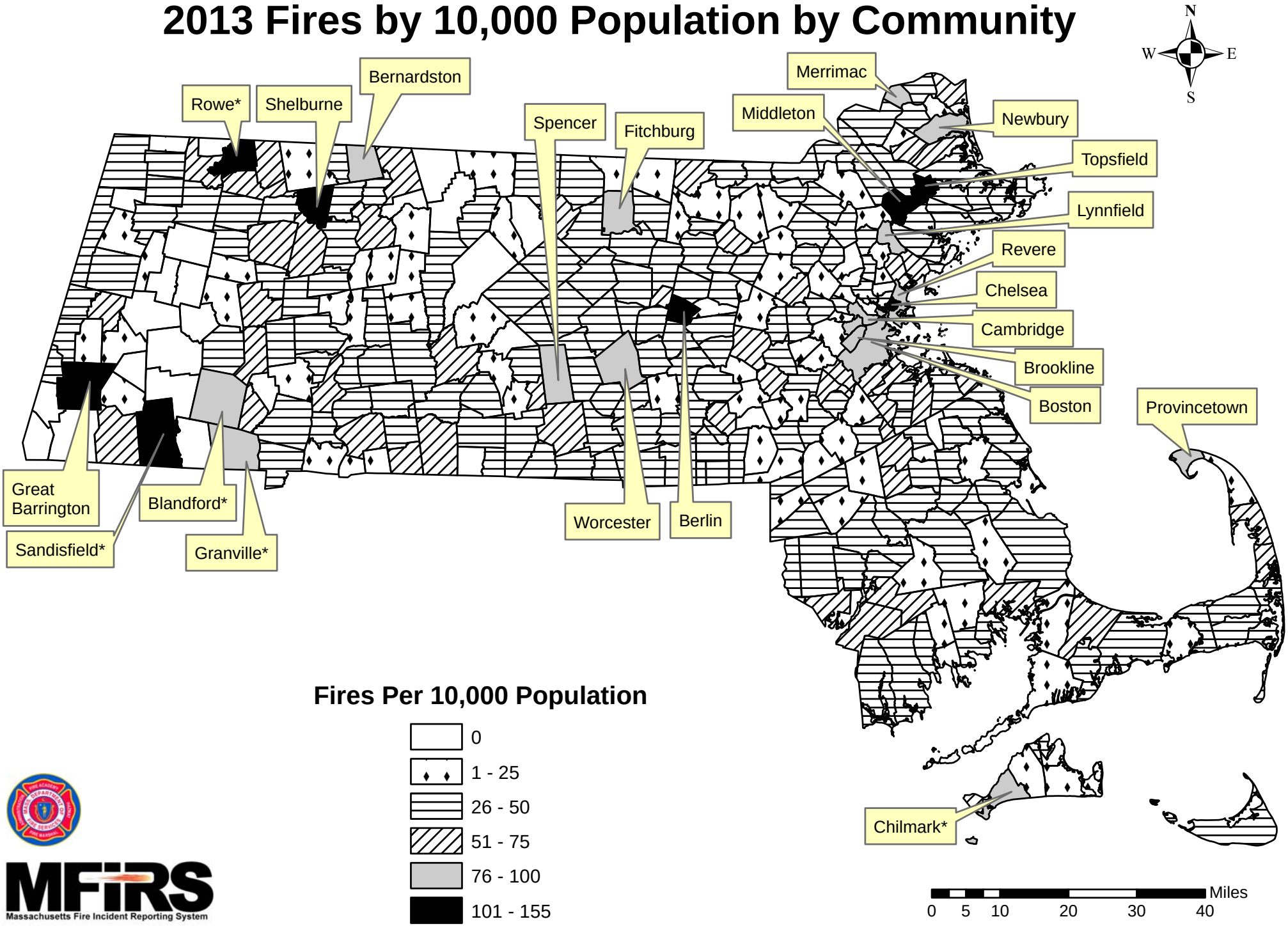
Topsfield, with 67 residential building fires, had the highest rate of 110 residential building fires per 10,000 population. Next highest was Middleton with 86 residential building fires per 10,000 population; Great Barrington had 70; Fitchburg had 63; Chelsea had 62; and Provincetown had 61 residential building fires per 10,000 population.

Boston & Worcester Had the Most Reported Arsons
Boston reported having the most arsons, with 136 in 2013. Worcester had the second highest number of reported arsons at 54. Taunton (36), Brockton (26), Fall River (22), and Lowell (22) rounded out the top six communities in the Commonwealth in terms of reported arsons.

The map titled *2013 Arsons per 10,000 Population by Community*, on page 169, displays the rate of the total reported arsons by community for every 10,000 of that community's population. Cities and towns that are blank had no reported of arsons or failed to report at all.

Huntington, with six arsons, had the highest rate of any department reporting more than five arsons, with 28 reported arsons per 10,000 population. Next highest was Merrimac with 14 arsons per 10,000 population; Harvard had 14, Douglas had 12; and West Bridgewater had nine arsons per 10,000 population.

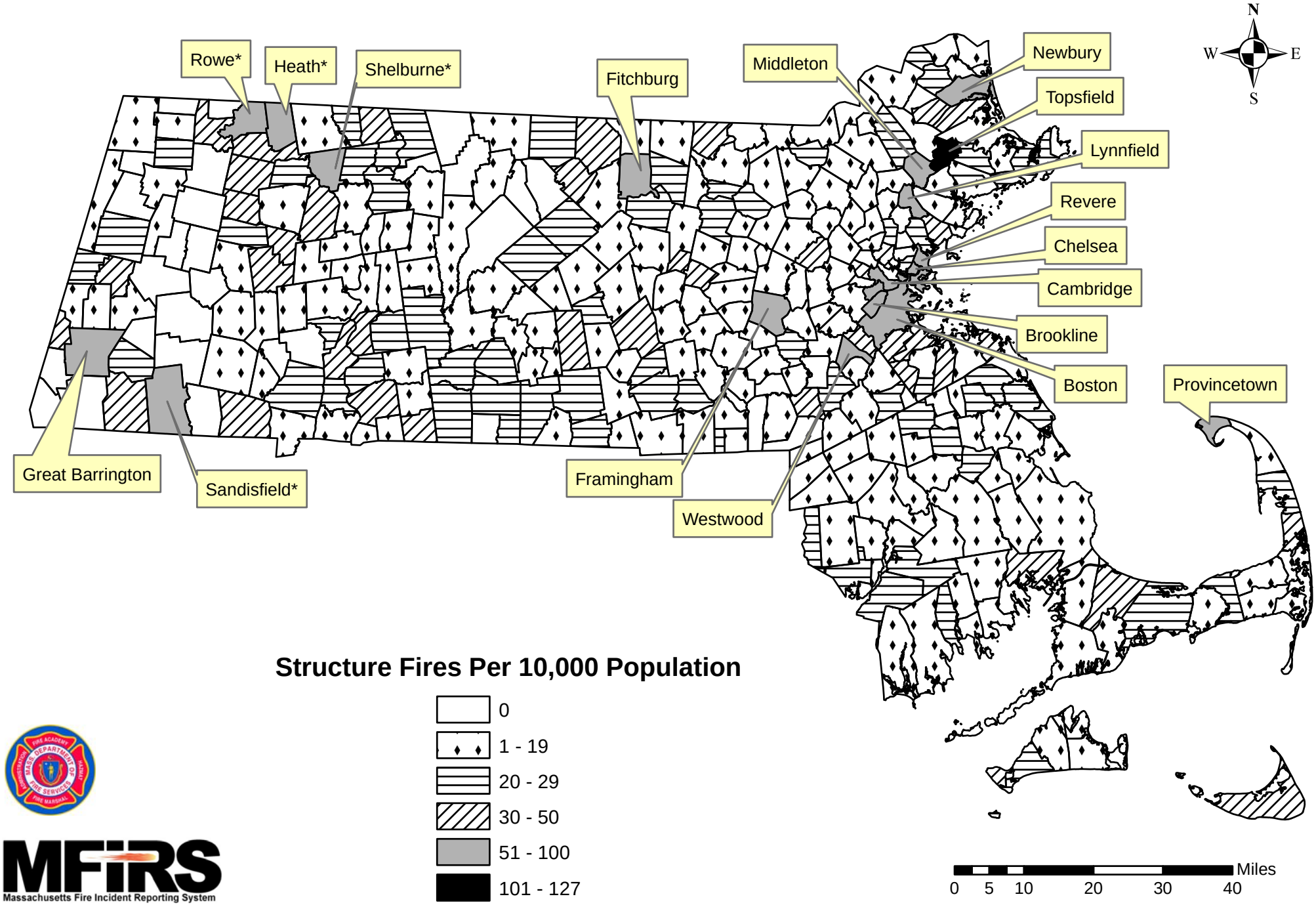
2013 Fires by 10,000 Population by Community



MFIRS
Massachusetts Fire Incident Reporting System

*These departments reported 15 fires or less in 2013.

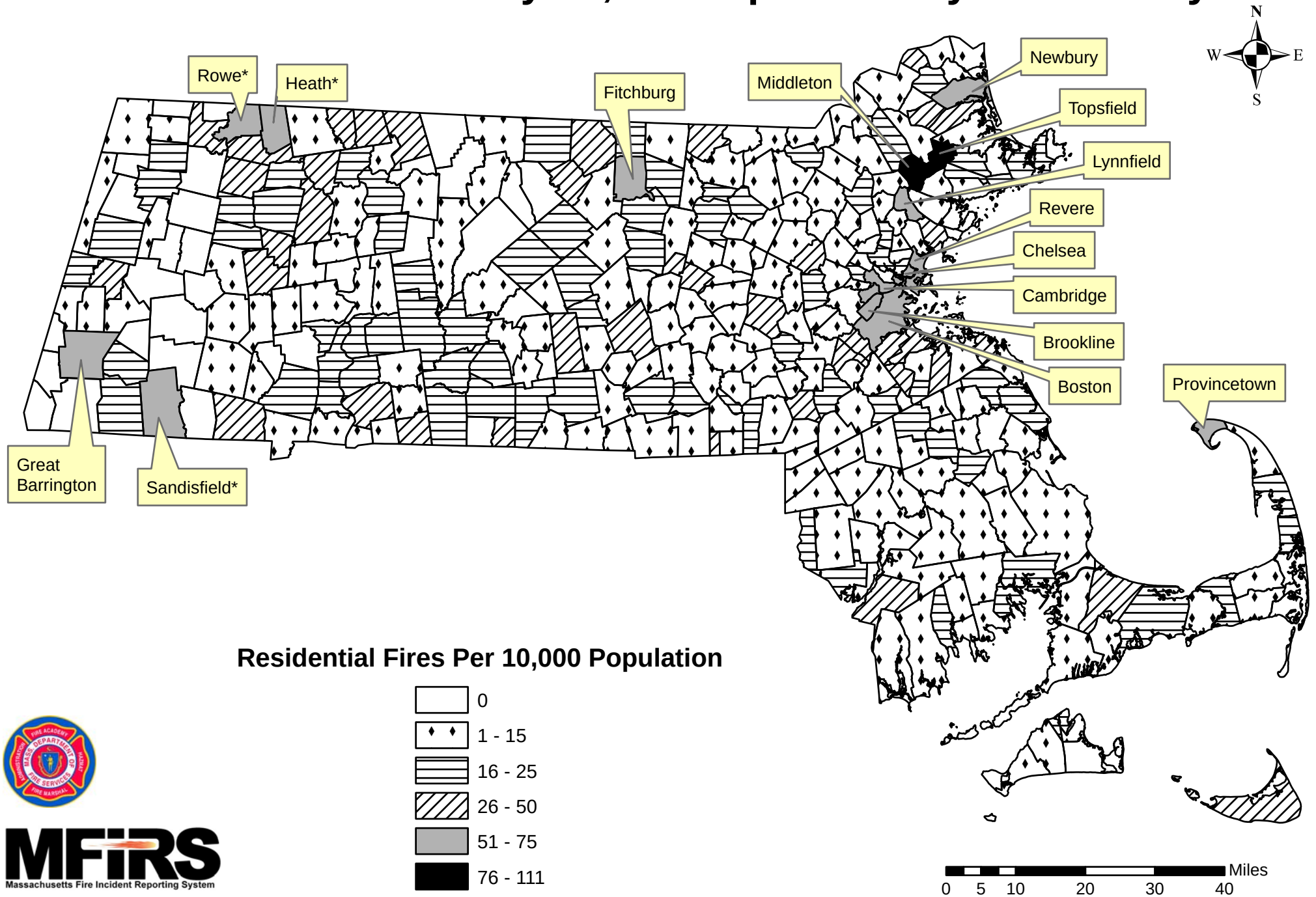
2013 Structure Fires by 10,000 Population by Community



MFIRS
Massachusetts Fire Incident Reporting System

*These departments reported 15 or less structure fires in 2013.

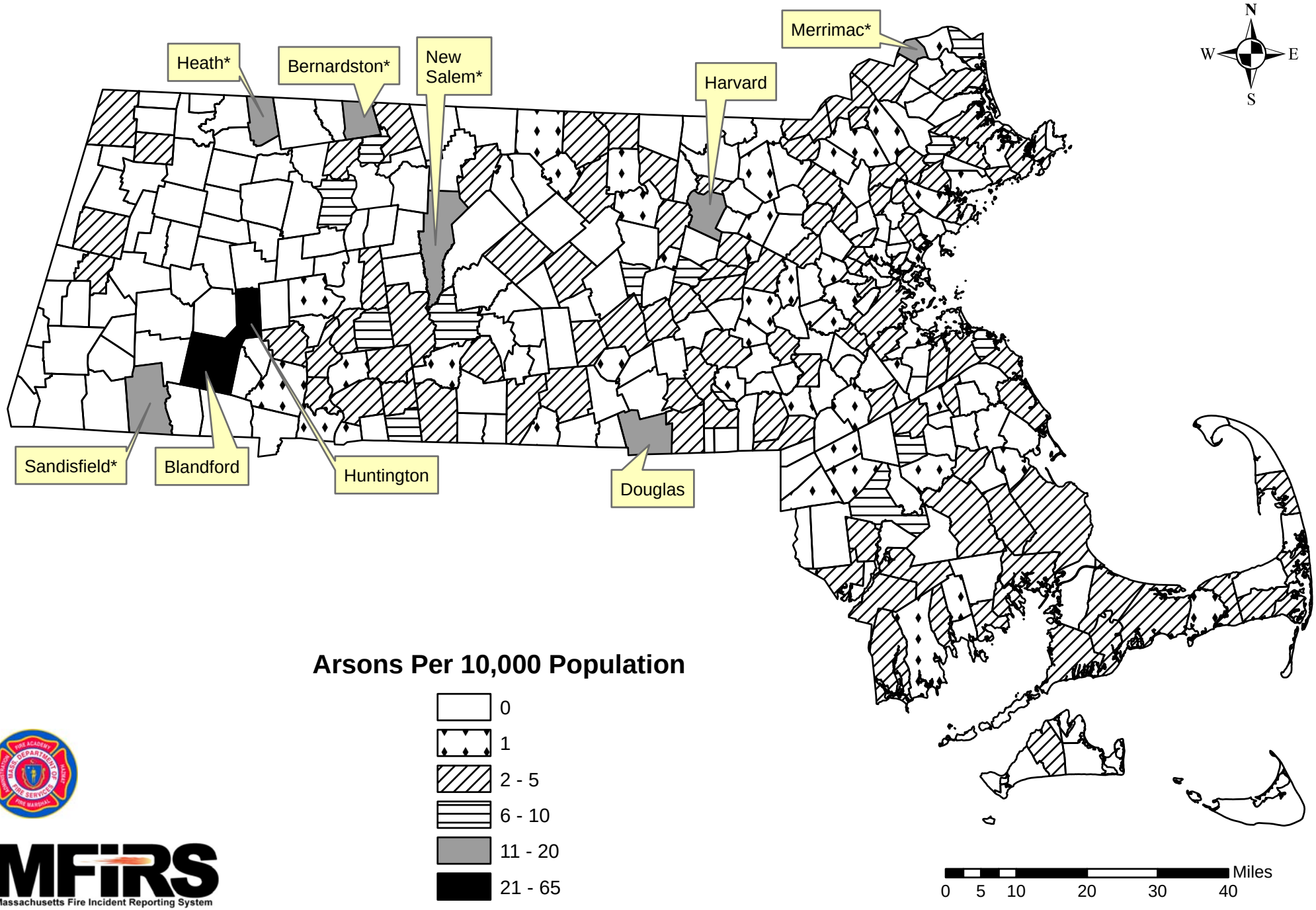
2013 Residential Fires by 10,000 Population by Community



MFIRS
Massachusetts Fire Incident Reporting System

*These departments reported 15 or less residential fires in 2013.

2013 Arsons by 10,000 Population by Community



MFIRS
Massachusetts Fire Incident Reporting System

*These departments reported 5 or less arsons in 2013.

Appendix

2013 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Abington	58	24	6	28	0	1	0	0	$1,164,835
Acton	58	23	3	32	0	0	0	0	$63,381
Acushnet	23	13	4	6	0	1	0	0	$155,350
Adams	31	21	1	9	0	2	0	2	$1,011,181
Agawam	60	30	10	20	0	0	0	0	$451,980
Alford	2	2	0	0	0	1	0	0	$125,000
Amesbury	41	24	2	15	0	0	0	0	$120,030
Amherst	99	42	6	51	1	3	0	15	$1,364,105
Andover	65	35	13	17	0	0	0	0	$431,641
Aquinnah	2	1	0	1	0	0	0	0	$40,000
Arlington	89	43	7	39	0	0	0	0	$883,140
Ashburnham	27	19	0	8	0	0	0	0	$52,400
Ashby	7	5	0	2	0	1	0	0	$0
Ashfield	10	3	2	5	0	0	0	0	$25,000
Ashland	6	4	0	2	0	0	0	0	$600,800
Athol	46	20	5	21	0	1	0	2	$200,000
Attleboro	135	51	23	61	1	6	0	3	$1,112,575
Auburn	50	21	14	15	0	0	0	0	$391,840
Avon	27	2	8	17	0	0	0	1	$366,700
Ayer	25	16	3	6	1	1	0	0	$403,000
Barnstable Fire Districts									
Barnstable	*24*	*6*	*6*	*12*	*0*	*0*	*0*	*1*	*$25,552*
Cotuit	*1*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*$0*
C.O.M.M.	*68*	*29*	*14*	*25*	*0*	*4*	*0*	*2*	*$745,024*
Hyannis	*115*	*53*	*11*	*51*	*0*	*19*	*0*	*1*	*$1,364,027*
Barre	25	15	4	6	1	0	0	0	$233,200
Becket	0	0	0	0	0	0	0	0	$0
Bedford	34	15	2	17	0	0	0	1	$632,743
Belchertown	59	28	6	25	0	0	0	0	$258,500
Bellingham	63	28	15	20	0	1	0	0	$562,850
Belmont	109	85	2	22	0	0	0	0	$71,900
Berkley	18	9	2	7	0	1	0	0	$72,500
Berlin	32	12	10	10	0	0	0	1	$324,234
Bernardston	21	9	3	9	0	0	0	0	$204,030
Beverly	105	35	8	62	0	1	0	0	$1,173,301

2013 Arson Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Abington	1	1	0	0	0	0	0	0	$0
Acton	1	0	0	1	0	0	0	0	$0
Acushnet	1	0	0	1	0	0	0	0	$0
Adams	1	1	0	0	0	0	0	0	$500
Agawam	1	0	1	0	0	0	0	0	$155,000
Alford	0	0	0	0	0	0	0	0	$0
Amesbury	1	0	0	1	0	0	0	0	$0
Amherst	9	3	0	6	0	1	0	0	$245
Andover	1	0	0	1	0	0	0	0	$0
Aquinnah	0	0	0	0	0	0	0	0	$0
Arlington	7	0	2	5	0	0	0	0	$14,410
Ashburnham	1	0	0	1	0	0	0	0	$0
Ashby	0	0	0	0	0	0	0	0	$0
Ashfield	1	0	0	1	0	0	0	0	$0
Ashland	1	1	0	0	0	0	0	0	$400,000
Athol	5	0	0	5	0	0	0	0	$0
Attleboro	3	2	1	0	0	0	0	0	$5,000
Auburn	1	0	0	1	0	0	0	0	$0
Avon	0	0	0	0	0	0	0	0	$0
Ayer	1	0	0	1	0	0	0	0	$0
Barnstable Fire Districts									
Barnstable	*2*	*0*	*0*	*2*	*0*	*0*	*0*	*0*	*$0*
Cotuit	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
C.O.M.M.	*7*	*1*	*0*	*6*	*0*	*0*	*0*	*0*	*$8,100*
Hyannis	*2*	*2*	*0*	*0*	*0*	*1*	*0*	*0*	*$66,000*
West Barnstable	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*$0*
Barre	2	1	0	1	0	0	0	0	$20,000
Becket	0	0	0	0	0	0	0	0	$0
Bedford	2	0	0	2	0	0	0	0	$320
Belchertown	2	0	0	2	0	0	0	0	$0
Bellingham	0	0	0	0	0	0	0	0	$0
Belmont	3	1	0	2	0	0	0	0	$0
Berkley	0	0	0	0	0	0	0	0	$0
Berlin	2	0	1	1	0	0	0	0	$200
Bernardston	3	0	0	3	0	0	0	0	$0
Beverly	3	1	0	2	0	0	0	0	$8,000

2013 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Billerica	141	55	14	72	0	2	0	9	$2,277,661
Blackstone	31	13	2	16	0	2	0	2	$148,148
Blandford	12	1	1	10	0	0	0	0	$0
Bolton	15	4	3	8	0	0	0	0	$36,350
Boston	5,831	4,303	295	1,233	5	19	0	13	$36,882,465
Bourne	27	20	3	4	0	5	0	0	$620,825
Boxborough	16	2	4	10	0	1	0	0	$0
Boxford	34	10	6	18	0	0	0	0	$8,500
Boylston	12	2	1	9	0	0	0	0	$169,500
Braintree	90	30	14	46	0	1	0	1	$1,088,155
Brewster	36	17	1	18	0	0	0	0	$9,100
Bridgewater	83	35	16	32	0	1	0	0	$999,200
Brimfield	16	10	3	3	1	1	0	0	$420,000
Brockton	503	247	44	212	0	8	0	14	$3,253,384
Brookfield	6	6	0	0	0	0	0	0	$6,000
Brookline	478	401	15	62	0	3	0	2	$894,260
Buckland	7	4	0	3	0	0	0	0	$800
Burlington	95	27	11	57	0	1	0	1	$837,300
Cambridge	932	778	11	143	0	2	0	6	$1,006,481
Canton	16	3	8	5	0	0	0	0	$69,200
Carlisle	4	3	1	0	0	0	0	0	$93,000
Carver	16	11	5	0	0	0	0	0	$519,000
Charlemont	8	6	0	2	0	0	0	0	$0
Charlton	66	35	11	20	1	1	0	1	$649,900
Chatham	21	7	1	13	0	0	0	1	$25,000
Chelmsford	15	8	4	3	2	4	0	1	$3,823,050
Chelsea	434	276	18	140	0	4	0	46	$3,036,743
Cheshire	9	6	2	1	0	0	0	1	$89,500
Chester	6	2	0	4	0	0	0	0	$307,000
Chesterfield	7	4	1	2	0	0	0	0	$0
Chicopee	206	116	28	62	0	5	0	6	$867,274
Chilmark	8	2	2	4	0	0	0	0	$0
Clarksburg	1	0	1	0	0	0	0	0	$6,250
Clinton	78	51	3	24	0	0	0	0	$0
Cohasset	50	31	2	17	0	0	0	0	$32,200

2013 Arson Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Billerica	5	1	0	4	0	0	0	0	$1,000
Blackstone	0	0	0	0	0	0	0	0	$0
Blandford	8	0	0	8	0	0	0	0	$0
Bolton	0	0	0	0	0	0	0	0	$0
Boston	136	22	6	108	2	0	0	0	$283,185
Bourne	0	0	0	0	0	0	0	0	$0
Boxborough	0	0	0	0	0	0	0	0	$0
Boxford	0	0	0	0	0	0	0	0	$0
Boylston	0	0	0	0	0	0	0	0	$0
Braintree	0	0	0	0	0	0	0	0	$0
Brewster	0	0	0	0	0	0	0	0	$0
Bridgewater	2	0	2	0	0	0	0	0	$33,000
Brimfield	0	0	0	0	0	0	0	0	$0
Brockton	26	4	1	21	0	0	0	2	$240,550
Brookfield	0	0	0	0	0	0	0	0	$0
Brookline	1	1	0	0	0	0	0	0	$400,000
Buckland	0	0	0	0	0	0	0	0	$0
Burlington	5	0	1	4	0	0	0	0	$1,000
Cambridge	0	0	0	0	0	0	0	0	$0
Canton	0	0	0	0	0	0	0	0	$0
Carlisle	0	0	0	0	0	0	0	0	$0
Carver	2	1	1	0	0	0	0	0	$84,000
Charlemont	0	0	0	0	0	0	0	0	$0
Charlton	3	1	0	2	0	0	0	0	$60,000
Chatham	3	1	0	2	0	0	0	0	$0
Chelmsford	0	0	0	0	0	0	0	0	$0
Chelsea	10	7	1	2	0	0	0	8	$420,325
Cheshire	0	0	0	0	0	0	0	0	$0
Chester	0	0	0	0	0	0	0	0	$0
Chesterfield	0	0	0	0	0	0	0	0	$0
Chicopee	4	3	1	0	0	0	0	0	$37,200
Chilmark	0	0	0	0	0	0	0	0	$0
Clarksburg	0	0	0	0	0	0	0	0	$0
Clinton	1	0	0	1	0	0	0	0	$0
Cohasset	6	0	0	6	0	0	0	0	$0

2013 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Colrain	6	2	0	4	0	0	0	0	$15,800
Concord	43	20	4	19	0	0	0	0	$154,450
Conway	10	8	2	0	0	0	0	0	$57,000
Cummington	2	2	0	0	0	0	0	0	$58,000
Dalton	13	7	1	5	0	0	0	0	$33,000
Danvers	103	15	8	80	0	0	0	0	$109,400
Dartmouth Fire Districts									
Dartmouth #1	27	12	1	14	0	1	0	0	$356,900
Dartmouth #2	7	0	1	6	0	0	0	0	$50,800
Dartmouth #3	102	35	16	51	0	0	0	0	$508,309
Dedham	170	101	9	60	0	1	0	0	$591,800
Deerfield Fire Districts									
Deerfield	*5*	*2*	*1*	*2*	*0*	*0*	*0*	*0*	*$0*
South Deerfield	*20*	*2*	*4*	*14*	*0*	*0*	*0*	*0*	*$27,650*
Dennis	60	30	5	25	0	0	0	1	$724,020
Devens	35	4	1	30	0	0	0	0	$1,457,000
Dighton	18	11	0	7	0	0	0	0	$231,300
Douglas	22	5	0	17	0	0	0	0	$500
Dover	15	7	0	8	0	0	0	0	$7,000
Dracut	77	39	8	30	0	2	0	1	$1,103,325
Dudley	40	25	6	9	0	0	0	1	$580,150
Dunstable	8	0	1	7	0	0	0	0	$600
Duxbury	54	20	14	20	0	1	0	0	$128,500
East Bridgewater	51	30	1	20	0	0	0	0	$120,850
East Brookfield	12	1	1	10	0	0	0	0	$0
East Longmeadow	39	21	2	16	0	4	0	0	$351,302
Eastham	29	16	3	10	0	0	0	0	$0
Easthampton	55	31	5	19	0	0	0	0	$217,550
Easton	10	5	4	1	0	0	0	0	$355,700
Edgartown	2	1	1	0	0	0	0	0	$0
Egremont	0	0	0	0	0	0	0	0	$0
Erving	0	0	0	0	0	0	0	0	$0
Essex	10	1	3	6	0	0	0	0	$16,100
Everett	154	81	20	53	0	2	0	5	$1,424,199
Fairhaven	34	16	7	11	0	1	0	1	$1,287,601
Fall River	453	255	48	150	0	11	0	11	$4,037,780

2013 Arson Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Colrain	0	0	0	0	0	0	0	0	$0
Concord	0	0	0	0	0	0	0	0	$0
Conway	0	0	0	0	0	0	0	0	$0
Cummington	0	0	0	0	0	0	0	0	$0
Dalton	0	0	0	0	0	0	0	0	$0
Danvers	5	0	0	5	0	0	0	0	$0
Dartmouth Fire Districts									
Dartmouth #1	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Dartmouth #2	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Dartmouth #3	*2*	*2*	*0*	*0*	*0*	*0*	*0*	*0*	*$15,200*
Dedham	6	0	0	6	0	0	0	0	$0
Deerfield Fire Districts									
Deerfield	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
South Deerfield	*5*	*0*	*0*	*5*	*0*	*0*	*0*	*0*	*$0*
Dennis	6	1	0	5	0	0	0	0	$0
Devens	0	0	0	0	0	0	0	0	$0
Dighton	3	0	0	3	0	0	0	0	$1,100
Douglas	10	1	0	9	0	0	0	0	$0
Dover	0	0	0	0	0	0	0	0	$0
Dracut	4	0	1	3	0	0	0	0	$11,000
Dudley	0	0	0	0	0	0	0	0	$0
Dunstable	0	0	0	0	0	0	0	0	$0
Duxbury	0	0	0	0	0	0	0	0	$0
East Bridgewater	0	0	0	0	0	0	0	0	$0
East Brookfield	0	0	0	0	0	0	0	0	$0
East Longmeadow	0	0	0	0	0	0	0	0	$0
Eastham	0	0	0	0	0	0	0	0	$0
Easthampton	0	0	0	0	0	0	0	0	$0
Easton	0	0	0	0	0	0	0	0	$0
Edgartown	0	0	0	0	0	0	0	0	$0
Egremont	0	0	0	0	0	0	0	0	$0
Erving	0	0	0	0	0	0	0	0	$0
Essex	0	0	0	0	0	0	0	0	$0
Everett	12	6	0	6	0	0	0	2	$354,054
Fairhaven	0	0	0	0	0	0	0	0	$0
Fall River	22	15	1	6	0	0	0	4	$826,350

2013 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Falmouth	65	35	9	21	0	5	0	0	$2,069,299
Fitchburg	387	302	23	62	0	4	0	3	$1,674,024
Florida	4	3	0	1	0	0	0	1	$35,000
Foxborough	21	10	2	9	0	0	0	0	$12,000
Framingham	471	366	21	84	0	3	0	3	$1,541,515
Franklin	71	23	10	38	0	0	0	0	$0
Freetown	55	21	12	22	0	0	0	0	$726,269
Gardner	106	72	12	22	1	1	0	1	$520,894
Georgetown	43	35	1	7	0	0	0	0	$25,700
Gill	7	3	0	4	0	0	0	0	$53,000
Gloucester	123	62	6	55	2	2	0	19	$965,600
Goshen	4	4	0	0	0	0	0	0	$3,000
Gosnold	0	0	0	0	0	0	0	0	$0
Grafton	41	26	2	13	0	0	0	0	$32,000
Granby	31	12	1	18	0	0	0	0	$3,000
Granville	14	5	3	6	1	1	0	0	$8
Great Barrington	79	63	3	13	0	0	0	0	$610,700
Greenfield	70	41	5	24	2	1	0	1	$417,040
Groton	10	9	0	1	0	0	0	0	$505,700
Groveland	2	0	1	1	0	0	0	0	$7,600
Hadley	4	3	0	1	0	0	0	0	$296,500
Halifax	28	17	1	10	0	0	0	0	$75,600
Hamilton	24	15	0	9	0	0	0	0	$467,900
Hampden	34	22	3	9	0	0	0	0	$900,000
Hancock	2	1	0	1	0	0	0	0	$60,000
Hanover	64	27	7	30	0	1	0	0	$86,600
Hanson	30	5	5	20	0	0	0	0	$97,050
Hardwick	1	1	0	0	0	0	0	0	$300,000
Harvard	28	13	3	12	0	0	0	0	$4,400
Harwich	46	18	5	23	0	6	0	1	$401,800
Hatfield	5	1	2	2	0	0	0	0	$7,000
Haverhill	265	93	25	147	1	6	0	3	$651,878
Hawley	1	1	0	0	0	0	0	0	$0
Heath	5	4	0	1	0	0	0	0	$0
Hingham	74	19	12	43	0	1	0	1	$1,601,100

2013 Arson Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Falmouth	5	2	0	3	0	2	0	0	$35,000
Fitchburg	1	1	0	0	0	0	0	0	$1,000
Florida	0	0	0	0	0	0	0	0	$0
Foxborough	0	0	0	0	0	0	0	0	$0
Framingham	4	2	1	1	0	0	0	0	$54,500
Franklin	5	1	0	4	0	0	0	0	$0
Freetown	1	0	0	1	0	0	0	0	$0
Gardner	2	2	0	0	0	0	0	1	$66,200
Georgetown	0	0	0	0	0	0	0	0	$0
Gill	1	0	0	1	0	0	0	0	$0
Gloucester	6	1	0	5	0	1	0	0	$1,600
Goshen	0	0	0	0	0	0	0	0	$0
Gosnold	0	0	0	0	0	0	0	0	$0
Grafton	0	0	0	0	0	0	0	0	$0
Granby	4	0	0	4	0	0	0	0	$0
Granville	0	0	0	0	0	0	0	0	$0
Great Barrington	0	0	0	0	0	0	0	0	$0
Greenfield	4	0	0	4	0	0	0	0	$0
Groton	0	0	0	0	0	0	0	0	$0
Groveland	0	0	0	0	0	0	0	0	$0
Hadley	0	0	0	0	0	0	0	0	$0
Halifax	2	1	0	1	0	0	0	0	$1,000
Hamilton	3	0	0	3	0	0	0	0	$200
Hampden	4	0	0	4	0	0	0	0	$0
Hancock	0	0	0	0	0	0	0	0	$0
Hanover	0	0	0	0	0	0	0	0	$0
Hanson	0	0	0	0	0	0	0	0	$0
Hardwick	0	0	0	0	0	0	0	0	$0
Harvard	9	0	1	8	0	0	0	0	$1,150
Harwich	3	0	0	3	0	0	0	0	$150
Hatfield	0	0	0	0	0	0	0	0	$0
Haverhill	19	3	0	16	0	0	0	0	$4,420
Hawley	0	0	0	0	0	0	0	0	$0
Heath	1	0	0	1	0	0	0	0	$0
Hingham	4	1	1	2	0	0	0	0	$5,000

2013 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Hinsdale	0	0	0	0	0	0	0	0	$0
Holbrook	37	26	0	11	0	0	0	0	$425
Holden	46	21	6	19	0	0	0	3	$359,620
Holland	7	7	0	0	0	0	0	0	$3,000
Holliston	7	5	1	1	1	0	0	2	$622,500
Holyoke	272	128	23	121	1	3	0	3	$966,120
Hopedale	20	11	0	9	0	0	0	0	$7,200
Hopkinton	65	21	11	33	0	1	0	0	$7,439
Hubbardston	18	11	2	5	0	1	0	0	$34,050
Hudson	47	18	5	24	0	2	0	2	$632,850
Hull	23	12	3	8	0	1	0	0	$450,100
Huntington	11	1	0	10	0	0	0	1	$0
Ipswich	34	15	3	16	0	0	0	0	$370,600
Joint Base C. C.	11	1	0	10	0	0	0	0	$0
Kingston	46	16	8	22	0	0	0	0	$388,500
Lake Pleasant	0	0	0	0	0	0	0	0	$0
Lakeville	7	4	0	3	0	0	0	0	$0
Lancaster	24	10	3	11	0	0	0	0	$607,500
Lanesborough	3	0	0	3	0	0	0	0	$0
Lawrence	273	98	44	131	0	3	0	20	$3,743,115
Lee	3	3	0	0	0	1	0	1	$82,000
Leicester	34	8	5	21	0	1	0	0	$218,999
Lenox	28	22	0	6	0	2	0	1	$623,500
Leominster	140	85	11	44	0	3	0	0	$506,039
Leverett	3	3	0	0	0	0	0	0	$11,000
Lexington	42	24	10	8	0	0	0	2	$802,523
Leyden	3	2	0	1	0	0	0	0	$0
Lincoln	39	32	2	5	0	0	0	0	$377,073
Littleton	50	18	13	19	0	0	0	1	$201,956
Logan Airport FD	69	8	10	51	0	0	0	0	$10,449,092
Longmeadow	32	16	6	10	1	0	0	1	$322,867
Lowell	514	305	44	165	0	1	0	3	$3,152,803
Ludlow	64	32	12	20	0	1	0	0	$684,570
Lunenburg	43	20	6	17	1	0	0	0	$69,150
Lynn	483	366	25	92	0	7	0	11	$500
Lynnfield	95	78	3	14	0	0	0	5	$1,633,100

2013 Arson Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Hinsdale	0	0	0	0	0	0	0	0	$0
Holbrook	0	0	0	0	0	0	0	0	$0
Holden	0	0	0	0	0	0	0	0	$0
Holland	0	0	0	0	0	0	0	0	$0
Holliston	0	0	0	0	0	0	0	0	$0
Holyoke	6	2	0	4	0	0	0	0	$20,000
Hopedale	3	0	0	3	0	0	0	0	$0
Hopkinton	2	0	0	2	0	0	0	0	$0
Hubbardston	0	0	0	0	0	0	0	0	$0
Hudson	2	0	0	2	0	0	0	0	$3,000
Hull	1	0	0	1	0	0	0	0	$2,000
Huntington	6	0	0	6	0	0	0	0	$0
Ipswich	3	1	1	1	0	0	0	0	$0
Joint Base C. C.	4	0	0	4	0	0	0	0	$0
Kingston	1	0	0	1	0	0	0	0	$0
Lake Pleasant	0	0	0	0	0	0	0	0	$0
Lakeville	0	0	0	0	0	0	0	0	$0
Lancaster	1	0	0	1	0	0	0	0	$1,500
Lanesborough	0	0	0	0	0	0	0	0	$0
Lawrence	21	8	5	8	0	0	0	1	$86,900
Lee	0	0	0	0	0	0	0	0	$0
Leicester	3	0	0	3	0	0	0	0	$0
Lenox	2	1	0	1	0	2	0	1	$560,000
Leominster	4	1	1	2	0	1	0	0	$152
Leverett	0	0	0	0	0	0	0	0	$0
Lexington	0	0	0	0	0	0	0	0	$0
Leyden	0	0	0	0	0	0	0	0	$0
Lincoln	2	0	0	2	0	0	0	0	$4
Littleton	0	0	0	0	0	0	0	0	$0
Logan Airport FD	1	0	0	1	0	0	0	0	$0
Longmeadow	1	0	0	1	0	0	0	0	$0
Lowell	22	13	4	5	0	0	0	0	$266,700
Ludlow	3	1	0	2	0	0	0	0	$2,500
Lunenburg	2	1	1	0	1	0	0	0	$0
Lynn	0	0	0	0	0	0	0	0	$0
Lynnfield	3	0	0	3	0	0	0	0	$0

2013 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Malden	97	61	10	26	0	0	0	5	$31,750
Manchester	14	11	2	1	0	0	0	0	$0
Mansfield	62	14	14	34	0	1	0	1	$606,497
Marblehead	45	18	3	24	0	0	0	0	$389,227
Marion	16	8	0	8	0	0	0	0	$50,150
Marlborough	141	55	15	71	0	2	0	1	$1,384,925
Marshfield	115	63	13	39	0	1	0	3	$550,000
Mashpee	40	17	5	18	0	1	0	0	$225,900
Mattapoisett	21	5	1	15	0	0	0	0	$160,000
Maynard	23	13	2	8	0	0	0	0	$54,900
Medfield	19	12	1	6	0	1	0	0	$20,000
Medford	276	166	21	89	0	4	0	1	$725,150
Medway	0	0	0	0	0	0	0	0	$0
Melrose	9	5	2	2	0	1	0	0	$440,800
Mendon	15	4	1	10	0	0	0	0	$20,500
Merrimac	48	17	6	25	0	0	0	0	$168,000
Methuen	123	47	23	53	0	1	0	3	$281,020
Middleborough	115	37	23	55	0	1	0	2	$707,875
Middlefield	0	0	0	0	0	0	0	0	$0
Middleton	92	82	1	9	0	1	0	0	$72,502
Milford	147	48	12	87	0	4	0	5	$2,285,475
Millbury	48	28	9	11	0	2	0	0	$103,820
Millis	2	1	1	0	0	0	0	0	$6,000
Millville	12	9	0	3	0	0	0	0	$26,600
Milton	142	103	12	27	0	0	0	4	$157,000
Monroe	0	0	0	0	0	0	0	0	$0
Monson	51	18	1	32	0	0	0	0	$63,850
Montague Fire Districts									
Montague Center	*15*	*7*	*3*	*5*	*1*	*0*	*0*	*0*	*$366,000*
Turners Falls	*40*	*19*	*4*	*17*	*0*	*0*	*0*	*0*	*$66,150*
Monterey	2	2	0	0	0	0	0	0	$5,000
Montgomery	0	0	0	0	0	0	0	0	$0
Mount Washington	0	0	0	0	0	0	0	0	$0
Nahant	12	7	1	4	0	0	0	0	$650,000
Nantucket	46	36	0	10	0	0	0	1	$2,636,900
Natick	106	61	6	39	0	0	0	3	$710,675
Needham	57	17	10	30	0	0	0	0	$830,500

2013 Arson Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Malden	0	0	0	0	0	0	0	0	$0
Manchester	1	0	0	1	0	0	0	0	$0
Mansfield	1	0	0	1	0	0	0	0	$0
Marblehead	1	0	0	1	0	0	0	0	$0
Marion	2	0	0	2	0	0	0	0	$0
Marlborough	4	1	0	3	0	0	0	0	$1,500
Marshfield	4	0	0	4	0	0	0	0	$0
Mashpee	4	0	0	4	0	0	0	0	$0
Mattapoisett	3	0	0	3	0	0	0	0	$0
Maynard	1	1	0	0	0	0	0	0	$0
Medfield	3	0	0	3	0	0	0	0	$0
Medford	5	0	0	5	0	0	0	0	$0
Medway	0	0	0	0	0	0	0	0	$0
Melrose	0	0	0	0	0	0	0	0	$0
Mendon	1	0	0	1	0	0	0	0	$0
Merrimac	9	0	0	9	0	0	0	0	$0
Methuen	11	3	2	6	0	0	0	0	$35,000
Middleborough	3	0	0	3	0	0	0	1	$0
Middlefield	0	0	0	0	0	0	0	0	$0
Middleton	1	0	0	1	0	0	0	0	$0
Milford	2	1	0	1	0	0	0	0	$160,000
Millbury	0	0	0	0	0	0	0	0	$0
Millis	0	0	0	0	0	0	0	0	$0
Millville	0	0	0	0	0	0	0	0	$0
Milton	9	0	0	9	0	0	0	0	$0
Monroe	0	0	0	0	0	0	0	0	$0
Monson	3	0	0	3	0	0	0	0	$0
Montague Fire Districts									
Montague Center	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Turners Falls	*2*	*0*	*0*	*2*	*0*	*0*	*0*	*0*	*$0*
Monterey	0	0	0	0	0	0	0	0	$0
Montgomery	0	0	0	0	0	0	0	0	$0
Mount Washington	0	0	0	0	0	0	0	0	$0
Nahant	2	0	0	2	0	0	0	0	$0
Nantucket	0	0	0	0	0	0	0	0	$0
Natick	0	0	0	0	0	0	0	0	$0
Needham	1	0	1	0	0	0	0	0	$0

2013 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
New Ashford	0	0	0	0	0	0	0	0	$0
New Bedford	393	216	50	127	1	10	0	4	$2,108,572
New Braintree	0	0	0	0	0	0	0	0	$0
New Marlborough	9	5	0	4	0	0	0	0	$0
New Salem	4	1	0	3	0	0	0	0	$0
Newbury	63	39	8	16	0	0	0	0	$1,600
Newburyport	12	7	0	5	0	1	0	0	$124,850
Newton	178	80	11	87	1	3	0	9	$3,428,550
Norfolk	53	43	0	10	0	0	0	0	$295,535
North Adams	35	17	5	13	0	2	0	0	$182,820
North Andover	98	67	11	20	1	0	0	0	$2,665,656
North Attleboro	49	21	10	18	0	0	0	0	$52,856
North Brookfield	16	6	2	8	0	0	0	0	$5,112,000
North Reading	30	16	5	9	0	0	0	1	$19,202
Northampton	81	36	9	36	0	4	0	1	$2,601,047
Northborough	42	12	7	23	0	1	0	0	$469,419
Northbridge	64	34	7	23	0	3	0	5	$953,270
Northfield	21	8	1	12	0	0	0	0	$0
Norton	34	9	6	19	0	0	0	0	$322,698
Norwell	47	22	4	21	0	0	0	0	$415,350
Norwood	118	44	11	63	0	0	0	1	$566,050
Oak Bluffs	6	3	0	3	0	0	0	0	$0
Oakham	6	3	1	2	0	1	0	0	$1,020
Orange	0	0	0	0	0	0	0	0	$0
Orleans	18	6	2	10	0	0	0	0	$427,302
Otis	0	0	0	0	0	0	0	0	$0
Oxford	36	18	7	11	0	6	0	2	$377,007
Palmer Fire Districts									
Bondsville	*5*	*3*	*0*	*2*	*0*	*0*	*0*	*0*	*$0*
Palmer	*33*	*20*	*7*	*6*	*0*	*0*	*0*	*0*	*$467,195*
Three Rivers	*3*	*1*	*2*	*0*	*0*	*0*	*0*	*0*	*$0*
Paxton	16	13	0	3	0	0	0	0	$134,550
Peabody	153	65	18	70	1	0	0	3	$936,431
Pelham	3	2	1	0	0	0	0	0	$0
Pembroke	6	1	1	4	0	0	0	0	$16,700
Pepperell	58	47	4	7	0	0	0	0	$19,000

2013 Arson Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
New Ashford	0	0	0	0	0	0	0	0	$0
New Bedford	12	6	2	4	0	0	0	0	$51,900
New Braintree	0	0	0	0	0	0	0	0	$0
New Marlborough	0	0	0	0	0	0	0	0	$0
New Salem	1	0	0	1	0	0	0	0	$0
Newbury	1	0	0	1	0	0	0	0	$0
Newburyport	0	0	0	0	0	0	0	0	$0
Newton	1	0	0	1	0	0	0	0	$0
Norfolk	1	0	0	1	0	0	0	0	$0
North Adams	0	0	0	0	0	0	0	0	$0
North Andover	1	0	0	1	0	0	0	0	$16
North Attleboro	0	0	0	0	0	0	0	0	$0
North Brookfield	0	0	0	0	0	0	0	0	$0
North Reading	2	1	0	1	0	0	0	0	$4,000
Northampton	1	1	0	0	0	0	0	0	$0
Northborough	5	1	0	4	0	0	0	0	$167
Northbridge	2	0	1	1	0	0	0	0	$10,000
Northfield	1	0	0	1	0	0	0	0	$0
Norton	1	0	0	1	0	0	0	0	$0
Norwell	0	0	0	0	0	0	0	0	$0
Norwood	0	0	0	0	0	0	0	0	$0
Oak Bluffs	0	0	0	0	0	0	0	0	$0
Oakham	0	0	0	0	0	0	0	0	$0
Orange	0	0	0	0	0	0	0	0	$0
Orleans	1	0	0	1	0	0	0	0	$0
Otis	0	0	0	0	0	0	0	0	$0
Oxford	0	0	0	0	0	0	0	0	$0
Palmer Fire Districts									
Bondsville	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Palmer	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*$0*
Three Rivers	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Paxton	0	0	0	0	0	0	0	0	$0
Peabody	1	0	0	1	0	0	0	0	$50
Pelham	0	0	0	0	0	0	0	0	$0
Pembroke	0	0	0	0	0	0	0	0	$0
Pepperell	0	0	0	0	0	0	0	0	$0

2013 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Peru	0	0	0	0	0	0	0	0	$0
Petersham	0	0	0	0	0	0	0	0	$0
Phillipston	1	0	0	1	0	0	0	0	$0
Pittsfield	213	118	17	78	0	3	0	12	$2,439,864
Plainfield	2	2	0	0	0	0	0	0	$220,000
Plainville	21	9	5	7	0	0	0	0	$57,000
Plymouth	223	98	23	102	1	15	0	7	$5,735,251
Plympton	8	4	1	3	0	0	0	0	$386,100
Princeton	12	3	1	8	0	0	0	0	$1,700
Provincetown	28	21	2	5	0	0	0	0	$32,000
Quincy	554	357	33	164	0	4	0	31	$3,590,003
Randolph	177	136	16	25	0	0	0	0	$439,602
Raynham	58	22	10	26	0	0	0	3	$486,000
Reading	66	42	6	18	0	0	0	0	$156,000
Rehoboth	31	17	6	8	0	1	0	0	$155,550
Revere	469	345	23	101	0	2	0	3	$1,453,236
Richmond	5	3	2	0	0	0	0	0	$626,400
Rochester	5	3	1	1	0	0	0	0	$210,000
Rockland	42	13	2	27	1	0	0	2	$5,000
Rockport	4	2	0	2	0	0	0	0	$0
Rowe	5	3	0	2	0	0	0	0	$0
Rowley	30	22	1	7	0	1	0	0	$324,000
Royalston	2	1	1	0	0	0	0	0	$0
Russell	10	2	1	7	0	0	0	0	$34,555
Rutland	24	13	3	8	0	0	0	1	$441,500
Salem	185	67	12	106	1	5	0	0	$509,325
Salisbury	50	11	6	33	0	0	0	0	$2,120,600
Sandisfield	10	5	0	5	0	0	0	0	$0
Sandwich	118	80	10	28	0	2	0	1	$262,900
Saugus	154	51	18	85	0	0	0	3	$905,085
Savoy	2	0	0	2	0	0	0	0	$1,000
Scituate	70	27	9	34	0	2	0	1	$499,620
Seekonk	59	27	9	23	0	0	0	0	$739,004
Sharon	31	14	7	10	0	0	0	0	$308,800
Sheffield	0	0	0	0	0	0	0	0	$0

2013 Arson Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Peru	0	0	0	0	0	0	0	0	$0
Petersham	0	0	0	0	0	0	0	0	$0
Phillipston	0	0	0	0	0	0	0	0	$0
Pittsfield	9	5	0	4	0	0	0	0	$550
Plainfield	0	0	0	0	0	0	0	0	$0
Plainville	0	0	0	0	0	0	0	0	$0
Plymouth	6	1	1	4	0	0	0	0	$6,201
Plympton	0	0	0	0	0	0	0	0	$0
Princeton	0	0	0	0	0	0	0	0	$0
Provincetown	0	0	0	0	0	0	0	0	$0
Quincy	9	1	2	6	0	0	0	0	$0
Randolph	2	0	1	1	0	0	0	0	$11,000
Raynham	0	0	0	0	0	0	0	0	$0
Reading	4	0	1	3	0	0	0	0	$0
Rehoboth	0	0	0	0	0	0	0	0	$0
Revere	3	2	0	1	0	0	0	2	$230,500
Richmond	0	0	0	0	0	0	0	0	$0
Rochester	0	0	0	0	0	0	0	0	$0
Rockland	5	0	1	4	0	0	0	0	$0
Rockport	0	0	0	0	0	0	0	0	$0
Rowe	0	0	0	0	0	0	0	0	$0
Rowley	0	0	0	0	0	0	0	0	$0
Royalston	0	0	0	0	0	0	0	0	$0
Russell	0	0	0	0	0	0	0	0	$0
Rutland	1	1	0	0	0	0	0	0	$5,000
Salem	5	2	2	1	0	0	0	0	$8,500
Salisbury	6	0	0	6	0	0	0	0	$0
Sandisfield	1	0	0	1	0	0	0	0	$0
Sandwich	3	0	0	3	0	0	0	0	$0
Saugus	3	2	0	1	0	0	0	1	$7,300
Savoy	0	0	0	0	0	0	0	0	$0
Scituate	2	0	0	2	0	0	0	0	$0
Seekonk	0	0	0	0	0	0	0	0	$0
Sharon	1	0	0	1	0	0	0	0	$0
Sheffield	0	0	0	0	0	0	0	0	$0

2013 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Shelburne Fire Districts									
Shelburne Center	*14*	*7*	*3*	*4*	*0*	*1*	*0*	*1*	*$805,100*
Shelburne Falls	*6*	*3*	*1*	*2*	*0*	*0*	*0*	*0*	*$0*
Sherborn	29	12	1	16	0	0	0	0	$873,450
Shirley	5	4	1	0	0	1	0	0	$0
Shrewsbury	118	55	12	51	1	0	0	0	$667,900
Shutesbury	4	1	2	1	0	0	0	0	$17,500
Somerset	43	22	5	16	0	1	0	0	$441,250
Somerville	29	21	7	1	0	1	0	4	$2,798,200
South Hadley Fire Districts									
South Hadley #1	*34*	*19*	*2*	*13*	*0*	*0*	*0*	*0*	*$270,000*
South Hadley #2	*39*	*33*	*2*	*4*	*0*	*2*	*0*	*0*	*$200,000*
Southampton	6	0	3	3	0	0	0	0	$0
Southborough	27	9	6	12	0	0	0	0	$54,820
Southbridge	61	26	8	27	0	1	0	0	$845,200
Southwick	34	13	2	19	0	0	0	0	$20,700
Spencer	89	59	5	25	0	1	0	0	$264,000
Springfield	838	464	96	277	3	5	0	37	$10,096,175
Sterling	38	14	5	19	0	1	0	0	$184,600
Stockbridge	2	2	0	0	0	0	0	0	$252,000
Stoneham	67	57	8	2	0	0	0	0	$38,200
Stoughton	94	59	12	23	0	0	0	0	$175,450
Stow	21	8	2	11	0	0	0	0	$5,600
Sturbridge	43	23	10	10	0	0	0	0	$0
Sudbury	33	14	0	19	0	0	0	2	$198,200
Sunderland	1	1	0	0	0	0	0	0	$0
Sutton	41	20	5	16	0	0	0	0	$150,000
Swampscott	45	23	5	17	0	5	0	3	$712,100
Swansea	89	42	9	38	0	1	0	1	$24,500
Taunton	240	63	24	153	2	0	0	1	$1,050,201
Templeton	0	0	0	0	0	0	0	0	$0
Tewksbury	110	46	12	52	0	0	0	1	$817,450
Tisbury	15	7	4	4	0	0	0	0	$25,500
Tolland	0	0	0	0	0	0	0	0	$0
Topsfield	94	77	1	16	0	0	0	0	$502,720
Townsend	10	4	4	2	0	0	0	0	$14,726
Truro	2	1	1	0	0	0	0	0	$42,500

2013 Arson Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Shelburne Fire Districts									
Shelburne Center	*1*	*1*	*0*	*0*	*0*	*1*	*0*	*1*	*$550,000*
Shelburne Falls	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Sherborn	2	0	0	2	0	0	0	0	$0
Shirley	0	0	0	0	0	0	0	0	$0
Shrewsbury	5	1	1	3	0	0	0	0	$3,600
Shutesbury	0	0	0	0	0	0	0	0	$0
Somerset	0	0	0	0	0	0	0	0	$0
Somerville	0	0	0	0	0	0	0	0	$0
South Hadley Fire Districts									
South Hadley #1	*2*	*0*	*0*	*2*	*0*	*0*	*0*	*0*	*$0*
South Hadley #2	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Southampton	1	0	0	1	0	0	0	0	$0
Southborough	0	0	0	0	0	0	0	0	$0
Southbridge	1	1	0	0	0	0	0	0	$0
Southwick	0	0	0	0	0	0	0	0	$0
Spencer	0	0	0	0	0	0	0	0	$0
Springfield	21	5	13	3	1	0	0	6	$465,200
Sterling	0	0	0	0	0	0	0	0	$0
Stockbridge	0	0	0	0	0	0	0	0	$0
Stoneham	0	0	0	0	0	0	0	0	$0
Stoughton	5	1	0	4	0	0	0	0	$6,000
Stow	1	0	0	1	0	0	0	0	$0
Sturbridge	3	0	0	3	0	0	0	0	$0
Sudbury	2	0	0	2	0	0	0	0	$0
Sunderland	0	0	0	0	0	0	0	0	$0
Sutton	0	0	0	0	0	0	0	0	$0
Swampscott	0	0	0	0	0	0	0	0	$0
Swansea	4	1	0	3	0	0	0	0	$0
Taunton	36	5	0	31	0	0	0	0	$104,000
Templeton	0	0	0	0	0	0	0	0	$0
Tewksbury	2	0	0	2	0	0	0	0	$0
Tisbury	0	0	0	0	0	0	0	0	$0
Tolland	0	0	0	0	0	0	0	0	$0
Topsfield	4	0	0	4	0	0	0	0	$0
Townsend	0	0	0	0	0	0	0	0	$0
Truro	0	0	0	0	0	0	0	0	$0

2013 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Tyngsborough	30	7	4	17	0	0	0	0	$417,000
Tyringham	0	0	0	0	0	0	0	0	$0
Upton	28	10	2	16	0	0	0	0	$79,000
Uxbridge	56	23	9	24	0	2	0	2	$1,640,002
Wakefield	47	37	9	1	0	0	0	0	$1,710,000
Wales	0	0	0	0	0	0	0	0	$0
Walpole	80	51	6	23	0	0	0	0	$1,272,000
Waltham	170	59	26	85	0	1	0	0	$203,415
Ware	53	18	2	33	0	0	0	2	$506,036
Wareham Fire Districts									
Onset	*45*	*33*	*5*	*7*	*0*	*2*	*0*	*1*	*$0*
Wareham	*95*	*34*	*16*	*45*	*0*	*2*	*0*	*1*	*$398,553*
Warren	24	11	4	9	0	0	0	0	$49,900
Warwick	0	0	0	0	0	0	0	0	$0
Washington	0	0	0	0	0	0	0	0	$0
Watertown	77	32	9	36	0	0	0	2	$1,397,162
Wayland	35	13	3	19	0	1	0	1	$228,742
Webster	47	25	3	19	1	2	0	0	$739,200
Wellesley	57	31	8	18	0	0	0	0	$835,250
Wellfleet	18	7	3	8	0	0	0	0	$29,480
Wendell	1	1	0	0	0	0	0	0	$7,000
Wenham	14	8	2	4	0	0	0	0	$171,700
West Barnstable	15	7	4	4	0	0	0	0	$370,700
West Boylston	24	6	3	15	0	0	0	0	$25,800
West Bridgewater	41	7	9	25	0	0	0	0	$29,000
West Brookfield	3	3	0	0	0	0	0	0	$101,000
West Newbury	16	9	2	5	0	2	0	3	$1,727,583
West Springfield	118	61	21	36	0	5	0	3	$1,655,430
West Stockbridge	5	1	2	2	0	0	0	0	$402,000
West Tisbury	6	1	0	5	0	0	0	0	$0
Westborough	52	29	6	17	0	0	0	0	$858,800
Westfield	161	94	16	51	1	4	0	3	$1,441,530
Westford	54	15	8	31	0	0	0	2	$857,751
Westhampton	5	2	0	3	0	0	0	0	$100,000
Westminster	26	11	8	7	0	0	0	0	$502,600
Weston	49	19	7	23	0	0	0	0	$252
Westport	66	18	9	39	0	1	0	1	$1,577,629

2013 Arson Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Tyngsborough	0	0	0	0	0	0	0	0	$0
Tyringham	0	0	0	0	0	0	0	0	$0
Upton	3	0	0	3	0	0	0	0	$0
Uxbridge	4	2	0	2	0	0	0	0	$252,000
Wakefield	0	0	0	0	0	0	0	0	$0
Wales	0	0	0	0	0	0	0	0	$0
Walpole	0	0	0	0	0	0	0	0	$0
Waltham	4	3	1	0	0	0	0	0	$3,010
Ware	7	0	0	7	0	0	0	0	$7
Wareham Fire Districts									
Onset	*2*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*$0*
Wareham	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*$0*
Warren	1	1	0	0	0	0	0	0	$1,500
Warwick	0	0	0	0	0	0	0	0	$0
Washington	0	0	0	0	0	0	0	0	$0
Watertown	0	0	0	0	0	0	0	0	$0
Wayland	1	1	0	0	0	0	0	0	$300
Webster	0	0	0	0	0	0	0	0	$0
Wellesley	0	0	0	0	0	0	0	0	$0
Wellfleet	1	0	0	1	0	0	0	0	$0
Wendell	0	0	0	0	0	0	0	0	$0
Wenham	0	0	0	0	0	0	0	0	$0
West Boylston	4	0	0	4	0	0	0	0	$0
West Bridgewater	6	2	0	4	0	0	0	0	$5,000
West Brookfield	0	0	0	0	0	0	0	0	$0
West Newbury	0	0	0	0	0	0	0	0	$0
West Springfield	4	0	3	1	0	0	0	0	$30
West Stockbridge	0	0	0	0	0	0	0	0	$0
West Tisbury	1	0	0	1	0	0	0	0	$0
Westborough	0	0	0	0	0	0	0	0	$0
Westfield	2	1	1	0	0	0	0	0	$2,000
Westford	2	1	0	1	0	0	0	0	$0
Westhampton	0	0	0	0	0	0	0	0	$0
Westminster	2	0	1	1	0	0	0	0	$0
Weston	0	0	0	0	0	0	0	0	$0
Westport	4	0	0	4	0	0	0	0	$0

2013 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Westwood	106	77	10	19	0	0	0	1	$2,395,150
Weymouth	317	174	21	122	1	2	0	0	$937,185
Whately	5	1	1	3	2	0	0	0	$0
Whitman	7	2	1	4	0	0	0	0	$78,000
Wilbraham	41	21	3	17	0	4	0	0	$205,400
Williamsburg	10	3	2	5	0	0	0	0	$69,500
Williamstown	23	13	5	5	0	0	0	0	$31,300
Wilmington	88	40	17	31	0	1	0	0	$4,359,100
Winchendon	34	26	5	3	1	0	0	0	$679,500
Winchester	52	17	3	32	0	2	0	2	$1,164,800
Windsor	0	0	0	0	0	0	0	0	$0
Winthrop	82	59	3	20	0	1	0	0	$357,280
Woburn	70	42	23	5	0	1	0	0	$420,250
Worcester	1,454	774	82	598	0	0	0	36	$4,250,597
Worthington	1	1	0	0	0	0	0	0	$20,000
Wrentham	18	10	2	6	0	0	0	0	$54,567
Yarmouth	46	19	3	24	0	1	0	1	$128,421

2013 Arson Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Westwood	0	0	0	0	0	0	0	0	$0
Weymouth	8	2	0	6	0	0	0	0	$4,350
Whately	0	0	0	0	0	0	0	0	$0
Whitman	0	0	0	0	0	0	0	0	$0
Wilbraham	2	1	0	1	0	0	0	0	$6,000
Williamsburg	0	0	0	0	0	0	0	0	$0
Williamstown	1	0	0	1	0	0	0	0	$0
Wilmington	0	0	0	0	0	0	0	0	$0
Winchendon	1	1	0	0	0	0	0	0	$500
Winchester	5	1	0	4	0	0	0	0	$3,000
Windsor	0	0	0	0	0	0	0	0	$0
Winthrop	1	0	1	0	0	0	0	0	$4,400
Woburn	0	0	0	0	0	0	0	0	$0
Worcester	54	12	4	38	0	0	0	0	$107,310
Worthington	0	0	0	0	0	0	0	0	$0
Wrentham	2	0	0	2	0	0	0	0	$4
Yarmouth	2	0	0	2	0	0	0	0	$100

2013 Fires By Incident Type

Incident Type	Total Fires	% of Total	Civilian Deaths	Civilian Inj.	Fire Service Deaths	Fire Service Inj.	Dollar Loss
Structure Fires	17,353	58%	28	275	0	416	$212,300,327
Vehicle Fires	2,587	9%	10	24	0	16	27,305,997
Brush Fires	4,968	17%	3	2	0	29	297,854
Outside Rubbish Fires	3,075	10%	0	1	0	6	323,002
Special Outside Fires	850	3%	3	2	0	0	1,674,863
Cult. Veg. & Crop Fires	48	0.2%	0	0	0	1	60
Other Fires	977	3%	0	19	0	11	2,695,836
Total Fires	**29,828**	**100%**	**44**	**323**	**0**	**478**	**$244,597,939**

2013 Arsons* By Incident Type

Incident Type	Total Fires	% of Total	Civilian Deaths	Civilian Inj.	Fire Service Deaths	Fire Service Inj.	Dollar Loss
Structure Arsons	195	22%	0	7	0	29	$6,093,309
Vehicle Arsons	75	8%	2	0	0	0	387,751
Brush Arsons	323	36%	0	0	0	1	9,146
Outside Rubbish Arsons	79	9%	0	0	0	0	2,342
Special Outside Arsons	150	17%	2	0	0	0	9,624
Cult. Veg. & Crop Arsons	4	0.4%	0	0	0	0	1
Other Arsons	76	8%	0	2	0	0	106,538
Total Arsons	**902**	**100%**	**4**	**9**	**0**	**30**	**$6,608,710**

*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.

2013 Fires By County

County	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Barnstable	788	390	89	309	0	43	0	9	$7,503,850
Berkshire	480	294	38	148	0	11	0	18	6,616,515
Bristol	2,006	897	269	840	4	36	0	26	16,459,841
Dukes	38	15	7	16	0	0	0	0	64,750
Essex	2,950	1,511	268	1,171	6	35	0	73	21,987,364
Franklin	287	140	32	115	5	2	0	2	2,017,070
Hampden	2,056	1,087	240	729	8	33	0	53	19,258,956
Hampshire	511	244	42	225	1	9	0	19	6,194,238
Middlesex	5,052	2,999	428	1,625	5	41	0	71	45,147,639
Nantucket	43	36	0	7	0	0	0	1	2,636,900
Norfolk	2,883	1,799	238	846	1	13	0	41	15,564,682
Plymouth	1,891	823	230	838	2	36	0	32	17,793,818
Suffolk	6,886	4,992	349	1,545	5	26	0	66	54,178,816
Worcester	3,957	2,126	357	1,474	7	38	0	67	29,173,500
Total	**29,828**	**17,353**	**2,587**	**9,888**	**44**	**323**	**0**	**478**	**$244,597,939**

2013 Arsons By County

County	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Barnstable	44	7	0	37	0	3	0	0	$109,350
Berkshire	13	6	0	7	0	2	0	1	561,050
Bristol	90	31	4	55	0	0	0	4	1,003,500
Dukes	1	0	0	1	0	0	0	0	0
Essex	110	21	10	79	0	1	0	2	151,986
Franklin	20	1	0	19	0	1	0	1	550,000
Hampden	60	13	19	28	1	0	0	6	687,930
Hampshire	33	5	0	28	0	1	0	0	252
Middlesex	109	33	11	65	0	0	0	2	1,117,798
Nantucket	0	0	0	0	0	0	0	0	0
Norfolk	59	6	4	49	0	0	0	0	421,354
Plymouth	73	12	8	59	0	0	0	3	376,751
Suffolk	151	31	8	112	2	0	0	10	938,410
Worcester	139	29	11	99	1	1	0	1	690,279
Total	**902**	**195**	**75**	**632**	**4**	**9**	**0**	**30**	**$6,608,710**

2013 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	215,888	788	3.7	0	0.0	0.00	44	0.2
Berkshire	131,219	480	3.7	0	0.0	0.00	13	0.1
Bristol	548,285	2,006	3.7	4	2.0	0.07	90	0.2
Dukes	16,535	38	2.3	0	0.0	0.00	1	0.1
Essex	743,159	2,950	4.0	6	2.0	0.08	110	0.1
Franklin	71,372	287	4.0	5	17.4	0.70	20	0.3
Hampden	463,490	2,056	4.4	8	3.9	0.17	60	0.1
Hampshire	158,080	511	3.2	1	2.0	0.06	33	0.2
Middlesex	1,503,085	5,052	3.4	5	1.0	0.03	109	0.1
Nantucket	10,172	43	4.2	0	0.0	0.00	0	0.0
Norfolk	670,850	2,883	4.3	1	0.3	0.01	59	0.1
Plymouth	494,919	1,891	3.8	2	1.1	0.04	73	0.1
Suffolk	722,023	6,886	9.5	5	0.7	0.07	151	0.2
Worcester	798,552	3,957	5.0	7	1.8	0.09	139	0.2
Massachusetts	6,547,629	29,828	4.6	44	1.5	0.07	902	0.1

*Population statistics based on 2010 U.S. Census Bureau data.

2013 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 WX1 & Natural Disaster	Special Incident Type
Barnstable	36,527	41	24,258	1,942	3,105	1,464	5,471	130	116
Berkshire	11,606	14	6,672	698	1,444	603	2,101	17	57
Bristol	55,808	44	35,690	2,721	3,592	3,645	9,646	90	380
Dukes	436	0	47	54	40	55	238	0	2
Essex	93,111	94	52,560	4,000	12,790	6,341	16,456	65	805
Franklin	4,836	15	2,571	498	488	408	810	22	24
Hampden	44,621	88	26,466	1,837	3,376	5,152	7,492	13	197
Hampshire	13,389	47	8,497	641	807	787	2,504	11	95
Middlesex	148,831	132	85,239	8,876	14,966	9,283	25,153	90	5,092
Nantucket	2,673	3	1,244	251	174	83	911	1	6
Norfolk	82,242	131	49,398	4,857	7,878	5,394	12,634	93	1,857
Plymouth	76,851	94	48,638	5,276	7,061	5,354	9,744	403	281
Suffolk	91,097	76	50,489	4,480	12,114	7,399	16,180	15	344
Worcester	80,144	89	51,717	3,690	6,358	5,354	11,739	62	1,135
Massachusetts	**742,172**	**868**	**443,486**	**39,821**	**74,193**	**51,322**	**121,079**	**1,012**	**10,391**

[1] WX is the abbreviation for Weather.

M.G.L. Chapter 148 §26G – Sprinklers in Buildings or Additions

"Every building or structure, including any additions or major alterations thereto, which totals, in the aggregate, more than 7,500 gross square feet in floor area shall be protected throughout with an adequate system of automatic sprinklers in accordance with the provisions of the state building code. No such sprinkler system shall be required unless sufficient water and water pressure exists. For purposes of this section, the gross square footage of a building or structure shall include the sum total of the combined floor areas for all floor levels, basements, sub-basements and additions, in the aggregate, measured from the outside walls, irrespective of the existence of interior fire resistive walls, floors and ceilings. This section shall not apply to buildings used for agricultural purposes as defined in section 1A of chapter 128.

In such buildings or structures, or in certain areas of such buildings or structures, where the discharge of water would be an actual danger in the event of fire, the head of the fire department shall permit the installation of such other fire suppressant systems as are prescribed by the state building code in lieu of automatic sprinklers. Automatic suppressant or sprinkler systems shall not be required in rooms or areas of a telephone central office equipment building when such rooms or areas are protected with an automatic fire alarm system. Sprinkler systems shall not be required in open-air parking structures, defined as: buildings, structures, or portions thereof, used for parking motor vehicles and having not less than twenty-five per cent of the total wall area open to atmosphere at each level, utilizing at least two sides of the structure. This section shall not apply to buildings or additions used for residential purposes.

The head of the fire department shall enforce the provisions of this section.

Whoever is aggrieved by the head of the fire department's interpretation, order, requirement, direction or failure to act under the provisions of this section, may, within forty-five days after the service of notice thereof, appeal from such interpretation, order, requirement, direction or failure to act to the automatic sprinkler appeals board as provided in section two hundred and one of chapter six. The board may grant a reasonable waiver from the provisions of this section, or may allow the installation of a reasonable alternative or modified system of automatic sprinklers upon reviewing the characteristics of buildings that have architectural or historical significance."

As of 2010, this is no longer a local option, but is state law.

M.G.L. Chapter 148 §26H – Sprinklers in Boarding & Lodging Houses

"In any city or town which accepts the provision of this section, every lodging house or boarding house shall be protected throughout with an adequate system of automatic sprinklers in accordance with the provisions of the state building code… The head of the fire department shall enforce the provisions of this section.

For the purpose of this section, 'lodging house' or 'boarding house' shall mean a house where lodgings are let to six or more persons not within the second degree of kindred to the person conducting it, but shall not include fraternity houses or dormitories, rest homes or group homes licensed to or regulated by the agencies of the Commonwealth. Any lodging or boarding house subject to the provisions of this section shall be equipped with automatic sprinklers within five years of the acceptance of this act by a city or town…Whoever is aggrieved by the head of the fire department's interpretation…under the provisions of this section, may within forty-five days after the service of notice thereof, appeal from such interpretation, order or requirement to the board of appeals of the fire safety commission in section two hundred and one of chapter six."

Communities That Have Adopted M.G.L. Chapter 148 Section 26H

Abington	Dennis	Maynard	Sutton
Acton	Douglas	Medford	Swampscott
Acushnet	Dracut	Medway	Taunton
Amesbury	Easthampton	Melrose	Tewksbury
Amherst	Everett	Middleton	Turners Falls
Arlington	Fairhaven	Milford	Tyngsboro
Ashland	Fall River	Natick	Upton
Attleboro	Fitchburg	Needham	Wakefield
Auburn	Foxborough	Newburyport	Ware
Ayer	Framingham	Newton	Warren
Bedford	Franklin	North Andover	Watertown
Belmont	Gardner	North Reading	Wayland
Berkley	Georgetown	Northborough	Wenham
Beverly	Grafton	Norton	Westborough
Billerica	Hamilton	Paxton	Westford
Blackstone	Hanson	Peabody	Westminster
Boston	Haverhill	Pelham	Westport
Braintree	Holyoke	Plainville	Weston
Bridgewater	Hopedale	Plymouth	Westwood
Brockton	Hubbardston	Randolph	Whitman
Brookfield	Hull	Raynham	Wilmington
Brookline	Ipswich	Revere	Winchester
Burlington	Kingston	Russell	Winthrop
Canton	Lancaster	Rutland	Woburn
Chatham	Lawrence	Salem	Worcester
Chelmsford	Lee	Saugus	Wrentham
Chelsea	Leominster	Scituate	
Chicopee	Lowell	Seekonk	**Total: 134**
Clinton	Ludlow	Sharon	
Cohasset	Lunenburg	Somerset	
Concord	Lynn	Somerville	
Cummington	Lynnfield	Southborough	
Danvers	Malden	Sterling	
Dartmouth Dist. 1	Mansfield	Stoneham	
Dartmouth Dist. 3	Marlborough	Stoughton	
Dedham	Marshfield	Sudbury	

M.G.L. Chapter 148 §26I – Sprinklers in New Dwelling Units (4+ units)

"In a city, town or district which accepts the provisions of this section, any building hereafter constructed or hereafter substantially rehabilitated so as to constitute the equivalent of new construction and occupied in whole or in part for residential purposes and containing not less than four dwelling units including, but not limited to, lodging houses, boarding houses, fraternity houses, dormitories, apartments, townhouses, condominiums, hotels, motels and group residences, shall be equipped with an approved system of automatic sprinklers in accordance with the state building code. In the event that adequate water supply is not available, the head of the fire department shall permit the installation of such other fire suppression systems as are prescribed by the state building code in lieu of automatic sprinklers. Owners of building with approved and properly maintained installations may be eligible for a rate reduction on fire insurance."

Communities Which Have Adopted M.G.L. Chapter 148 Section 26I

Abington	Easton	Mansfield	S. Hadley-Dist. 1
Acton	Everett	Marblehead	S. Hadley-Dist. 2
Acushnet	Fairhaven	Marlborough	Southborough
Agawam	Fall River	Marshfield	Sterling
Amesbury	Falmouth	Mashpee	Stoneham
Amherst	Fitchburg	Maynard	Stoughton
Arlington	Foxborough	Medfield	Sudbury
Ashburnham	Framingham	Medford	Swampscott
Ashland	Franklin	Medway	Swansea
Athol	Georgetown	Melrose	Taunton
Attleboro	Gill	Middleton	Tewksbury
Avon	Grafton	Milford	Topsfield
Ayer	Great Barrington	Millbury	Townsend
Barnstable	Greenfield	Natick	Tyngsboro
Barre	Groton	Newton	Upton
Bedford	Hamilton	North Andover	Wakefield
Bellingham	Hanover	North Attleboro	Walpole
Belmont	Hanson	North Reading	Waltham
Berkley	Harwich	Northborough	Ware
Beverly	Haverhill	Norton	Watertown
Billerica	Hingham	Norwell	Wayland
Boston	Holden	Orange	Wellesley
Brewster	Holliston	Orleans	Wenham
Bridgewater	Holyoke	Oxford	West Barnstable
Brookfield	Hopedale	Paxton	West Boylston
Brookline	Hopkinton	Peabody	West Springfield
Burlington	Hubbardston	Pelham	Westborough
Canton	Hudson	Pembroke	Westford
Centerville	Hull	Plainville	Westminster
Chatham	Hyannis	Plymouth	Weston
Chelmsford	Ipswich	Randolph	Westport
Clinton	Kingston	Raynham	Westwood
Cohasset	Lancaster	Rehoboth	Whitman
Concord	Lawrence	Revere	Wilmington
Cotuit	Leominster	Rockland	Winchendon
Cummington	Lexington	Russell	Winchester
Danvers	Lincoln	Rutland	Winthrop
Dartmouth Dist. 1	Longmeadow	Salem	Woburn
Dartmouth Dist. 3	Lowell	Saugus	Wrentham
Dedham	Lunenburg	Scituate	Yarmouth
Dracut	Lynn	Shrewsbury	
Duxbury	Lynnfield	Somerset	**Total: 169**
E. Longmeadow	Malden	Somerville	

MFIRS
Massachusetts Fire Incident Reporting System

Department of Fire Services
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