The

# Massachusetts Fire Problem


## Massachusetts Fire Incident Reporting System

## 2018 Annual Report

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Thomas A. Turco, III
Secretary of Public Safety

Peter J. Ostroskey
State Fire Marshal

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 2019 1st and 2nd place winning entries of the 37th 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/Everyday."

A countywide contest was held for all students in grades 6-8. Eleven out of 14 counties participated with approximately 1,100 posters submitted. Posters were judged, and 1st and 2nd place county winners were chosen at MPIUA by an impartial panel of judges. All 1st place county winners were entered into the Massachusetts statewide contest. An award ceremony was held in honor of all county winners at the Crowne Plaza Boston, Natick, Massachusetts, on June 5, 2019, wherein the three state winners were announced and presented with their awards.

The front cover shows a drawing submitted by Madeline Fortier, a student at the Overlook Middle School, Ashburnham, Massachusetts. Madeline's poster was chosen as the 1st place winner in the Worcester county poster contest and was also automatically entered into the statewide contest, along with 11 other county winners, where it was chosen as the 1st place state winner.

The back cover shows a drawing submitted by Katie Carlisle, a student at the Holy Family Holy Name School, New Bedford, Massachusetts. Katie's poster was chosen as the 2nd place winner in the Bristol county poster contest and was also automatically entered into the statewide contest, where it as chosen as the 2nd place state winner.

MPIUA has generously sponsored the printing of the 2019 Annual Report of the Massachusetts Fire Incident Reporting System (MFIRS), as well as, the use of the 1st and 2nd place posters for the covers, for the last 36 years.

# Massachusetts Fire Incident Reporting System

# 2018 Annual Report

Publication Number: 20 – 177 - DFS - 01
Authorized by Gary Lambert, State Purchasing Agent

**Peter J. Ostroskey, State Fire Marshal**
Commonwealth of Massachusetts • Department of Fire Services
Post Office Box 1025 State Road • Stow, Massachusetts 01775
Telephone (978) 567-3300 • Facsimile (978) 567-3199

This report is also available in an electronic format through the Fire Data section of the Department of Fires Services website:

www.mass.gov/dfs/

# 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

# Table of Contents

Appendices

# Executive Summary

**Our Mission:** *The mission of the Department of Fire Services, through coordinated training, education, prevention, investigation, and emergency response, to provide the citizens of Massachusetts with the ability to create safer communities; to assist and support the fire service community in the protection of life and property; to promote and enhance firefighter safety; and to provide a fire service leadership presence in the Executive Office of Public Safety and Security in order to direct policy and legislation on all fire related matters.*

November 2019

This is the *2018 Annual Report of the Massachusetts Fire Incident Reporting System* (MFIRS), which summarizes the Massachusetts fire experience for 2018. It is based on the 25,504 individual fire reports submitted by members of 366 fire departments and fire districts. It is this effort that makes it possible to look at the total fire experience, to identify our fire problems and to develop strategies to address these issues. One of the goals of the Division of Fire Safety is to provide the fire service and the public with accurate and complete information about the fire experience in Massachusetts.

**16,169 Structure Fires, 2,465 Vehicle Fires, 6,870 Outside & Other Fires in 2018**
There were 25,504 fire and explosion incidents reported by fire departments to the Massachusetts Fire Incident Reporting System (MFIRS) in 2018. The 16,169 structure fires, 2,465 motor vehicle fires, and 6,870 outside and other fires caused 45 civilian deaths, one fire service death, 289 civilian injuries, 425 fire service injuries, and an estimated dollar loss of $229 million in property damages.

**Civilian Fire Deaths Down 22% From 2017**
Forty-five (45) civilians died in 40 Massachusetts fires in 2018. Civilian deaths decreased by 13, or 22%, from the 58 fire deaths in 2017. Twenty-four (24) men, 19 women, and two children died in Massachusetts' fires. Of the 45 civilian deaths in fires in 2018, 39 occurred in residential structures. Sixty percent (60%), of civilians died at night, at home, while they were sleeping and did not have working smoke alarms or residential sprinklers. Two (2) deaths occurred in two motor vehicle fires. Three (3) people were killed in three outside fires in 2018. In 2018 there were 1.76 civilian deaths for every 1,000 fires.

**Smoking Was Leading Cause of Fatal Fires in 2018**
Smoking was the leading cause of fatal fires and civilian fire deaths in 2018. These fires caused 13, or 33%, of the residential civilian fire deaths. The second leading cause of residential civilian fire deaths was electrical problems, causing 5 deaths, or 13%, and juvenile-set fires was third with three, or 8% of residential fire deaths.

**2 Child Fire Deaths**
Of the 45 civilian deaths in fires in 2018, two, or 5%, were children. Both siblings and died in the same residential fire with their father. One child was two-years old and his brother was one-years old.

**Merrimack Valley Natural Gas Explosions – 1 Civilian Death**
On Thursday, September 13, 2018 at approximately 4:30 p.m., Lawrence, Andover and North Andover experienced a man-made disaster that caused multiple explosions and fires that killed one person and injured many others. There was a large mobilization of state, fire and law enforcement resources to support the suppression efforts and public safety needs of the three communities. The cause was discovered to be an over pressurized gas line by Columbia Gas.

**Structure & Outside Fires Down in 2018**
The total number of reported fires decreased by 9% from 28,059 in 2017 to 25,504 in 2018. Structure fires decreased by 6% from 2017 to 2018. From 2017 to 2018, motor vehicle fires increased by 3%. Outside, brush, and other fires decreased by 19% 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 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 58% of the 965,176 total responses that were reported to MFIRS in 2018. The total number of calls reported to MFIRS increased by 27,496, or 3% in 2018.

**Cooking Was the Leading Cause of Residential Building Fires & Injuries**
Seventy-two percent (72%) of all residential building fires were caused by unattended and other unsafe cooking practices in 2018. Seventy-four percent (74%) of residential fires originated in the kitchen. Cooking also caused the most fire-related civilian injuries. Cooking fires caused 52, or 29% of all 2018 civilian fire injuries and one, or 4%, of residential fire deaths in 2018.

**Alarms Operated in 62% of Residential Fires**
Smoke or heat alarms operated in 8,475, or 62%, of the residential building fires in 2018. There were no working alarms in 3% of these incidents. Based on information reported, smoke alarm performance was undetermined in 3,779 incidents, or 28%, of Massachusetts' 2018 residential building fires.

**Alarms Operated in 53% of Building Fires that Caused Injuries**
Alarms operated in 53% of the building fires that caused injuries. When an occupant is alerted to the presence of fire, they may try to extinguish it, which could result in an injury. Or, the injury may have occurred as a result of escaping after the situation 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 9%**
Five hundred and fifty-one (551) Massachusetts fires were considered arson in 2018. The 134 structure arsons, 78 motor vehicle arsons, and 339 outside and other arsons caused

four civilian deaths, one fire service death, 13 civilian injuries, 43 fire service injuries, and an estimated dollar loss of $5.5 million. This is a 9% decrease in arson from the 681 reported in 2017.

Structure arsons decreased by 30%, motor vehicle arsons increased by 8% from 2017 to 2018. Overall motor vehicle arsons have 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 19%.

**Firefighters Injured at 1 of Every 3 Structure Arsons**

One of the most dangerous types of fires for firefighters in 2018 were structure arsons. Structure arsons accounted for 42, or 10%, of all firefighter injuries in 2018. These 42 injuries also represent 10% of the number of firefighter injuries at all structure fires. On average there was one firefighter injury for every three structure arsons.

**Conclusion**

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

We would like to thank the Massachusetts Property Insurance Underwriting Association for printing this report and for their support throughout the year. We also wish to thank Governor Charles D. Baker and Public Safety and Security Secretary Thomas A. Turco III for their commitment and support to the Massachusetts fire service through the Department of Fire Services.

We also wish to recognize the efforts of the staff of the Fire Data and Public Education Unit, Cynthia Ouellette, coordinator; Derryl Dion, research analyst and Julie Bergeron, office support specialist, within the Division of Fire Safety who manage the Massachusetts Fire Incident Reporting System and prepared this report.

Peter J. Ostroskey
State Fire Marshal

# 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**
Fire departments are 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 alarms, obstructions and hazards, combustible fibers, rubbish handling, crop ripening, pesticide storage, welding and storage, carbon monoxide, and unvented appliances. Fire departments 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 2018, 253 fire departments shared the $1,324,769 in S.A.F.E. funding.

**Fall River - Guyanne Veillard**

On the morning of Saturday, April 7, 2018, 14-year-old Guyanne Veillard was asleep when a fire started in her home. Guyanne awoke, smelled smoke, went to investigate and noticed clothes that were placed in a basket too close to a space heater in the hallway had caught on fire. She gathered her brother and sister into a bedroom and closed the door. She opened the bedroom window and threw pillows and blankets to the ground below and then assisted her brother and sister to escape out of the window. Once they were free she then lowered herself out of the window to safety. Fire Chief John Lynch of the Fall River Fire Department is proud of Guyanne for being brave and heroic and for doing what she was taught in the S.A.F.E. Program.

**The Senior S.A.F.E. Program**

With the success of the S.A.F.E. Program, the Senior SAFE Program was implemented in fiscal year 2015. The Legislature approved and $600,000 was funded through the Fire Standard Compliant Cigarette (CFSC) Program to provide public fire education grants to improve the fire and life safety of older adults throughout the Commonwealth. The primary mission of this program is to educate older adults on how to address the unique fire and life safety risks of their age group. The Senior SAFE Program is designed to create a partnership between older adults and fire departments through established providers of senior support services such as councils on aging, senior centers, visiting nurse associations, or other similar agencies. In fiscal year 2018, 241 fire departments shared the $600,000 in Senior SAFE funding.

**FF Todd Winner, Wayland Fire Department – 2018 PFALSE Educator of the Year**

Todd Winner began his career with the Wayland fire department in 2002 as a firefighter/EMT, and within a year began working with Student Awareness of Fire Education (S.A.F.E.). He became SAFE coordinator in 2013, and his efforts have built a

reputable, effective program. Winner is passionate about educating all residents, from preschool to older adults, and this is evident in the programs he has developed. In addition to teaching young students, Todd resurrected a high school internship program, of which he was the first intern in the 1998-1999 school year. The 16-week program focuses on skills and hands-on training from Essentials of Firefighting, Fourth Edition. Winner also developed a program called WAY-SECURE which is a voluntary program for residents of any age, with or without medical or cognitive conditions. It includes a structured data file, a File of Life, a home safety evaluation and the Safety Net tracking system. FF Winner has successfully built relationships around town that allow him to reach more residents with safety messages. He works with the Recreation Department and takes part in their Summer Adventure camp for children from kindergarten to grade five. Because of his relationships with many groups, Winner is a highly effective, trusted resource for the community. Over time, Wayland has experienced a drop in the frequency and severity of fire incidents which may be directly attributed to the S.A.F.E. and Senior SAFE programs.

**59 MA Departments Receive $9.4 Million in Federal Grants**

Fifty-nine (59) local Massachusetts fire departments received $9.4 million in federal grants during fiscal year 2018.

In the seventeenth year of the Federal Assistance to Firefighters Grant program, 59 Massachusetts fire departments received $9.4 million. Forty-nine (49) departments received $5.8 million for fire operations and firefighter safety. One (1) department received $297,143 for the purchase of firefighting vehicles. Eight (8) fire departments as the lead agency, received regional grants totaling $2.8 million.

Eleven (11) fire departments were awarded $6.2 million in Federal SAFER grants that allow for the hiring of more firefighters. In addition, the Massachusetts Firefighting Academy at the Department of Fire Services also received a grant of $500,000 for equipment.

The National Fire Protection Association (NFPA) based in Quincy, Massachusetts received a grant $922,129 for Fire Prevention and Safety. The Fire Protection Research Foundation in Quincy also received a Fire Prevention and Safety grant for $186,667.

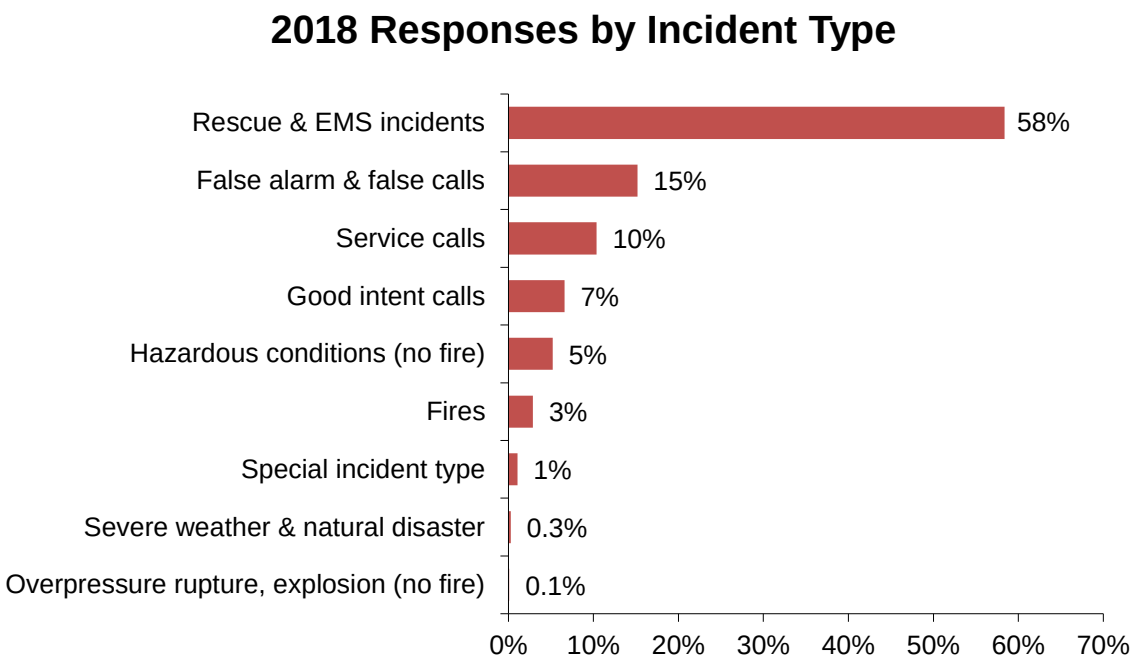
**97% of Massachusetts Fire Departments Participated in MFIRS**

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-seven (347), or 94.8%, of Massachusetts' fire departments reported at least one incident to MFIRS during 2018. Eight (8), or 2.2%, 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.

**58% of All Massachusetts Calls Were EMS Incidents**
In 2018, 348 fire departments in Massachusetts reported 965,176 responses[1] to MFIRS. Of these responses, 937,445 non-fire calls were voluntarily reported. This is 27,496 more incidents, or a 3% increase, from the 937,680 incidents reported in 2017.




Of these 937,445 non-fire incidents, there were 563,406 (58%) reported rescue and emergency medical services (EMS) calls; 146,402 (15%) reported false alarms or false calls; 100,120 (10%) reported service calls such as lock-outs, water or smoke problems, unauthorized burning or public service assistance; 63,614 (7%) reported good intent calls; 50,209 (5%) reported hazardous condition calls with no fire; 10,134 (1%) reported special incident type calls such as citizen complaints; 2,628 (0.3%) reported severe

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

weather and natural disaster incidents; and 932 (0.1%) reported overpressure, rupture, explosion or overheat calls with no fire.

Twenty-seven thousand seven hundred and thirty-one (27,731), or 3%, of the total responses submitted by Massachusetts fire departments were fires.

**Most Large Cities Voluntarily Reported All of Their Incidents**
Boston, the largest city in the Commonwealth, reported 84,758 non-fire incidents in 2018. The City of Worcester, the second largest city in Massachusetts, reported the second largest number non-fire incidents in 2018 with 33,610 incidents. The next five cities in terms of the number of non-fire calls reported were: Brockton with 26,128; Lowell with 16,430 calls; New Bedford with 15,420 calls; Cambridge with 15,381; and Springfield with 14,631 reported incidents in 2018.

**58% of All Fire Department Responses Were EMS Calls**
Fifty-eight percent (58%) of all reported 2018 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%) of all reported incidents in 2018 were motor vehicle accidents with injuries. Three percent (3%) were classified as rescue, EMS call, other. The fifth most reported call type in 2018 was alarm system sounded, no fire - unintentional, accounting for 3% of all reported incidents.

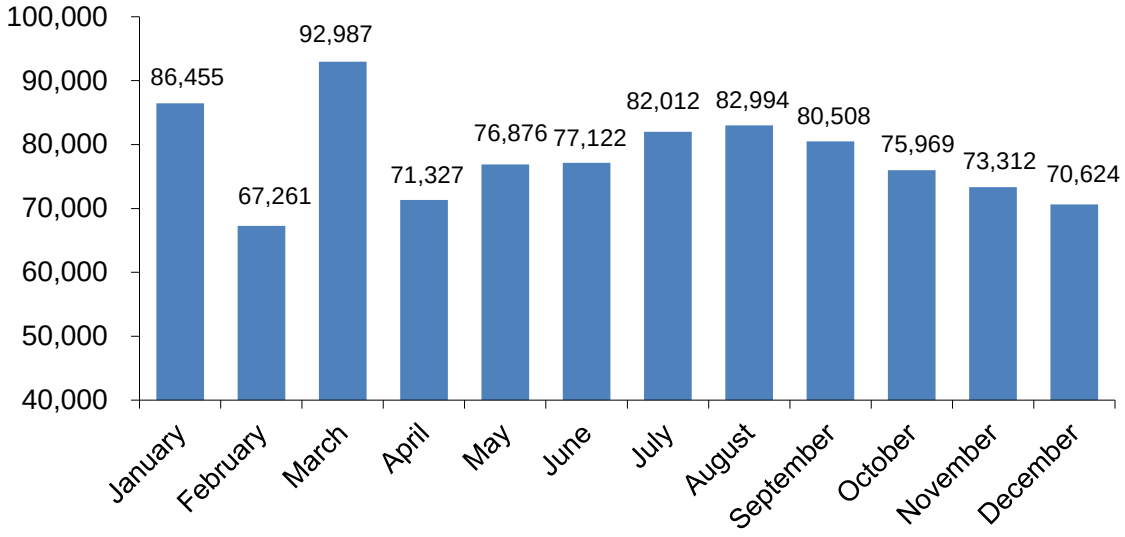
**Middlesex & Essex Counties Reported Over 1/3 of All Non-Fire Incidents**
Middlesex and Essex Counties reported a combined 34% of all non-fire incidents to MFIRS in 2018. Middlesex County reported 22% of these types of incidents and Essex County reported 12%. Suffolk County submitted the third most non-fire calls, totaling 11% of all the 2018 non-fire incidents. Nantucket County reported 0.3% non-fire incidents and Dukes County[2] reported 0.2% of all non-fire incidents reported to MFIRS in 2018.

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

**Non-Fire Incidents by Month**
March was the month with the most reported non-fire incidents in 2018 (10%), followed by January (9%), and August (9%). February was the month with the least reported non-fire incidents (7%). Statistically these incidents are spread evenly from month to month. Four (4) months each accounted for 9%, six months each accounted for 8% of the incidents, and one month accounted for 7%. The average number of monthly reported non-fire incidents in 2018 was 78,121 calls.

[2] Only 5 of the 7 local fire departments in Dukes County, Aquinnah, Edgartown, Oak Bluffs, Tisbury and West Tisbury reported non-fire incidents to MFIRS in 2018.

## Non-Fire Responses by Month




**Aid Given & Received**
In 2018, Massachusetts fire departments reported that they received mutual or automatic aid at 12,285, or 1%, of all calls. They also reported that they gave mutual, automatic or other aid to another fire department 20,600 times, or 2% of all calls.

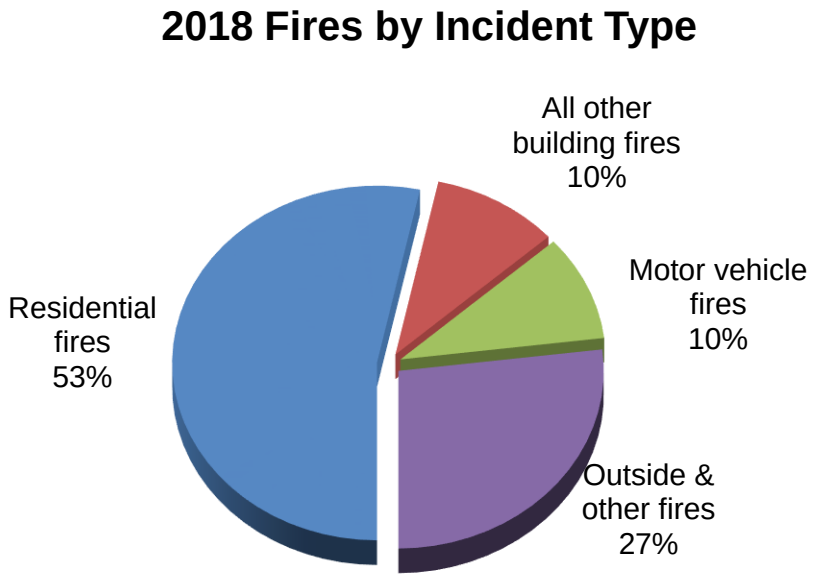
**Middlesex County Fire Departments Received the Most Aid**
Middlesex County fire departments reported receiving the most aid, accounting for 1,861 incidents, or 16%, of all aid received calls in 2018. These 16% of aid received calls represent 1% of their total calls. Worcester County accounted for 15% of all aid received calls, but these calls only accounted for 2% of their total calls. Norfolk County accounted for 14% of all aid received calls, but these calls only accounted for 2% of Norfolk County's total calls.

**Middlesex County Gave the Most Aid**
Middlesex County fire departments reported giving the most aid, accounting for 3,955 incidents, or 19%, of all aid given calls in 2018. These 3,955 calls represent 2% of all of Middlesex County's reported calls in 2018. Norfolk County accounted for 17% of all aid given calls in 2018, but these calls only accounted for 3% of their total calls. Worcester County accounted for 16% of all aid given calls, but these calls only accounted for 3% of their total calls. Plymouth County accounted for 10% of all aid given calls, but these calls only accounted for 2% of their total calls.

# Fires by Incident Type

**16,169 Structure Fires, 2,465 Vehicle Fires, 6,870 Outside & Other Fires in 2018**
There were 25,504 fire and explosion incidents reported by fire departments to the Massachusetts Fire Incident Reporting System (MFIRS) in 2018. The 16,169 structure fires, 2,465 motor vehicle fires, and 6,870 outside and other fires caused 45 civilian deaths, one fire service death, 289 civilian injuries, 425 fire service injuries, and an estimated dollar loss of $229 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 2018, 63% of all reported fires were structure fires. The majority of fires were in people's homes. Fifty-three percent (53%) of all fires in the Commonwealth and 84% of all structure fires occurred in someone's home; only 10% of all fires, and 16% of all structure fires occurred in a type of building other than a residence. Ten percent (10%) were reported motor vehicle fires, while 27% were classified as outside and other fires.




**16,169 Structure Fires, 40 Civilian Deaths & 236 Civilian Injuries**
Massachusetts fire departments reported 16,169 structure fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2018. These fires killed 40 civilians, one firefighter and caused 236 civilian injuries, 401 fire service injuries, and an estimated $202 million in property damage. Structure fires accounted for 63% of the total incidents and 89% of the civilian deaths in 2018. Structure fires dropped 6% from the previous

year. There were 134 structure arsons in 2018. Structure fires in the Massachusetts Fire Incident Reporting System include any fires that occur inside or on a structure.

**2,465 Motor Vehicle Fires Account for 10% of Reported Fires**

The 2,465 motor vehicle fires caused two civilian deaths, 14 civilian injuries, 11 fire service injuries, and an estimated $22.9 million in property damage. These incidents accounted for 10% of the reported 25,504 fires in 2018. Motor vehicle fires accounted for 4% of civilian fire deaths. Motor vehicle fires increased by 3% from 2017. There were 78 motor vehicle arsons in 2018. 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.

**6,870 Brush, Trash, and Other Outside Fires**

The 6,870 outside and other fires caused three civilian deaths, 39 civilian injuries, 13 fire service injuries, and an estimated dollar loss of $4 million. The 3,523 trees, grass and brush fires, 2,014 outside rubbish fires, 761 special outside fires, 42 cultivated vegetation or crop fires, and 800 other fires accounted for 27% of the total fire incidents in 2018, and 7% of the civilian fire deaths. These fires were down 19% from the 8,477 outside and other fire incidents reported in 2017. There were 339 outside and other arsons in 2018. 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.

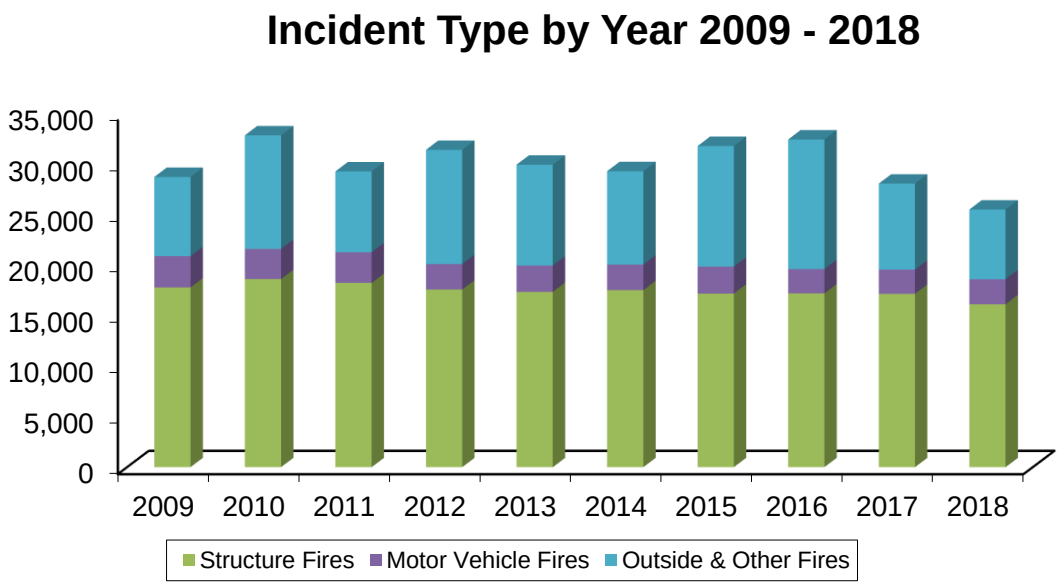
The following table indicates the total number of fires and the subsequent breakdown into structure fires, motor vehicle fires and outside and other fires for the years 2009 through 2018. The total number of fire incidents in 2018 decreased by 9% from the 28,059 incidents reported in 2017. Overall, fires have been on a slightly decreasing trend since 2008.

| Year | Total Fires | Structure Fires | Vehicle Fires | Other Fires |
|---|---|---|---|---|
| 2018 | 25,504 | 16,169 | 2,465 | 6,870 |
| 2017 | 28,059 | 17,197 | 2,385 | 8,477 |
| 2016 | 32,408 | 17,241 | 2,399 | 12,768 |
| 2015 | 31,768 | 17,226 | 2,652 | 11,890 |
| 2014 | 29,273 | 17,549 | 2,528 | 9,196 |
| 2013 | 29,921 | 17,393 | 2,597 | 9,931 |
| 2012 | 31,362 | 17,618 | 2,511 | 11,233 |
| 2011 | 29,263 | 18,274 | 3,016 | 7,973 |
| 2010 | 32,823 | 18,656 | 2,978 | 11,189 |
| 2009 | 28,707 | 17,819 | 3,081 | 7,807 |

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

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

structure fires steadily increased peaking in 2010, and since have been declining. 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. However 2018 was the third lowest reported number of brush fires since 1988 when MFIRS started to keep records[4].




# Structure Fires

**16,169 Structure Fires Account for 63% of Reported Fires, 89% of Fire Deaths**

The 16,169 structure fires caused 40 civilian deaths, one fire service death, 236 civilian injuries, 401 fire service injuries, and an estimated dollar loss of $202 million. The average structure fire caused $17,197 in property damage. Structure fires accounted for 63% of reported fires and 89% of the civilian fire deaths in 2018.

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 decreased by 1,028, or 6%, from the 17,197 reported in 2017.

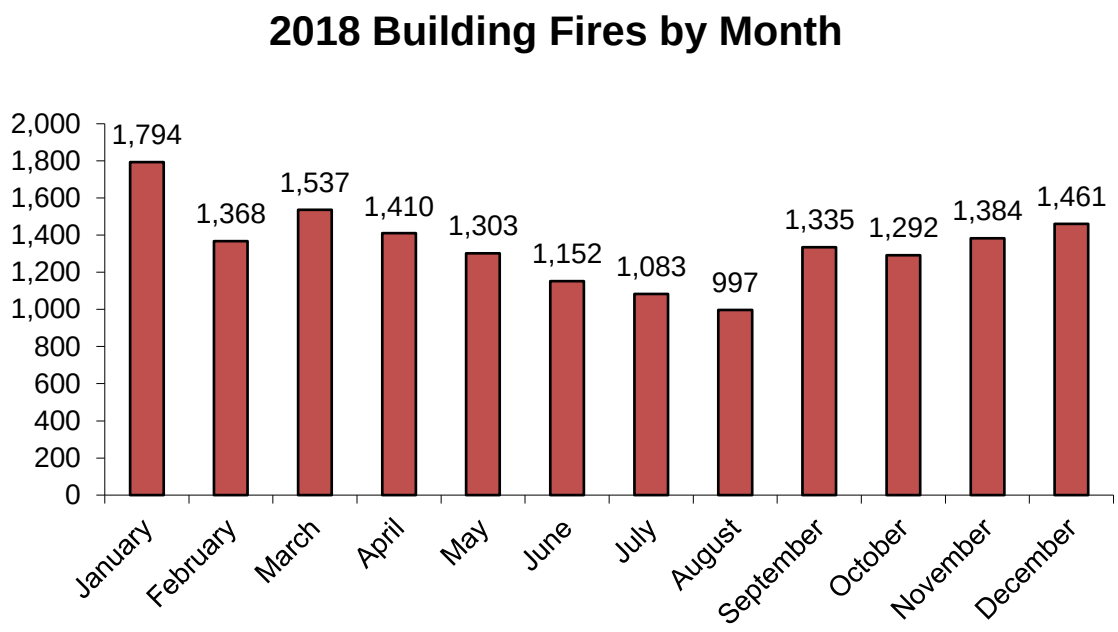
[4] This is not a false positive as 2018 had the most incidents ever reported to MFIRS – 965,389 total incidents reported.

# 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.

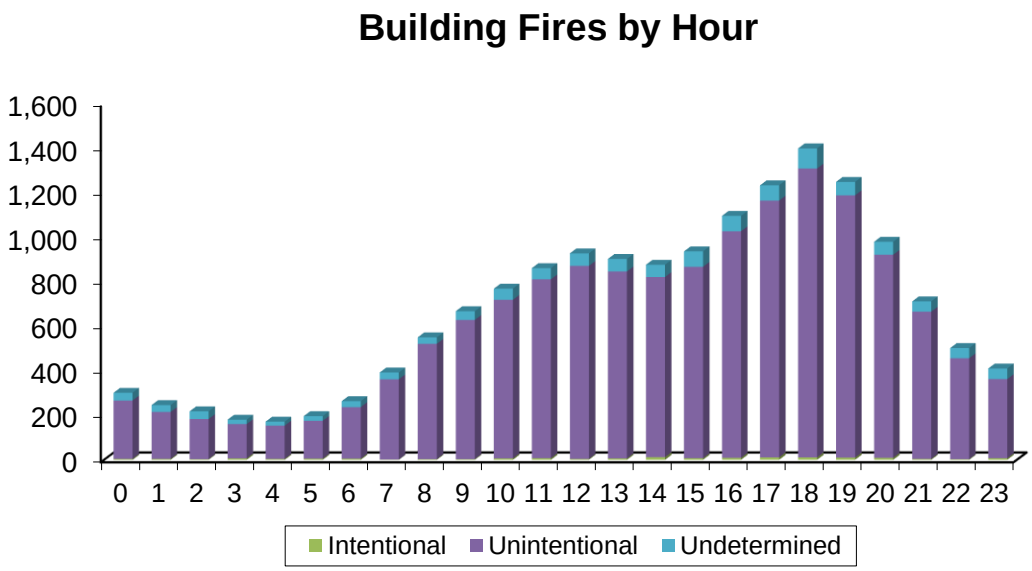
There were 16,102 building fires of different types in Massachusetts in 2018. These 16,102 building fires accounted for 99.6% of all structure fires in Massachusetts.

**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 2018. March ranked second and December had the third largest number of building fires. The warmer months had significantly fewer building fires. The fewest fires occurred in August, and July had the second lowest frequency of these incidents; June had the third lowest number of building fires in 2018.




**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 2:00 p.m. and 9:00 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.




**85% of Building Fires Occurred in Residential Occupancies**

Eighty-five percent (85%) of the state's 16,102 building fires, 39 of the 40 civilian building fire deaths and the one firefighter death 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.

**Lynn Building Fires Have Most Injuries**

- On June 25, 2018, the Lynn Fire Department was called to fire in a six-unit apartment building. The fire was started by individuals setting off fireworks in the street and one ricocheting to the second floor porch and igniting combustibles. The fire extended up and out to the rest of the second and third floors. Thirty-four (34) firefighters were injured at this fire. Alarms were present but it was undetermined if they operated. The building did not have sprinklers. Damages from this fire were estimated to be 484,000.

- On June 21, 2018, at 5:03 p.m., the Lynn Fire Department was called to an electrical fire in a three-unit apartment building. The fire was caused by arcing in a first floor bathroom. Thirty (30) firefighters were injured at this fire. Most of them were for

exposure to asbestos. Alarms were present and alerted the occupants. Sprinklers were not present. Damages from this fire were estimated at $50,000.

**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 | 687 | 4% | 10 | 10 | 0 | 0 | $4,604,565 | $6,702 |
| Educational | 232 | 1% | 0 | 0 | 0 | 0 | 2,414,913 | 10,409 |
| Institutional | 398 | 2% | 2 | 2 | 0 | 0 | 350,341 | 880 |
| **Residential** | **13,613** | **85%** | **364** | **212** | **1** | **39** | **168,170,051** | **12,354** |
| *1- & 2-Family homes* | *4,611* | *29%* | *151* | *104* | *1* | *23* | *94,660,746* | *20,529* |
| *Apartments* | *6,714* | *42%* | *203* | *98* | *0* | *15* | *66,134,740* | *9,850* |
| *All other residential* | *2,288* | *14%* | *10* | *10* | *0* | *1* | *7,374,565* | *3,223* |
| Mercantile, business | 671 | 4% | 17 | 4 | 0 | 0 | 12,460,308 | 18,570 |
| Basic industry | 48 | 0.3% | 0 | 1 | 0 | 0 | 1,873,501 | 39,031 |
| Manufact., processing | 84 | 0.5% | 2 | 1 | 0 | 1 | 3,326,200 | 39,538 |
| Storage properties | 201 | 1% | 6 | 4 | 0 | 0 | 8,026,108 | 39,931 |
| Special properties | 134 | 1% | 0 | 0 | 0 | 0 | 174,631 | 1,303 |
| Unclassified | 39 | 0.1% | 0 | 0 | 0 | 0 | 353,600 | 9,067 |
| **Total** | **16,102** | **100%** | **401** | **234** | **1** | **40** | **$201,722,518** | **$12,528** |

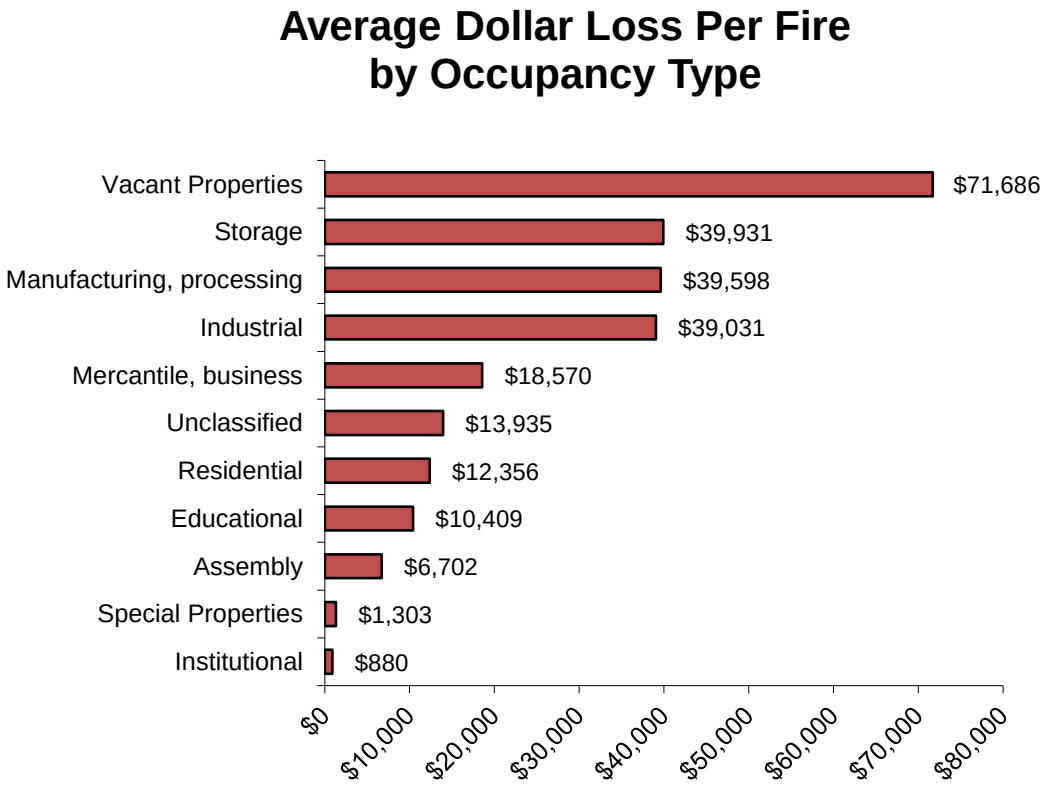
**Occupancy Group Definitions**

- **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[5] had the highest dollar loss per fire of any property type. In 2018, the average dollar loss for a building fire at a vacant property was $71,686. This is a 91% decrease over the 2017 average dollar loss per storage property fire at $789,962 per fire[6]. Storage properties had the second highest dollar loss per fire for any property type. In 2018, the average dollar loss for a storage facility fire was $39,931.




[5] 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.

[6] In 2017, $170 million, or 54% of all structure fire dollar loss was from 3 fires in buildings under construction in Waltham, Boston and Weymouth

# 2018 Massachusetts Building Fires by Property Use

| MFIRS Code | Property Use | # of Building Fires |
|---|---|---|
| | **Assembly** | **691** |
| 100 | Assembly, other | 30 |
| 110 | Fixed use recreation places, other | 11 |
| 111 | Bowling alley | 3 |
| 113 | Electronic amusement center | 2 |
| 115 | Roller rink: indoor or outdoor | 2 |
| 116 | Swimming facility: indoor or outdoor | 2 |
| 121 | Ballroom, gymnasium | 4 |
| 122 | Convention center, exhibition hall | 2 |
| 123 | Stadium, arena | 2 |
| 124 | Playground | 4 |
| 129 | Amusement center: indoor/outdoor | 2 |
| 130 | Places of worship, funeral parlors | 4 |
| 131 | Church, mosque, synagogue, temple, chapel | 73 |
| 134 | Funeral parlor | 2 |
| 140 | Clubs, other | 12 |
| 141 | Athletic/health club | 12 |
| 142 | Clubhouse | 18 |
| 143 | Yacht Club | 1 |
| 150 | Public or government, other | 15 |
| 151 | Library | 4 |
| 152 | Museum | 8 |
| 154 | Memorial structure, including monuments & statues | 2 |
| 155 | Courthouse | 5 |
| 160 | Eating, drinking places | 50 |
| 161 | Restaurant or cafeteria | 368 |
| 162 | Bar or nightclub | 22 |
| 170 | Passenger terminal, other | 3 |
| 171 | Airport passenger terminal | 4 |
| 173 | Bus station | 3 |
| 174 | Rapid transit station | 16 |
| 181 | Live performance theater | 1 |
| 182 | Auditorium or concert hall | 1 |
| 183 | Movie theater | 3 |
| | **Educational** | **233** |
| 200 | Educational, other | 29 |
| 210 | Schools, non-adult | 23 |
| 211 | Preschool | 10 |
| 213 | Elementary school, including kindergarten | 35 |
| 215 | High school/junior high school/middle school | 54 |
| 241 | Adult education center, college classroom | 54 |

| MFIRS Code | Property Use | # of Building Fires |
|---|---|---|
| 254 | Day care, in commercial property | 24 |
| 255 | Day care, in residence, licensed | 4 |
| | **Institutional** | **399** |
| 300 | Health care, detention, & correction, other | 29 |
| 311 | 24-hour care Nursing homes, 4 or more persons | 105 |
| 321 | Mental retardation/development disability facility | 64 |
| 322 | Alcohol or substance abuse recovery center | 65 |
| 323 | Asylum, mental institution | 6 |
| 331 | Hospital - medical or psychiatric | 67 |
| 332 | Hospices | 1 |
| 340 | Clinics, Doctors offices, hemodialysis centers | 12 |
| 341 | Clinic, clinic-type infirmary | 9 |
| 342 | Doctor, dentist or oral surgeon's office | 13 |
| 361 | Jail, prison (not juvenile) | 12 |
| 363 | Reformatory, juvenile detention center | 11 |
| 365 | Police station | 5 |
| | **Residential** | **13,612** |
| 400 | Residential, other | 833 |
| 419 | 1 or 2 family dwelling | 4,611 |
| 429 | Multifamily dwellings | 6,713 |
| 439 | Boarding/rooming house, residential hotels | 511 |
| 449 | Hotel/motel, commercial | 171 |
| 459 | Residential board and care | 178 |
| 460 | Dormitory type residence, other | 477 |
| 462 | Sorority house, fraternity house | 34 |
| 464 | Barracks, dormitory | 84 |
| | **Mercantile, Business** | **672** |
| 500 | Mercantile, business, other | 127 |
| 511 | Convenience store | 25 |
| 519 | Food and beverage sales, grocery store | 168 |
| 529 | Textile, wearing apparel sales | 6 |
| 539 | Household goods, sales, repairs | 13 |
| 549 | Specialty shop | 31 |
| 557 | Personal service, including barber & beauty shops | 13 |
| 559 | Recreational, hobby, home repair sales, pet store | 7 |
| 564 | Laundry, dry cleaning | 25 |
| 569 | Professional supplies, services | 8 |
| 571 | Service station, gas station | 20 |
| 579 | Motor vehicle or boat sales, services, repair | 39 |
| 580 | General retail, other | 19 |
| 581 | Department or discount store | 8 |

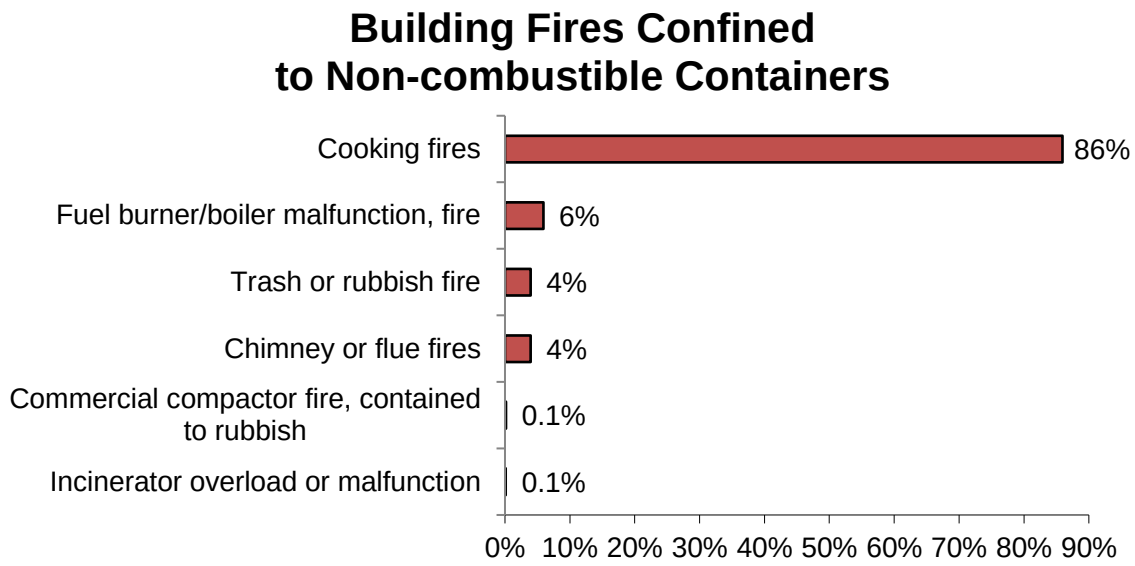
| MFIRS Code | Property Use | # of Building Fires |
|---|---|---|
| 592 | Bank | 20 |
| 593 | Office: veterinary or research | 3 |
| 596 | Post office or mailing firms | 7 |
| 599 | Business office | 133 |
| | **Industrial, Utility, Defense, Agriculture, Mining** | **48** |
| 600 | Utility, defense, agriculture, mining, other | 3 |
| 610 | Energy production plant, other | 2 |
| 614 | Steam or heat generating plant | 1 |
| 615 | Electric generating plant | 4 |
| 629 | Laboratory or science laboratory | 16 |
| 631 | Defense, military installation | 1 |
| 639 | Communications center | 2 |
| 640 | Utility or Distribution system, other | 6 |
| 642 | Electrical distribution | 5 |
| 647 | Water utility | 2 |
| 648 | Sanitation utility | 3 |
| 655 | Crops or orchard | 1 |
| 669 | Forest, timberland, woodland | 1 |
| 679 | Mine or quarry | 1 |
| | **Manufacturing, Processing** | **84** |
| 700 | Manufacturing, processing | 84 |
| | **Storage** | **201** |
| 800 | Storage, other | 15 |
| 807 | Outside material storage area | 2 |
| 808 | Outbuilding or shed | 73 |
| 819 | Livestock, poultry storage | 16 |
| 880 | Vehicle storage, other | 9 |
| 881 | Parking garage, (detached residential garage) | 38 |
| 882 | Parking garage, general vehicle | 10 |
| 888 | Fire station | 4 |
| 891 | Warehouse | 30 |
| 898 | Dock, marina, pier, wharf | 4 |
| | **Outside or Special Property** | **134** |
| 900 | Outside or special property, other | 26 |
| 919 | Dump, sanitary landfill | 2 |
| 921 | Bridge, trestle | 3 |
| 922 | Tunnel | 3 |
| 926 | Outbuilding, protective shelter | 9 |
| 931 | Open land or field | 7 |
| 935 | Campsite with utilities | 3 |

| MFIRS Code | Property Use | # of Building Fires |
|---|---|---|
| 936 | Vacant lot | 4 |
| 938 | Graded and cared-for plots of land | 7 |
| 940 | Water area, other | 2 |
| 946 | Lake, river, stream | 1 |
| 951 | Railroad right of way | 2 |
| 960 | Street, other | 17 |
| 961 | Highway or divided highway | 2 |
| 962 | Residential street, road or residential driveway | 20 |
| 963 | Street or road in commercial area | 7 |
| 965 | Vehicle parking area | 14 |
| **981** | **Construction site** | **5** |
| | **Unclassified** | **40** |
| NNN | None | 10 |
| UUU | Undetermined | 6 |
| 000 | Property Use, other | 24 |
| | **Total Building Fires** | **16,102** |

**79% of Building Fires Are Confined to Non-Combustible Containers**

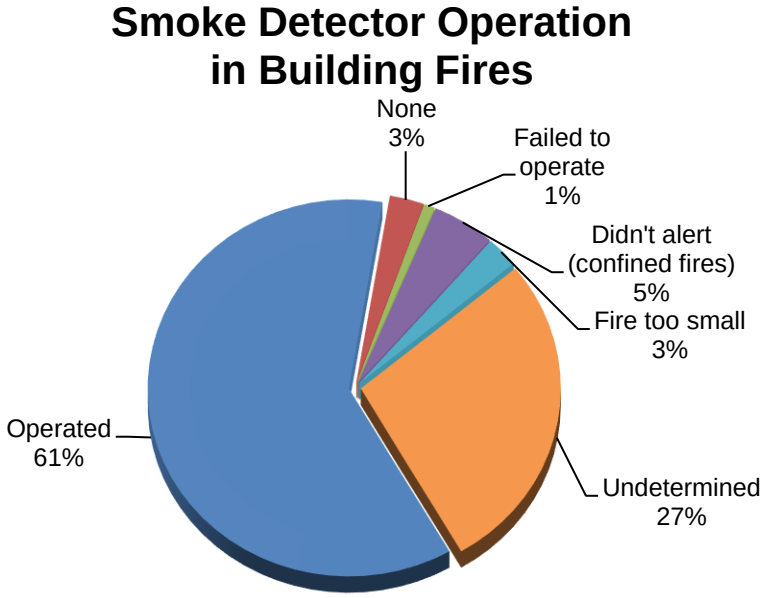
Twelve thousand seven hundred and three (12,703), or 79%, of all building fires were reported as confined to non-combustible containers in 2018. Confined building fires decreased by 920 incidents, or 7%, from the 13,623 reported in 2017.

| Incident Type | # of Incidents | % All Building Fires | % Confined to Non-combustible containers |
|---|---|---|---|
| Cooking fires | 10,916 | 68% | 86% |
| Chimney or flue fires | 503 | 3% | 4% |
| Incinerator overload or malfunction | 12 | 0.1% | 0.1% |
| Fuel burner/boiler malfunction, fire | 752 | 5% | 6% |
| Commercial compactor fire, contained to rubbish | 17 | 0.1% | 0.1% |
| Trash or rubbish fire | 503 | 3% | 4% |
| Total | 12,703 | 79% | 100% |




**Detectors Operated in 61% of Building Fires**

Smoke or heat detectors operated in 9,824, or 61%, of the building fires in 2018. In 5% of these fires[7], the detectors did not alert the occupants. Detectors were present but did not operate in 1% of these incidents. In 3% 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 4,449 incidents, or 27%, of the building fires in 2018.




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

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 | 435 | 4 | 47 | 25 | 13 | 163 | 687 |
| Educational | 157 | 3 | 13 | 10 | 5 | 44 | 232 |
| Institutional | 301 | 1 | 17 | 7 | 6 | 66 | 398 |
| Residential | 8,474 | 126 | 681 | 333 | 215 | 3,779 | 13,608 |
| Mercantile, business | 358 | 3 | 21 | 29 | 45 | 215 | 671 |
| Basic industry | 15 | 0 | 2 | 5 | 12 | 14 | 48 |
| Manufacturing | 29 | 2 | 1 | 12 | 8 | 32 | 84 |
| Storage properties | 22 | 1 | 1 | 2 | 122 | 50 | 198 |
| Special properties | 19 | 0 | 33 | 0 | 15 | 67 | 134 |
| Unclassified | 13 | 2 | 4 | 1 | 3 | 16 | 39 |
| **Total** | **9,823** | **142** | **820** | **424** | **444** | **4,446** | **16,099** |

**$4.2 Million Fire in Revere Is Largest Loss Building Fire**

- On September 16, 2018, at 2:08 p.m., the Revere Fire Department was called to a fire of undetermined cause at 10 Franklin Ave., a 45-unit apartment building. Four (4) firefighters were injured at this fire. Alarms were present and alerted the occupants. Sprinklers were not present. Damages from this fire were estimated to be $4.2 million.

**Boston Has 2nd Largest Loss Building Fire in 2018**

- On May 12, 2018, at 5:58 a.m., the Boston Fire Department was called to a six-alarm fire at 1212 VFW Pkwy, a 60-unit apartment building of undetermined cause. No one was injured at this fire. Alarms were present and alerted the occupants of the building. A partial sprinkler system was present but it was not reported if it operated. Damages from this fire were estimated to be $2.6 million.

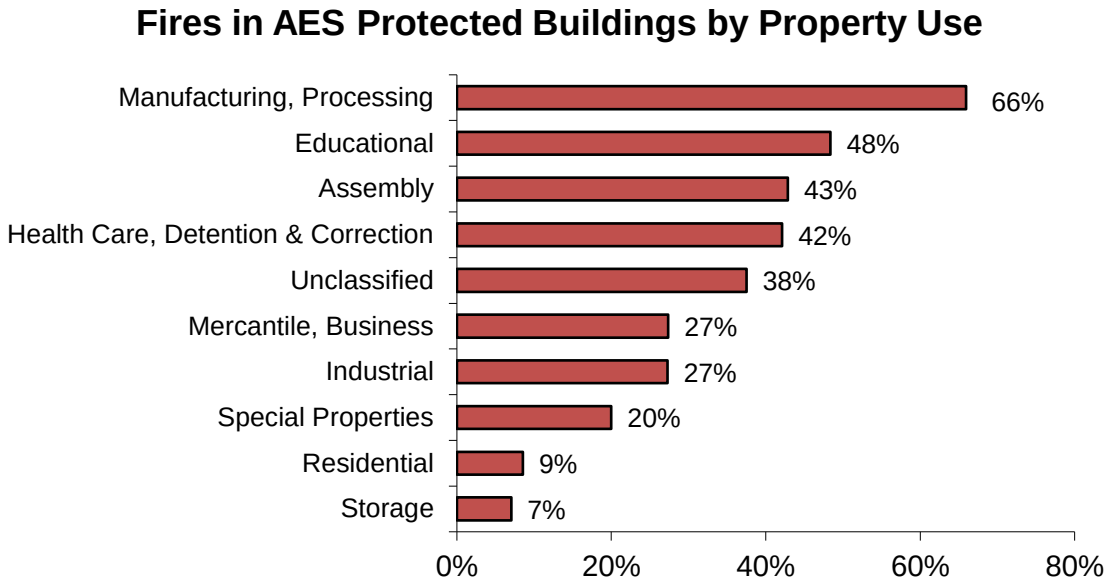
Overall, there were 29 large loss building fires reported to MFIRS in 2018 with a total combined dollar loss of $46.1 million, representing 23% of all the estimated dollar loss of Massachusetts' building fires in 2018.

**13% of Unconfined Fires Occurred in Buildings with AES**

Overall, 421, or 13%, of the 3,300 unconfined building fires in 2018 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

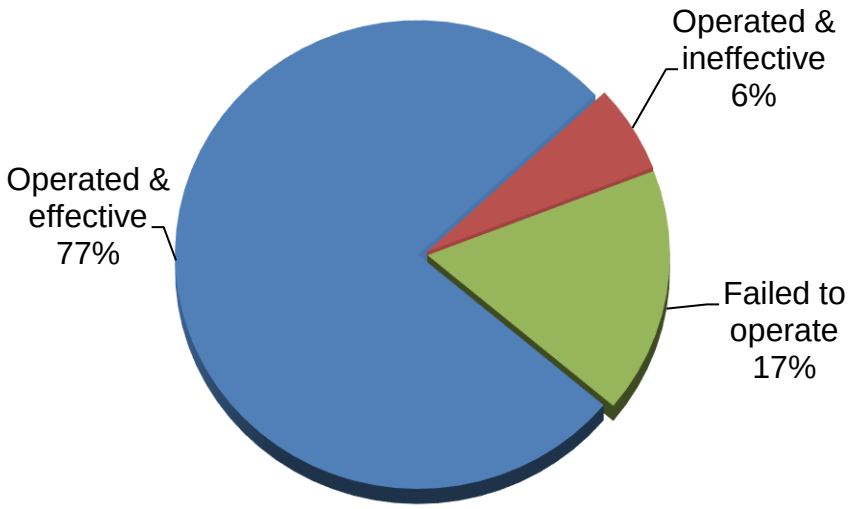
processing facilities and institutional properties were most likely to have an AES. Sixty-six percent (66%) of the fires in manufacturing or processing facilities and 48% of the fires in educational facilities occurred in an AES protected structure. Nine percent (9%) of residential fires and 7% of fires in storage facilities occurred in buildings with an automatic extinguishing system.




**AES Work in 85% of Building Fires When Installed & Maintained**

One hundred and sixty-five (165) building fires were in buildings protected by an automatic extinguishing system, which had a reported fire large enough for the AES to activate in Massachusetts in 2018. Of these 165 fires, the systems were effective in 127, or 77%, and ineffective in 10, or 6%, of these incidents. AES were present but failed to operate in 28, or 17%, of these 165 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 | 10 | 8 | 31 | 18 | 2 | 75 |
| Educational | 3 | 0 | 12 | 6 | 0 | 21 |
| Institutional | 2 | 0 | 14 | 7 | 0 | 23 |
| Residential | 76 | 12 | 130 | 84 | 7 | 312 |
| Mercantile, business | 12 | 3 | 35 | 27 | 1 | 79 |
| Basic industry | 0 | 0 | 5 | 1 | 1 | 7 |
| Manufacturing | 15 | 3 | 13 | 8 | 1 | 40 |
| Storage properties | 5 | 2 | 4 | 3 | 0 | 14 |
| Special properties | 1 | 0 | 2 | 0 | 0 | 3 |
| Unclassified | 2 | 0 | 1 | 1 | 0 | 4 |
| **Total** | **136** | **28** | **247** | **155** | **12** | **578** |

**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,

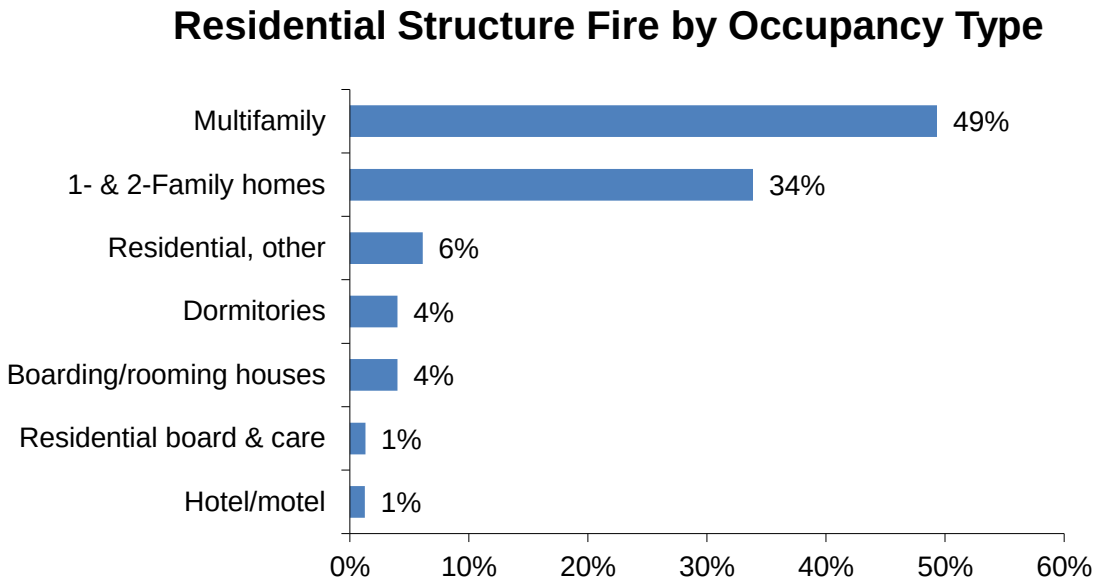
1998. This took effect in 1988. All new high rises are required to have automatic sprinklers.

**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 13,613, or 84%, of the 16,116 building fires occurred in residential occupancies. These fires caused 39 civilian deaths, one fire service death, 212 civilian injuries, 364 fire service injuries and an estimated dollar loss of $168.2 million. The average dollar loss per fire was $12,354. The total number of reported residential building fires decreased by 788, or less than 5%, from the 14,401 reported in 2017.

**Almost 1/2 of All Residential Fires Occurred in Apartments**
Almost half, or 49%, of all residential building fires in 2018 occurred in multifamily apartment buildings. Thirty-four percent (34%) of these fires happened in one- or two-family homes. Dormitories accounted for 4% of residential fires in Massachusetts. Another 4% occurred in rooming houses. Residential board and care facilities and hotels or motels each accounted for 1% of the residential building fires in 2018. Six percent (6%) of residential building fires occurred in unclassified residences.




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 | 4,611 | 34% | 151 | 104 | 0 | 23 | $94,660,746 |
| Multifamily | 6,714 | 49% | 203 | 98 | 1 | 15 | 66,134,740 |
| Rooming houses | 511 | 4% | 0 | 0 | 0 | 0 | 206,957 |
| Hotels & motels | 171 | 1% | 1 | 3 | 0 | 0 | 376,508 |
| Residential board & care | 178 | 1% | 1 | 1 | 0 | 0 | 261,212 |
| Dormitories | 595 | 4% | 0 | 2 | 0 | 0 | 400,432 |
| Unclassified | 833 | 6% | 8 | 4 | 0 | 1 | 6,129,456 |
| **Total** | **13,613** | **100%** | **364** | **212** | **1** | **39** | **$168,170,051** |

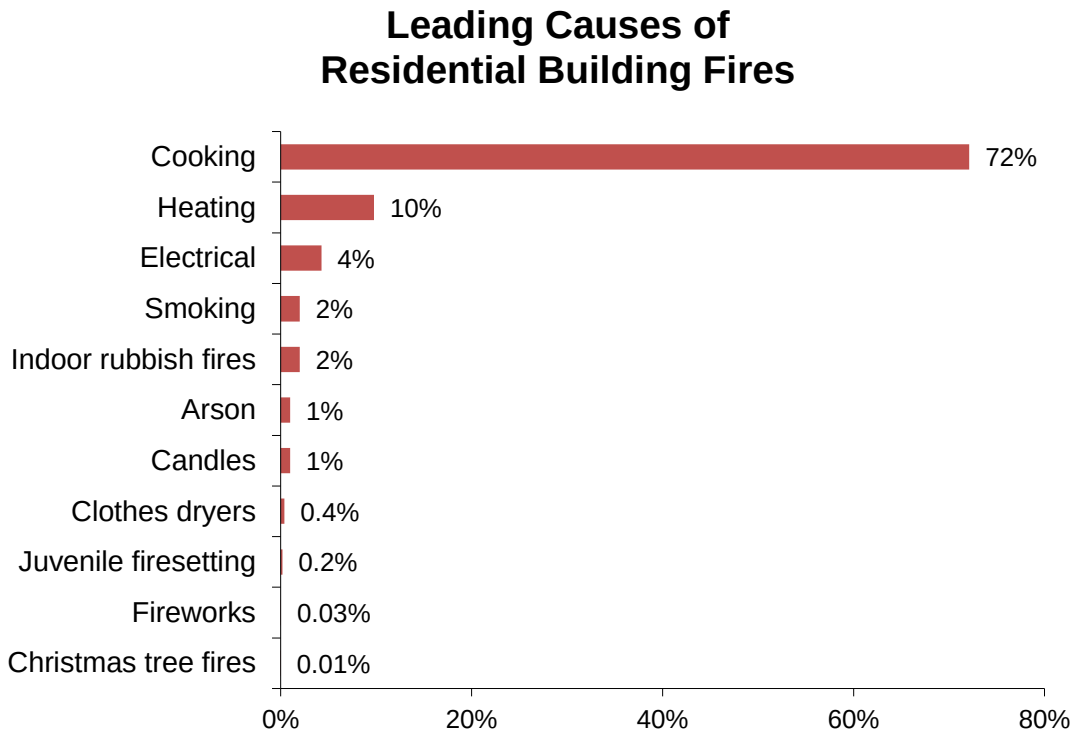
**Residential Occupancy Sub-Group Definitions**

- **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 Almost 3/4 of Residential Building Fires**

Cooking was the leading cause of residential building fires, accounting for 9,816, or 72%, of the 13,613 incidents. Heating equipment accounted for 1,330, or 10%, of the total fires. Electrical problems caused 583, or 4%, of incidents. The unsafe use and disposal of smoking materials accounted for 302, or 2%, of these incidents. Indoor rubbish fires were the cause of 300, or 2%, of residential building fires. Arson accounted for 106, or 1%, of residential building fires. Seventy-five (75), or 1%, were caused by candles. Clothes dryer fires were the cause for 53, or 0.4%, of these incidents. Juvenile firesetting accounted for 24, or 0.2%, of residential building fires. Fireworks caused four, accounting for 0.03%; and there was one Christmas tree fire, accounting for 0.01% of residential fires in Massachusetts in 2018.

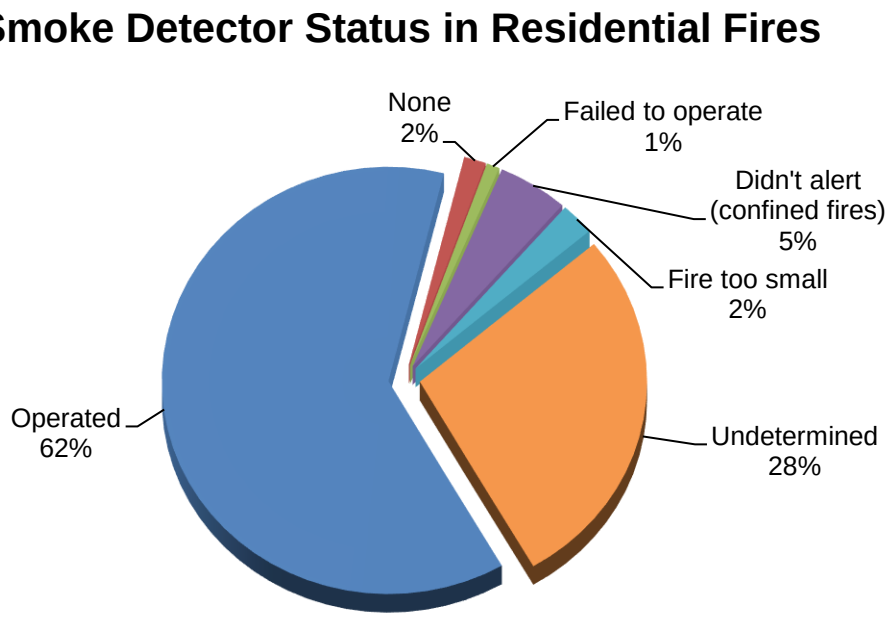


## 2018 MA Home Fires Confined to Non-Combustible Containers

| Incident Type | # of Incidents | % Residential Fires | % Confined to Non-combustible containers | Dollar Loss | Average Dollar Loss |
|---|---|---|---|---|---|
| Cooking fires | 9,466 | 70% | 87% | $ 637,249 | $ 67 |
| Chimney or flue fires | 482 | 4% | 4% | $ 226,144 | $ 469 |
| Incinerator overload or malfunction | 5 | 0.04% | 0.05% | $ 4,200 | $ 840 |
| Fuel burner/boiler malfunction, fire | 669 | 5% | 6% | $ 238,272 | $ 356 |
| Commercial compactor fire, confined to rubbish | 5 | 0.04% | 0.05% | $ 0 | $ 0 |
| Trash or rubbish fire | 288 | 2% | 3% | $ 61,513 | $ 214 |
| Total | 10,915 | 80% | 100% | $ 1,167,378 | $ 107 |

**Alarms Operated in 62% of Fires**

Smoke or heat alarms operated in 8,475, or 62%, of the residential building fires in 2018. In 5% of these fires[8], the alarms did not alert the occupants. Alarms were present but did not operate in 1% of these incidents. In 2% of these fires, no alarms were present at all. The fire was too small to trigger the alarm in 2% of the residential fires. Smoke alarm performance was undetermined in 3,779 incidents, or 28%, of Massachusetts' 2018 residential building fires.




**All Houses Must Have Alarms**

All houses must have smoke alarms according to either the state fire or building codes. Under the provisions of Massachusetts General Law Chapter 148, Section 26E, all

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

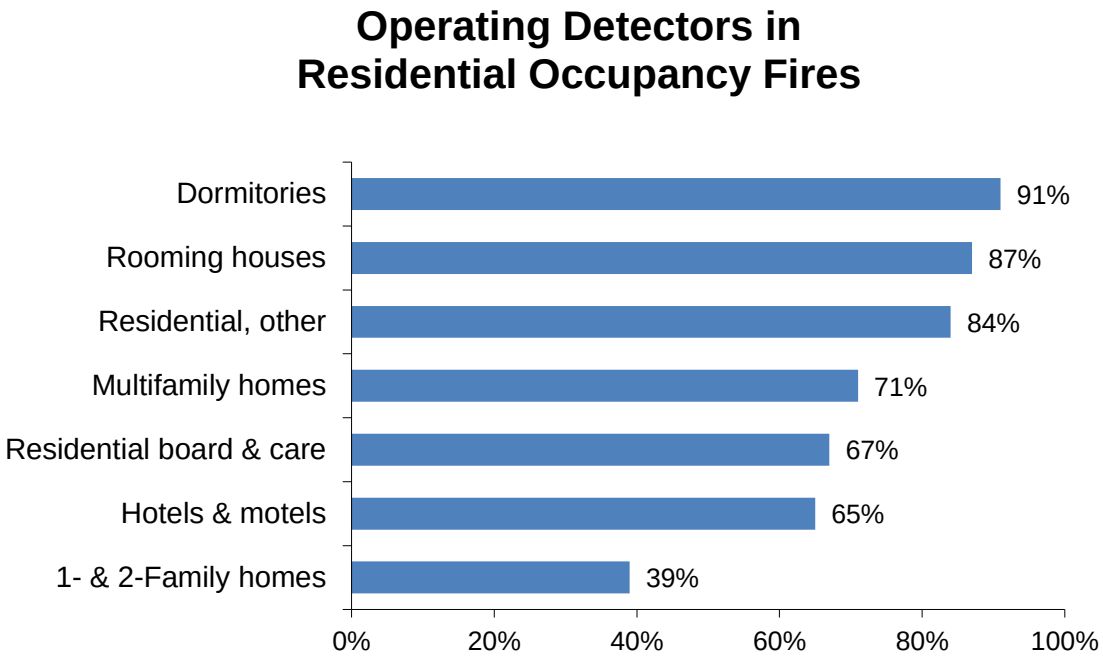
buildings containing one to five dwelling units built prior to 1975 must be equipped with approved smoke alarms. This statute took effect in March 2006. Under M.G.L. Chapter 148 Section 26F, the fire department verifies compliance with the law. The State Building code has required all new homes built since 1975 to have smoke alarms.

**New Homes Must Have Alarms in Bedroom Areas**
At a minimum, smoke alarms should be installed on every floor of the home and at the bottom of the basement stairwell. The Massachusetts Building Code requires smoke alarms 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 alarm sounding in the hallway. People who sleep with their bedroom door closed should install an alarm inside their bedroom. After alarms are installed, they need to be regularly tested and maintained. All it 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 alarms do not last forever. The life span for a typical smoke alarm, 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 alarm. If there is no date, the alarm should be replaced because it is already more than 10 years old. Alarms should be tested monthly and the batteries should be replaced twice a year. Alarms should be kept free of dust and never painted over.

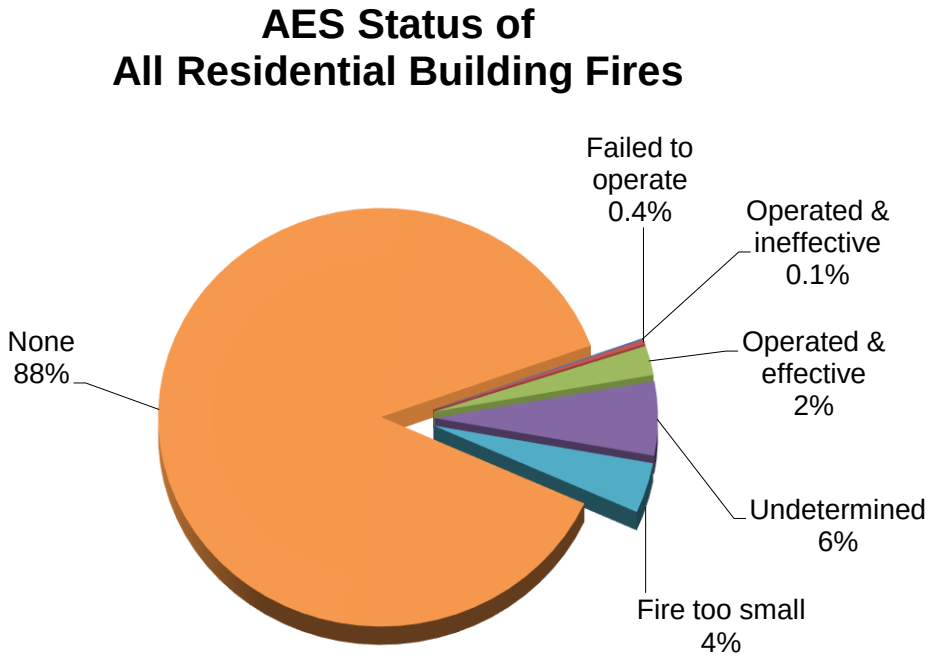
**29% of Failed Alarms Had No Batteries or Dead Ones**
Of the 126 fires where smoke alarms were present but failed to operate, 32, or 25%, failed because the batteries were either missing or disconnected. Five (5), or 4%, did not operate because of dead batteries. Fifteen (15), or 12%, failed because of a power failure, shutoff or disconnect. Seven (7) alarms, or 6%, failed from a lack of maintenance such as not cleaning dust from the alarm or painting over the alarm. Four (4) units, or 3%, failed because they were defective. Another four, or 3%, failed from improper installation or placement. For 59 cases, or 47%, the reason the alarm failed was not determined.

**1- & 2-Family Homes Had Lowest Percentage of Operating Alarms**
One- and two-family homes were the least likely residential occupancies to have operating smoke alarms. Dormitories were the most likely residential occupancy to have operating smoke alarms in 2018. Rooming houses were the second most likely residence to have working smoke alarms. Unclassified residences and hotels or motels and residential board and care facilities were the next most likely residential occupancies to have operating smoke alarms. The following chart shows the percentage of operating smoke alarms in fires in residential occupancies.




**AES Present in Only 7% of Residential Building Fires**
In 2018, only 3,338 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 76, or 2%, of the 3,338 residential building fires. AES were present and operated ineffectively in three, or 0.1%, of these fires. In 12, or 0.1%, of the fires in residential occupancies, the system did not operate. In 130, or 4%, the fire was too small to activate the system. In 2,926, or 88%, of the cases, there were no systems present or installed. AES performance was not classified in 191, or 6%, of the incidents involving residential building fires.



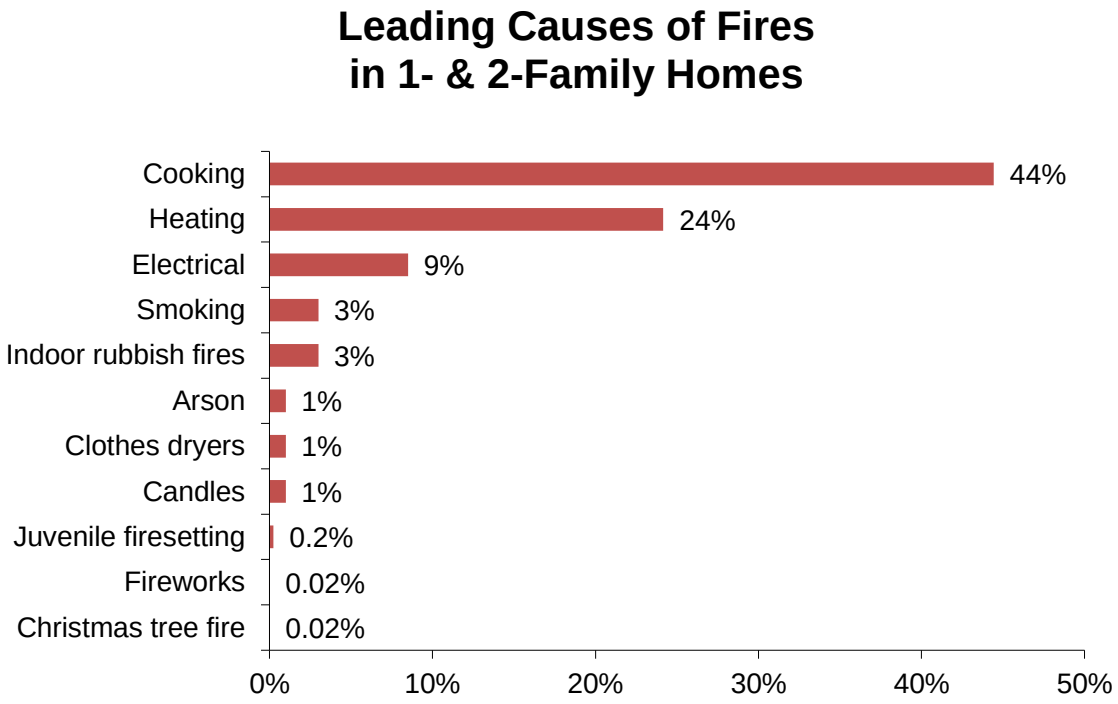

**Only You Can Make Your Home Safer for You and Your Family**
Efforts to reduce the incidence of fire and fire deaths must be focused on home fire safety to have the greatest impact. Increased maintenance of smoke alarms, installation of residential sprinklers, practicing home escape plans coupled with 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

**4,611 Fires, 23 Civilian Deaths & $94.7 Million in Damage**
Four thousand six hundred and eleven (4,611) building fires in one- and two-family homes caused 23 civilian deaths, 104 civilian injuries, 151 fire service injuries, and an estimated $94.7 million in property damage. In 2018, 34% of the Commonwealth's 13,613 residential building fires occurred in one- and two-family homes. The average dollar loss from these types of fires was $20,529. Fires in one- and two-family homes were down by 171, or 4%, from 4,782 in 2017.

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 44% of incidents occurring in one- and two-family homes. Heating equipment caused 24% of these fires. Nine percent (9%) of one- and two-family residential building fires were caused by electrical problems. The unsafe and improper use of smoking materials caused 3% and indoor rubbish fires also caused 3% of these fires. Arson, clothes dryers, and candles each caused 1% of these fires. Juvenile-set fires, fireworks and Christmas tree fires each accounted for less than 1% of the fires in one- and two-family homes in 2018.



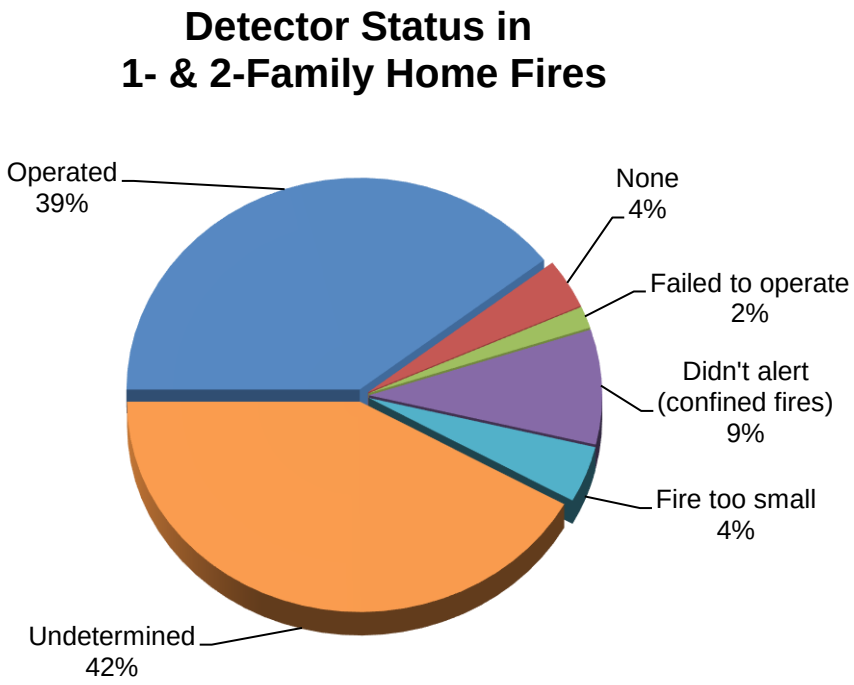

Cooking is the leading cause of fires overall in every residential occupancy.

**1- & 2-Family Home Fires Confined to Non-Combustible Containers**

| Incident Type | # of Incidents | % 1- & 2-Family Home Fires | % Confined to Non-combustible containers | Dollar Loss | Avg. Dollar Loss |
|---|---|---|---|---|---|
| Cooking fires | 1,924 | 42% | 63% | $ 253,556 | $ 132 |
| Chimney or flue fires | 462 | 10% | 15% | $ 170,244 | $ 368 |
| Incinerator overload or malfunction | 2 | 0.04% | 0.1% | $ 0 | $ 0 |
| Fuel burner/boiler malfunction, fire | 523 | 11% | 17% | $ 183,770 | $ 351 |
| Commercial compactor fire, confined | 0 | 0% | 0% | $ | $ 0 |
| Trash or rubbish fire | 124 | 3% | 4% | $ 16,793 | $ 135 |
| Total | 3,035 | 66% | 100% | $ 624,363 | $ 206 |

**Alarms Alerted Occupants in 39% of Fires**

Smoke or heat alarms operated and alerted the occupants in 1,821, or 39%, of the one- and two-family home fires in 2018. In 9% of these fires[9], the alarms did not alert the occupants. Alarms were present but did not operate in 2% of these incidents. In 4% of these fires, no alarms were present at all. The fire was too small to trigger the alarm in 4% of these residential fires. Smoke alarm performance was undetermined in 1,933 incidents, or 42%, of Massachusetts' 2018 one- and two-family fires.




**35% of Failed Alarms Had No Batteries or Dead Ones**

Of the 77 fires where smoke alarms were present but failed to operate, 23, or 30%, failed because the batteries were either missing or disconnected. Four (4), or 5%, did not operate because of dead batteries. Eight (8), or 10%, failed because of a power failure, shutoff or disconnect. Five (5) alarms, or 6%, failed from a lack of maintenance. Two (2), or 3%, failed from improper installation or placement. One (1) alarm, or 1%, failed because it was defective. For 34 cases, or 44%, the reason the alarm failed was not determined.

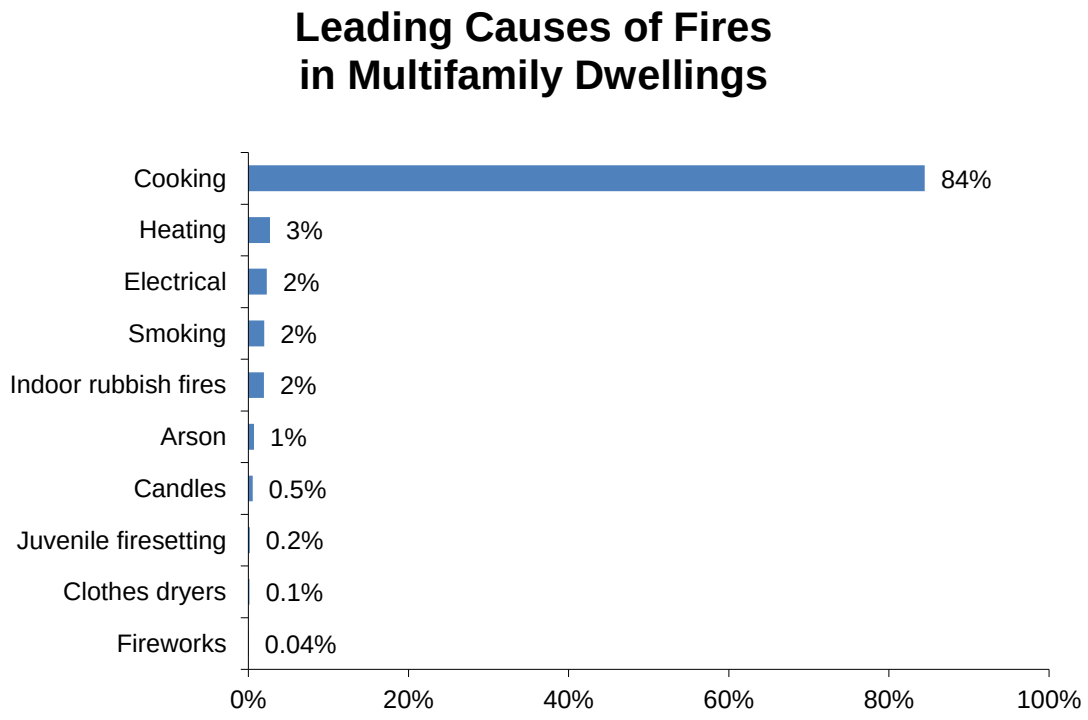
[9] These represent confined fires where it was reported that the alarm did not alert the occupants.

# Multifamily Home Fires

**6,714 Fires, 15 Civilian Deaths & $66.1 Million in Damage**
Six thousand seven hundred and fourteen (6,714), or 49%, of the Commonwealth's 13,613 residential building fires occurred in multifamily dwellings in 2018. These 6,714 fires caused 15 civilian deaths, one firefighter death, 98 civilian injuries, 203 fire service injuries, and an estimated dollar loss of $66.1 million. The average dollar loss per fire was $9,850. Fires in apartments were down by 584, or 8%, from 7,298 in 2017.

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

**Unsafe Cooking Caused 84% of Apartment Fires**
Eighty-four percent (84%) of the fires in apartments were caused by unsafe cooking in 2018. Heating equipment caused 3% of these fires. Electrical problems, smoking, and indoor rubbish fires each accounted for 2% of apartment fires. Arsons caused 1% of the fires in these dwellings. Clothes dryers, candles, juvenile-set fires and fireworks each caused less than 1% of the fires in multifamily homes in 2018.

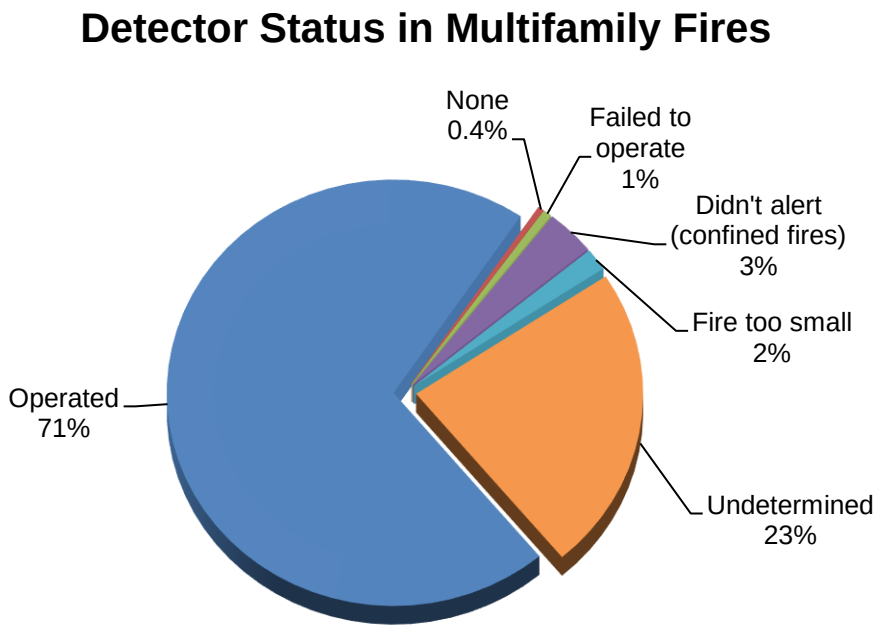


**Multifamily Home Fires Confined to Non-Combustible Containers**

| Incident Type | # of Incidents | % Multifamily Home Fires | % Confined to Non-combustible containers | Dollar Loss | Avg. Dollar Loss |
|---|---|---|---|---|---|
| Cooking fires | 5,486 | 82% | 95% | $ 342,568 | $ 62 |
| Chimney or flue fires | 11 | 0.2% | 0.2% | $ 53,5000 | $ 4.864 |
| Incinerator overload or malfunction | 3 | 0.04% | 0.05% | $ 4,200 | $ 1,400 |
| Fuel burner/boiler malfunction, fire | 127 | 2% | 2% | $ 42,602 | $ 335 |
| Commercial compactor fire, confined | 4 | 0.1% | 0.1% | $ 0 | $ 0 |
| Trash or rubbish fire | 125 | 2% | 2% | $ 36,160 | $ 289 |
| Total | 5,756 | 86% | 100% | $ 479,030 | $ 83 |

**Alarms Alerted Occupants in 71% of Fires**

Smoke or heat alarms operated and alerted the occupants in 4,737, or 71%, of the multifamily fires in 2018. In 3% of these fires[10], the alarms did not alert the occupants. Alarms were present but did not operate in 1% of these incidents. In less than 1% of these fires, no alarms were present at all. The fire was too small to trigger the alarm in 2% of these residential fires. Smoke alarm performance was undetermined in 1,555 incidents, or 23%, of Massachusetts' 2018 multifamily fires.




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

**17% of Failed Alarms Failed from Dead or Missing Batteries**
Of the 41 fires where smoke alarms were present but failed to operate, the batteries were either missing or disconnected in six alarms, or 15%. One (1), or 2%, did not operate because of dead batteries. Five (5), or 12%, failed because of a power failure, shutoff or disconnect. Three (3), or 7%, failed because they were defective. Two (2), or 5%, didn't operate because of a lack of maintenance. Another one, or 2%, failed from improper installation or placement. For 23 cases, or 56%, the reason the alarm failed was not classified or undetermined.

# All Other Residential Fires

**2,288 Fires, 1 Civilian Death & $7.4 Million in Damages**
There were 2,288 reported fires in all the other residential property types in 2018. These 2,288 fires caused one civilian death, 10 civilian injuries, 10 fire service injuries and an estimated $7.4 million in damages. The average dollar loss per fire was $3,223. These fires decreased by 33, or 1%, from 2,321 reported in 2017. Only 17% of the 13,613 residential building fires in 2018 occurred in rooming houses, hotels or motels, residential board and care facilities and dormitories or barracks.

The following table shows the breakout of the reported number of fires, casualties and dollar loss of these other residential occupancies

**All Other Residential Fires by Property Use**

| Property Use | # of Incidents | Fire Service Injuries | Civilian Injuries | Fire Service Deaths | Civilian Deaths | Dollar Loss | % of Residential | Average Dollar Loss |
|---|---|---|---|---|---|---|---|---|
| Residential, other | 833 | 8 | 4 | 0 | 1 | $6,129,456 | 6% | $ 7,358 |
| Boarding/rooming houses | 511 | 0 | 0 | 0 | 0 | $ 206,957 | 4% | $ 405 |
| Hotel/motel | 171 | 1 | 3 | 0 | 0 | $ 376,508 | 1% | $ 2,202 |
| Residential board & care | 178 | 1 | 1 | 0 | 0 | $ 261,212 | 1% | $ 1,467 |
| Dormitories | 595 | 0 | 2 | 0 | 0 | $ 400,432 | 4% | $ 673 |
| All Other Residential | 2,288 | 10 | 10 | 0 | 1 | $7,374,565 | 17% | $ 3,223 |

**Cooking Was the Leading Cause of These Fires**
Cooking was the leading cause of these fires. Cooking caused over 85% of fires in all the other residential occupancies except hotels and motels where it caused 78% of the fires.

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

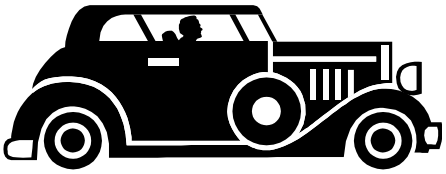
- Choose lodging equipped with sprinklers and smoke alarms in each room.
- If you are hearing impaired, you may request a room with an appropriate smoke alarm with a flashing strobe light.
- Think about fire safety when checking into a hotel or motel. Count the number of doors down the hall to the nearest fire exit staircase. Remember to never use the elevator in case of a fire. Travelers should test the smoke alarm 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.

# Motor Vehicle Fires

**2,465 Motor Vehicle Fires Account for 10% of All Reported Fires**

Motor vehicle fires accounted for 10% of total reported fire incidents. The 2,465 motor vehicle fires in 2018 were an increase of 83, or 3%, from the 2,385 motor vehicle fires reported in 2017. They caused two, or 4%, of the civilian fire deaths, 14 civilian injuries, 11 fire service injuries, and an estimated property damage of $22.9 million.



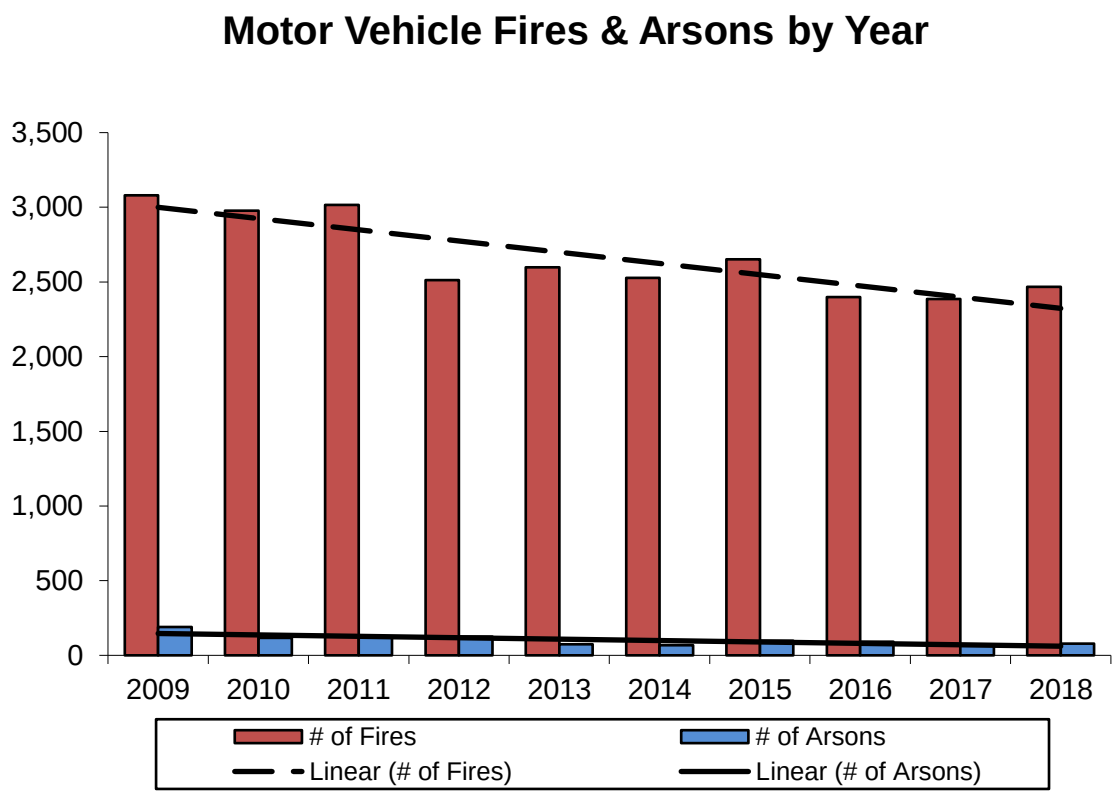
According to MFIRS, a motor vehicle fire is defined as any fire involving a car, truck, boat, airplane, construction equipment or other mobile property (not being used as a permanent structure) that occurs outside of a structure.

The table on the next page 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 |
|---|---|---|---|
| 2018 | 2,465 | 78 | 3.2% |
| 2017 | 2,385 | 72 | 3.0% |
| 2016 | 2,399 | 92 | 3.8% |
| 2015 | 2,652 | 98 | 3.7% |
| 2014 | 2,528 | 68 | 2.7% |
| 2013 | 2,598 | 75 | 2.9% |
| 2012 | 2,512 | 126 | 5.0% |
| 2011 | 3,016 | 124 | 4.1% |
| 2010 | 2,978 | 116 | 3.9% |
| 2009 | 3,081 | 189 | 6.1% |

The following graph illustrates the data in the previous table.



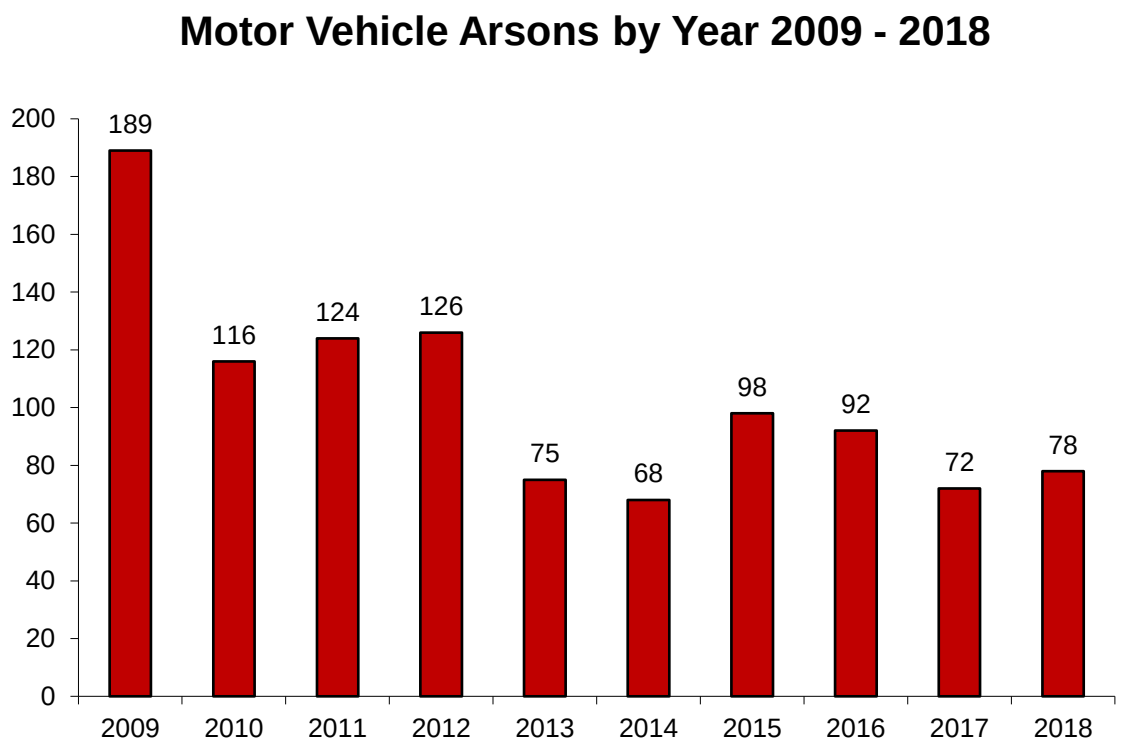

**2 Motor Vehicle Fire Deaths**

There were two civilian fire deaths in two motor vehicle fires in 2018. One (1) of the deaths was because of a motor vehicle crash with ensuing fire. Another person died by suicide in their vehicle.

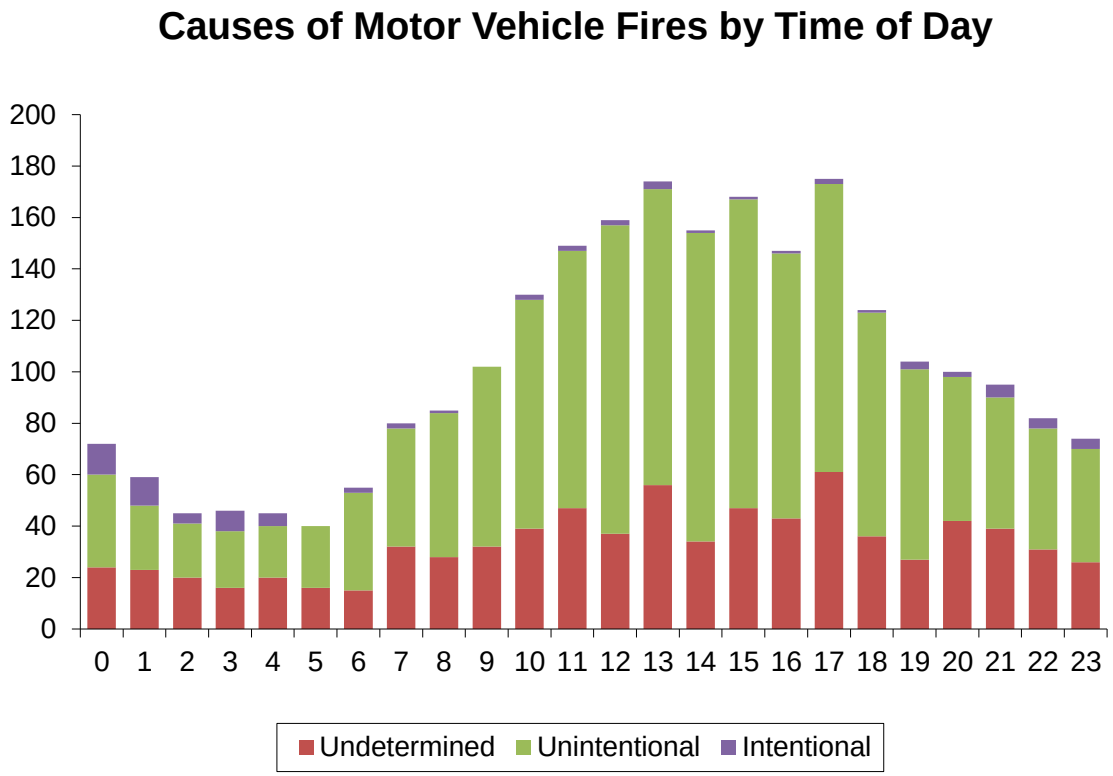
**Mechanical Failures Caused Almost 1/4 of Massachusetts Motor Vehicle Fires**
Of the 2,465 motor vehicle fires in 2018, 22% were caused by some type of mechanical failure or malfunction; 3% were considered intentionally set; and 42% resulted from other accidental causes. The cause was undetermined or not reported in 33% of the motor vehicle fires.

**Motor Vehicle Arsons Increased**
In 2018, there were 78 reported motor vehicle arsons. This is an increase of 8% from the 72 reported in 2017. These 78 arsons caused one civilian death and an estimated dollar loss of $561,369.

The following graph depicts the drop in motor vehicle arsons from 2009 to 2018.




**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.




**Norwell Has Largest Loss Motor Vehicle Fire**

In 2018 there were no reported motor vehicle fires that had an estimated dollar loss over $1 million. The largest loss motor vehicle fire was in Norwell and accounted for 3% of the total dollar loss of all motor vehicle fires.

- On March 9, 2018, at 10:49 a.m., the Norwell Fire Department responded to a rock crusher on fire on High St. The fire started in the engine. No one was injured at this fire. Total estimated damages were $750,000.

**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; 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 39 motor vehicle fires at gas and service stations in 2018. There were 45 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**

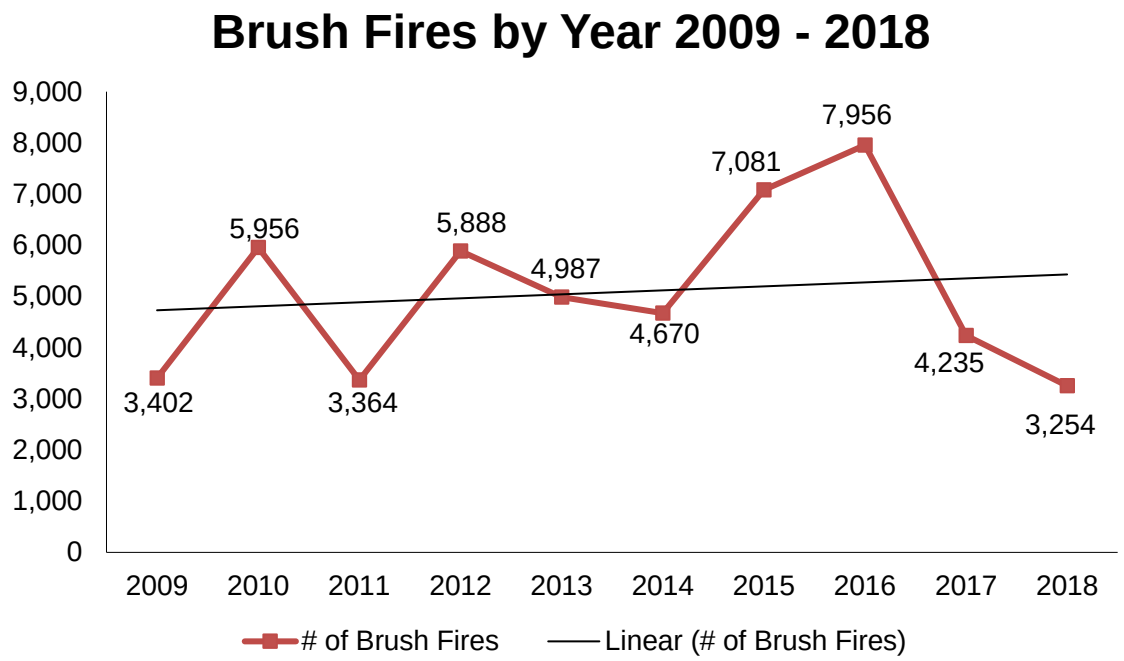
- Turn off your car when you get gas.
- At self-service stations, remember to put the nozzle back and your gas cap on before driving off. Monitor the fueling; do not get back in the vehicle.
- Gasoline vapors burn at a very low temperature. These fumes are heavier than air, and can travel a distance 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

**6,877 Brush, Trash, & Other Outside Fires Down 19%**
The 6,877 outside and other fires and explosions caused three civilian deaths, 39 civilian injuries, 13 fire service injuries, and an estimated dollar loss of $4 million. The 3,254 trees, grass and brush fires, 2,015 outside trash fires, 763 special outside fires, 42 cultivated vegetation or crop fires, and 803 other fires accounted for 27% of the total fire incidents in 2017. These fires decreased by 19% from the 8,477 incidents reported in 2017.

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 2018, the reported number of brush fires decreased by 981 or 23%, from the 4,235 reported in 2017. It seems that 2018 was a particularly down year for brush fires. It's the fourth lowest number of reported brush fires since 1986.




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 6,877 reported outside and other fires include:**

- 3,254 natural vegetation fires (tree, grass, and brush fires) that caused one civilian death, three civilian injuries, two fire service injuries, and an estimated dollar loss of $493,145; this is a 23% decrease from the 4,235 incidents reported in 2017. There were a reported 588 acres burned in 2018.
- 2,015 trash fires that caused two civilian injuries, three fire service injuries and an estimated dollar loss of $165,342; this is a 16% decrease from the 2,392 incidents reported in 2017.
- 763 special outside fires (including outside, storage, equipment, mailbox fires and outside gas or vapor explosions) that caused two civilian deaths, nine civilian injuries, two fire service injuries and an estimated dollar loss of $1.1 million; this is an 8% decrease from the 828 incidents reported in 2017.
- 42 cultivated vegetation or crop fires that caused one fire service injury; this is a 36% decrease from the 66 incidents reported in 2017.

- 803 other fires that could not be classified further which caused 25 civilian injuries, five fire service injuries, and an estimated dollar loss of $2.3 million; this is a 16% increase from the 956 incidents reported in 2017.

**341 Brush, Trash & Other Outside Arsons**
There were 341 reported brush, trash and other outside arsons in 2017. There were 156 natural vegetation arsons, 70 outside rubbish arsons, 62 special outside arsons, two cultivated vegetation or crop arson, and 51 arsons that could not be classified any further. These 341 arsons caused one civilian death, four civilian injuries, one fire service injury and $80,973 in estimated damages.

**1,470 Fires with Cause Still Under Investigation or Undetermined**
In 2018, 126 outside and other fires were still listed as 'Cause Under Investigation'. There were 1,344 fires where the *Cause of Ignition* was listed as 'Undetermined'.

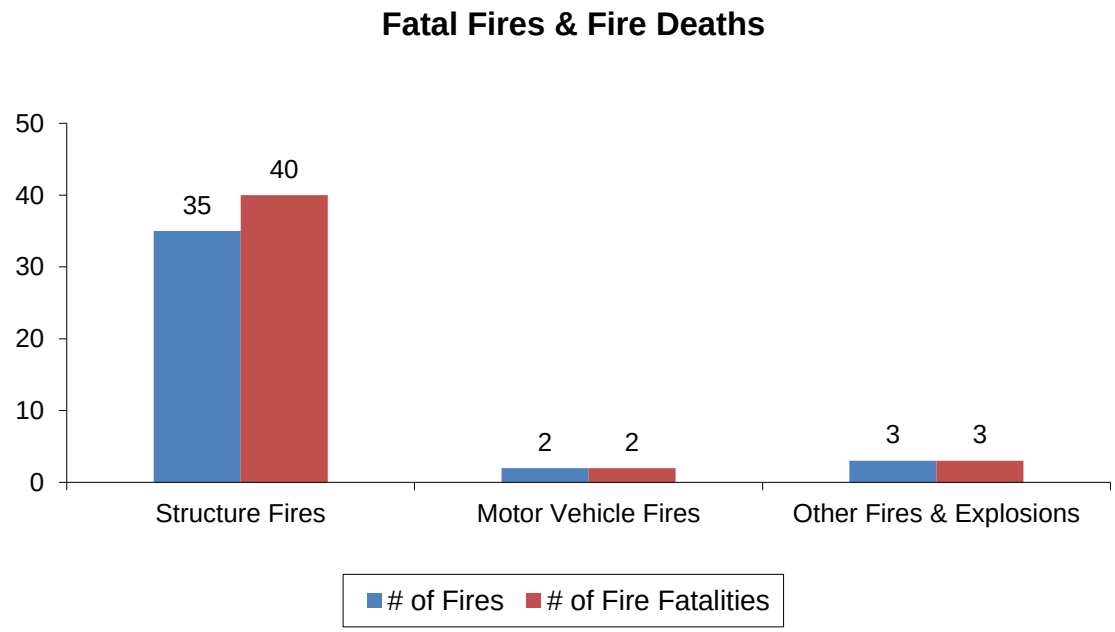
**Largest Loss Outside and Other Fire**
- On July 24 2018, at 2:07 p.m., the Rockland Fire Department was called to a brush fire outside a Dunkin Donuts. No one was injured at this fire. Damages from this fire were estimated to be $225,000.

# 2018 Massachusetts Fire Deaths

# Civilian Fire Deaths

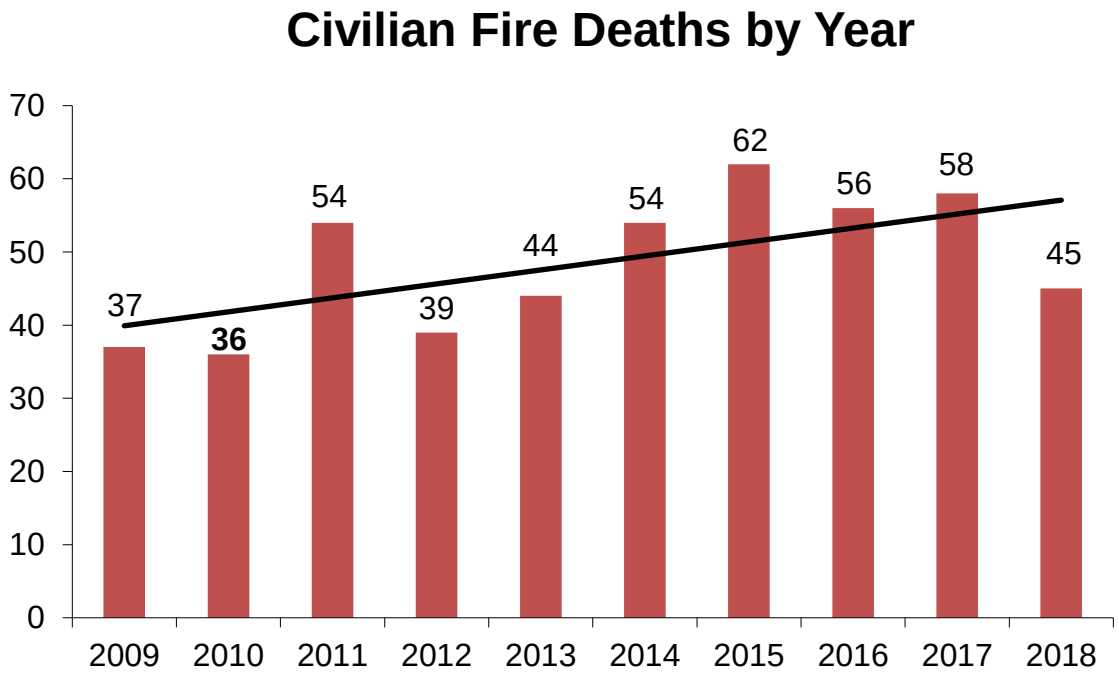
**45 Civilians Died in Massachusetts Fires & 1 Died in an Explosion**
Forty-five (45) civilians died in 40 Massachusetts fires during 2018. This is 13 less than the 58 civilian fire deaths recorded in 2017. Forty (40) civilians died in 35 structure fires. Two (2) people died in two motor vehicle fires. Three people died in three outside fires in Massachusetts in 2018. In 2018, there were 6.9 fire deaths per one million population in Massachusetts which is 2.0 less than in 2017.

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.



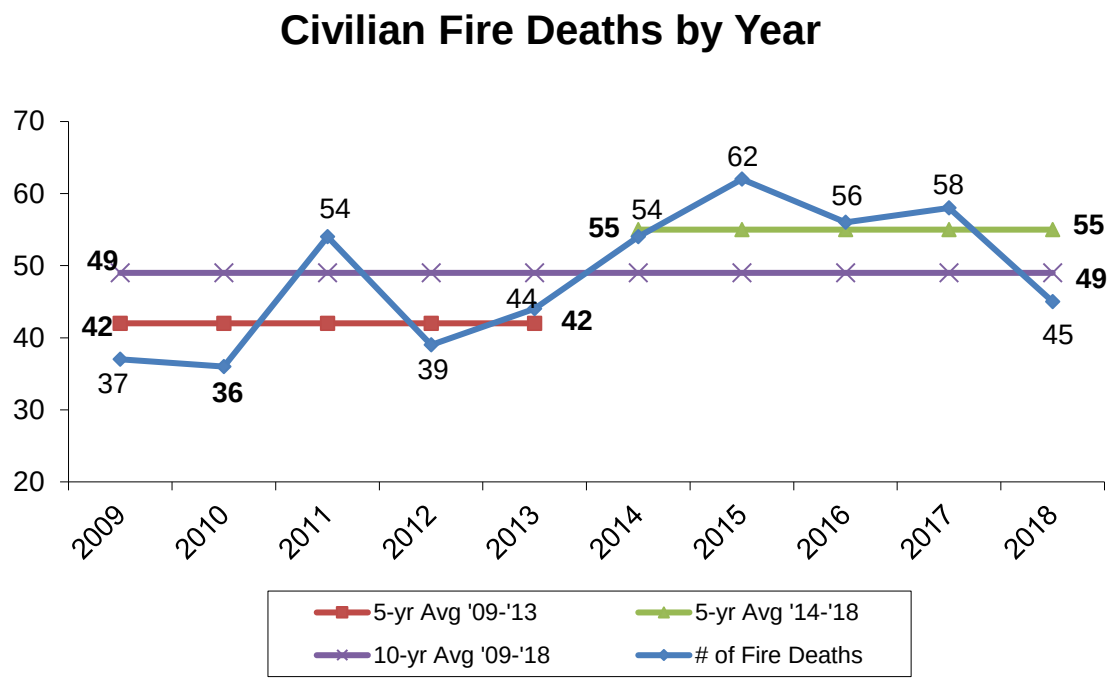

**Fire Deaths Down by 17 from 2017**

The 45 civilian fire deaths reported in 2018 were a decrease of 17, or 22% less, than was reported in 2017. The following chart shows the trend of civilian fire deaths for the past decade on a general incline; but that is helped by having four of the five lowest years of fire deaths on record. However, civilian fire deaths have decreased by 57% from the high of 105 in 1990.

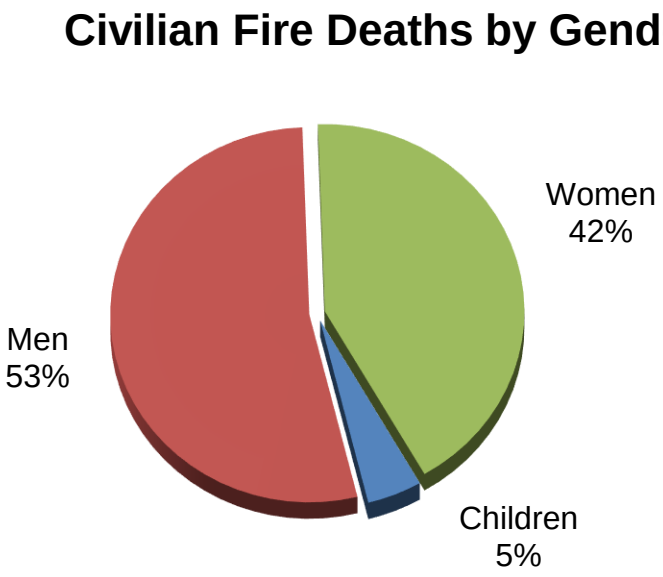


**2018 Is Below the 5 & 10 - Year Averages**
Because the number of fire deaths fluctuates from year to year and may be influenced by uncontrollable outside factors such as high energy costs for heating, it is helpful to look at averages over five- and 10-year periods. The following graph illustrates the number of fire deaths for the past 10 years in relation to the five-year average for fire deaths for the periods from 2009 through 2013 and from 2014 through 2018. The average number of fire deaths per year from 2009 through 2013 was 42 deaths. The average number of fire deaths per year from 2014 through 2018 was 55 deaths. The graph also depicts the relationship of the number of fire deaths in relation to the 10-year average of 49 deaths for the same time period. Three (3) of the last five years have been above the 10-year and five-year average.

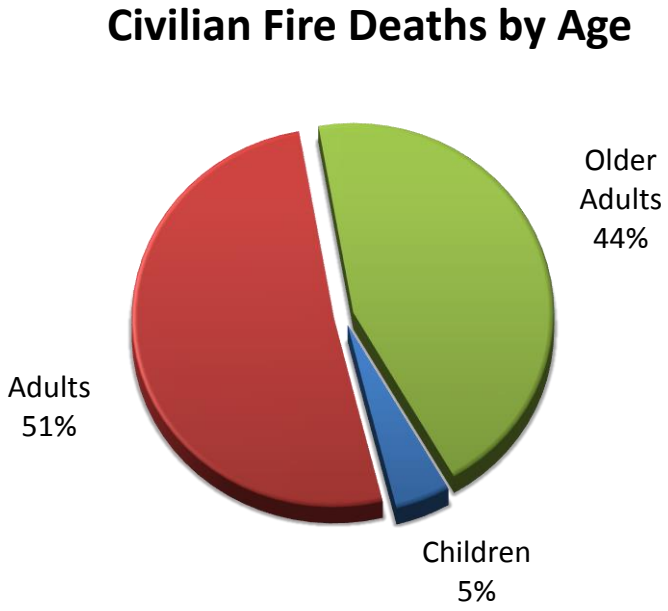
Note that the following chart starts at 20 rather than the traditional zero value. This is so the reader can concentrate on the sometimes subtle changes in the figures. The 45 fire deaths in 2018 are 18% below the five-year average and 8% below the 10-year average.



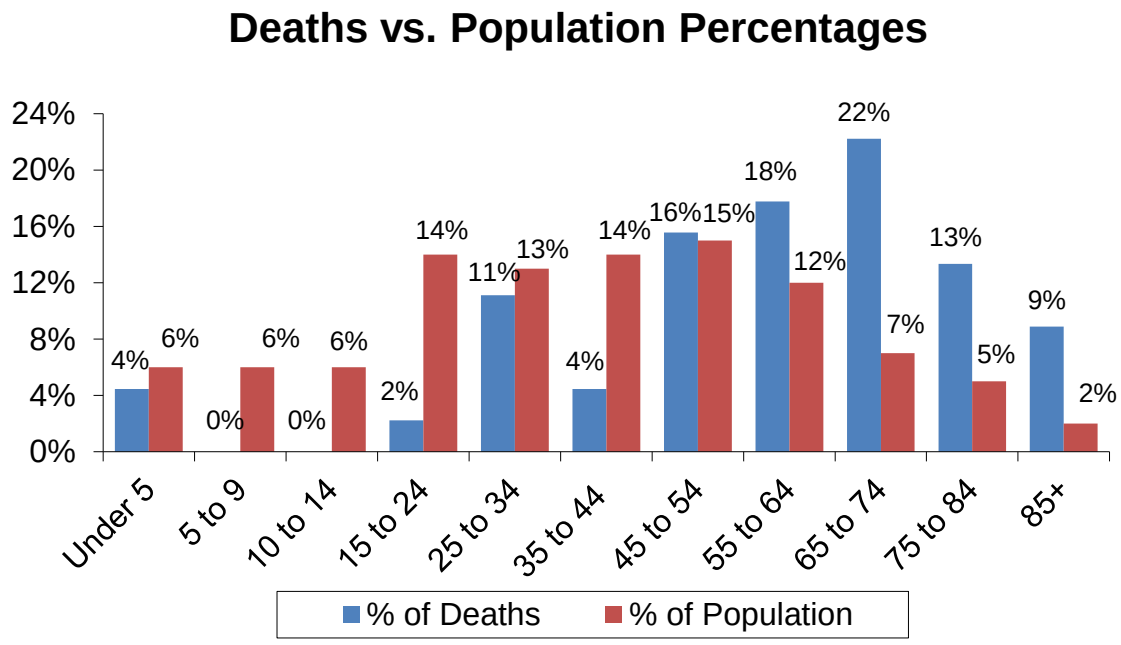

**24 Men, 19 Women and 2 Children Under 18 Died from Fires in 2018**
Of the 45 fire deaths, 24, or 53%, were men, 19, or 42%, were women and two, or 5%, were children under 18. The pie chart on the next page illustrates the above figures.




**44% of Fire Deaths were Over 65**
Twenty (20), or 44%, of the civilian fatal fire victims were over 65 years of age. This included nine elderly men and 11 elderly women. Two (2), or 5%, of the civilian fatal fire victims were under 18 years old. Twenty-three (23), or 51%, 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 4.4. The following graph shows the percentage of fire deaths versus population percentage by age groups in 2018. Other older adults, between the ages of 75 and 84, accounted for 5% of the population but 13% of the fire deaths. Their risk of fire death is at 2.7. Older adults between the ages of 65 and 74 were 3.2 times more likely to die in a fire in Massachusetts. The risk of a fire death for all older adults over the age of 65 was 3.2. The only other age groups that was at a greater risk were adults between the ages of 55 to 64 who were 1.5 times more likely to die in a fire in 2018.

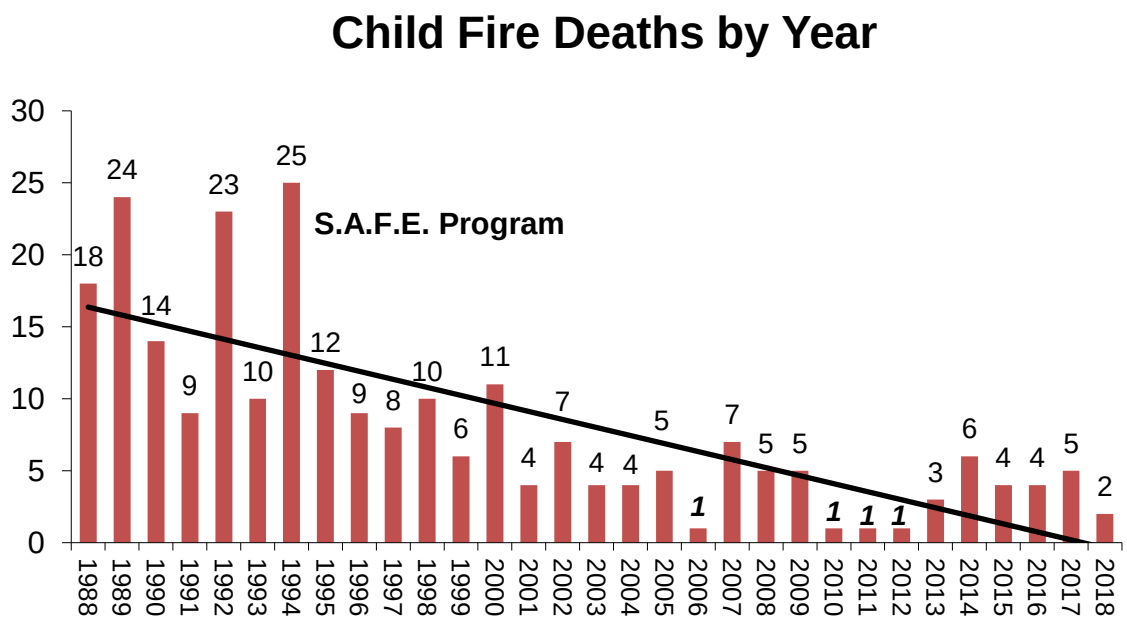



**How to Read the Preceding Chart**
If an age group represents 10% of the population, we expect it to account for 10% of the fire deaths. If it accounts for a higher percentage of fire deaths than it does for the overall population, that group is at a higher risk of dying in a fire. If the age group 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 Now at Lower Risk of Dying in Fires in the Commonwealth**
Children are not 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 2018. 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 7% of all fire-related deaths nationally in 2017.[11] In 2018, children under 10 accounted for five, or 9%, of the Massachusetts fire-related deaths.



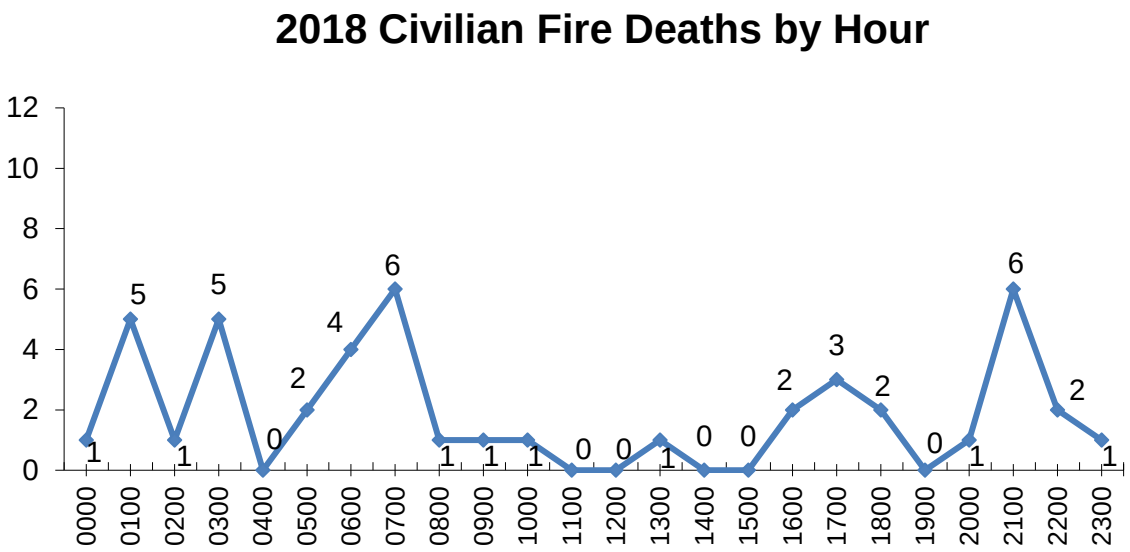

**Child Fire Deaths Drop 92% Since the Start of the S.A.F.E. Program**
Fire deaths of children under age 18 have fallen by 92% from the 25 child fire deaths in 1994 and since the start of the S.A.F.E. Program in the fall of 1995.

**Average Annual Child Deaths Down 76%**
Since fire death numbers fluctuate quite a bit from year to year, it is helpful to look both at the trendline in the graph on the previous page, and averages over several years. During the 23 full years where the S.A.F.E. Program has been in effect, from 1996 to 2018, the average number of child fire deaths per year has been 4.9. In the 23 years prior to the S.A.F.E. Program, 1972 to 1994, the average number of child fire deaths per year was 20.6. This 76% drop in the average number of child fire deaths is significant when compared to the 49% 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 for this age group, which is not happening for all other age groups, is consistent, comprehensive, statewide, school-based fire safety education[12].

[11] Source: United States Fire Administration's **Fire Risk in 2016, Topical Fire Research Series, Vol. 18 – Issue 6 September 2018.** Most recent national data available.
[12] Based upon the success of the SAFE program, the Senior SAFE program was launched in 2014 to provide funding to local fire departments to improve fire & life safety to older adults through education that addresses the unique fire risks to this age group.

**60% of People Died in Fires at Night**
Twenty-seven (27), or 60%, 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 (45%) of the people who died during 'daytime' fires were intimately involved in ignition, and 23% were older adults 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

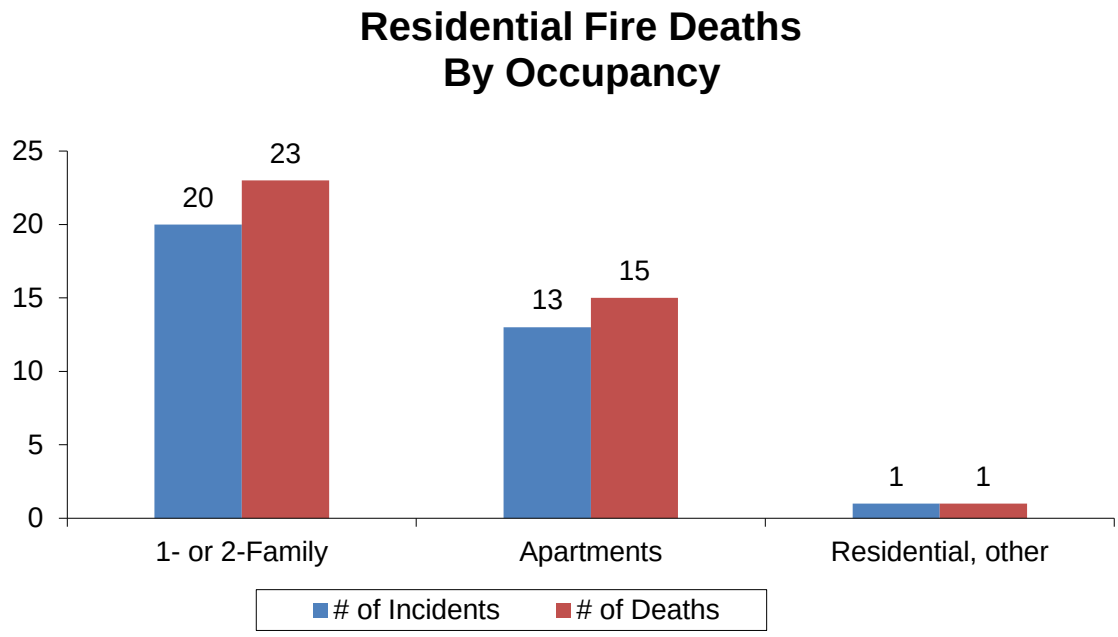
In 2018, there were 40 structure fire deaths in 35 fatal fires. All but one of the structure fire deaths occurred in residential occupancies. In 2018, one non-residential structure fire killed one civilian.

- On March 23, 2018, at 5:22 p.m., the Ayer Fire Department responded to a fatal fire at a manufacturing plant. The victim was a 59-year old male worker. First arriving firefighters discovered the victim's body and transported him to a local hospital. He was then transferred to another hospital where he succumbed to his injuries. The cause of the fire was due to a failure during the building of an industrial kiln. One (1) other civilian was injured at this fire. It was undetermined if the building had smoke alarms. The sprinkler system operated and actively suppressed the fire. Damages from this fire were estimated to be $2.2 million.

# Residential Building Fire Deaths

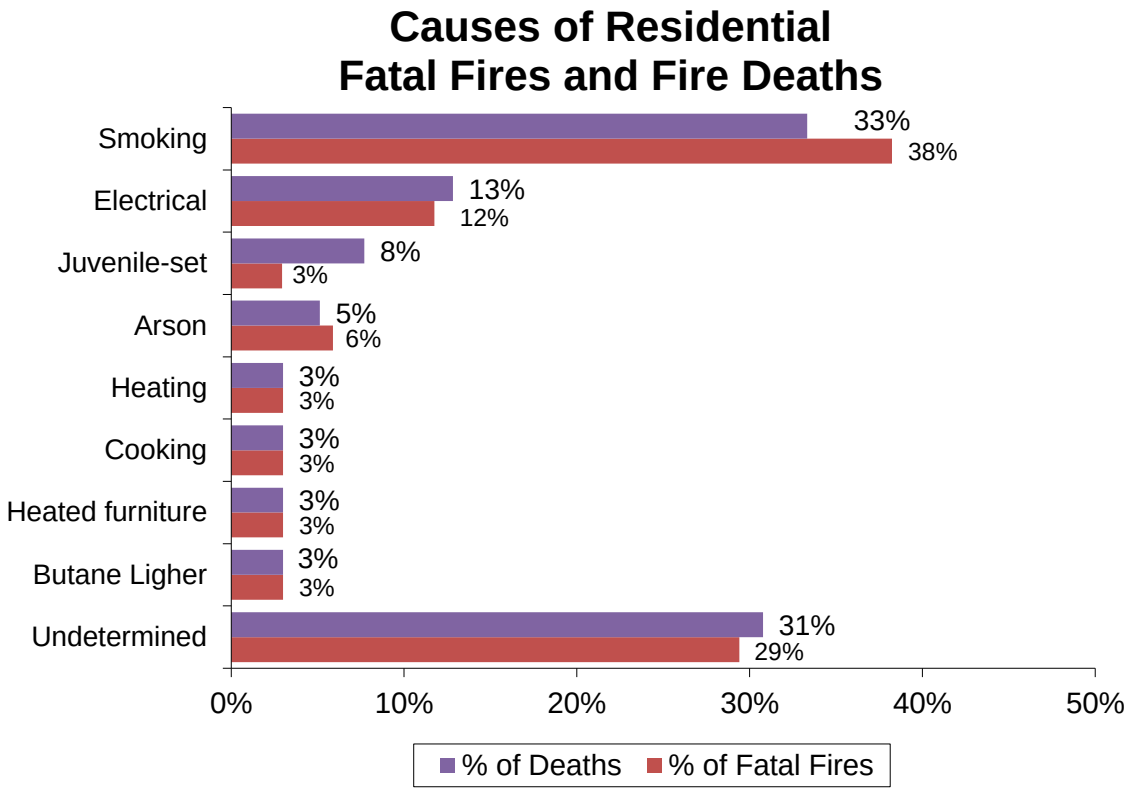
**Most Fire Deaths Occur in the Home**
The majority of fire deaths occur in residential occupancies. We focus our analysis on these deaths because it is where prevention can yield the greatest results or have the most impact.

In 2018, there were 39 fire deaths in 34 fatal residential building fires. This represents 98% of the structure fire deaths and 87% of all fire deaths. Twenty-three (23) fire deaths occurred in 20 one- and two-family dwellings; 15 fire deaths occurred in 13 apartment fires; and one fire death occurred in an unclassified residential property. Typically more fatal fires and associated deaths occur in one- and two-family homes than occur in apartment fires or other residential occupancies.




**Smoking Fires Are Leading Cause of Fire Deaths**
In 2018, improper disposal of smoking materials was the leading cause of residential fire deaths and fatal residential fires. These fires accounted for 13, or 33%, of residential fire deaths. Electrical problems were the second leading cause of fire deaths, accounting for five, or 13%, of residential fire deaths. A juvenile-set fire caused three, or 8% and Arson caused two, or 5%, of these deaths. Heating equipment, cooking, heated furniture and a butane lighter each caused one, or 3%, of these fire deaths. Twelve (12), or 31%, of these deaths occurred in fires where no cause could be determined or multiple causes could not be ruled out.

The following 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.




**13 Fatal Smoking Fires Cause 13 Deaths in Homes**
In 2018, the improper use and disposal of smoking materials caused 13, or 33%, of residential building fire deaths and 13, or 38%, of fatal residential building fires.

**9 Elderly Fire Deaths Caused by Smoking**
In 2018, nine of the older adult fire deaths were caused by the improper disposal of smoking materials while at home. In 2017 nine older adults were killed in smoking fires. Since 2004 older adult fire deaths have increasingly been caused by improper disposal of smoking materials.

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 1, 2018, at 5:14 a.m., the Littleton Fire Department was called to a fatal smoking fire in a single-family home. The victim, a 76-year old woman fell asleep while smoking in the living room. The cigarette ignited the furniture. No one else was

injured at this fire. Alarms were present but it was undetermined if they operated. Sprinklers were not present. Damages were estimated to be $400,000.

- On January 17, 2018, at 1:46 a.m., the New Bedford Fire Department was called to a fatal smoking fire in a 3-unit apartment building. The fire was started by a cigarette in the bedroom. The victim, a 56-year old woman fell asleep while smoking. No one else was injured at this fire. Alarms were present but did not operate because of missing batteries. There were no sprinklers. Damages from this fire were estimated to be $35,000.

- On February 15, 2019, at 10:38 p.m., the Worcester Fire Department was called to a fatal smoking fire in a 5-unit apartment building. The fire was started by undetermined smoking materials in the living room. The victim was a 68-year old man. No one else was injured at this fire. Alarms were present but the fire was too small to activate them. There were no sprinklers. Damages from this fire were estimated to be $325,000.

- On March 22, 2018, at 1:59 a.m., the Three Rivers Fire Department in Palmer was called to a fatal smoking fire in a 6-unit apartment building. The fire was started by a cigarette igniting an upholstered chair that the victim had set up on his rear porch for smoking. The victim was a 66-year old man who was in his apartment when the fire started. Smoke alarms were present and operated. There were no sprinklers. Damages from this fire were estimated to be $246,700.

- On April 7, 2018, at 4:33 p.m., the Fall River Fire Department was called to a fatal smoking fire in an 80-unit apartment building. The fire was caused by a cigar igniting the victim's clothing in the living room. The victim, a 69-year old woman, was in the area of origin and involved with the start of the fire. No one else was injured at this fire. Alarms were present and operated. Sprinklers were present but the fire was too small to activate them. Damages from this fire were estimated to be $1,500.

- On April 30, 2018, at 9:08 p.m., the Orange Fire Department was called to a fatal smoking fire in a single-family home. The fire was started by a cigarette in the living room. The victim, a 79-year old physically disabled woman, was in the area of origin and her clothing ignited when she attempted to escape. No one else was injured at this fire. Alarms were not present. The building was not sprinklered. Damages from this fire were estimated to be $52,900.

- On September 29, 2018, at 9:19 p.m., the Arlington Fire Department was called to a fatal smoking fire in a single-family home. The fire was started by a cigarette igniting the victim's bedding while she was asleep. The victim was a 76-year old woman. No one else was injured at this fire. Alarms were present and operated. The building did not have any sprinklers. Damages from this fire were estimated to be $55,000.

- On October 19, 2018, at 8:14 a.m., the Orange Fire Department was called to a fatal smoking fire in a single-family home. The fire was started by a cigarette in an

unclassified function room. The victim was a 45-year old woman who was in the area of origin and involved in ignition. One (1) other civilian was injured at this fire. The home did not have any alarms or fire sprinklers. Damages from this fire were estimated to be $144,400.

- On October 19, 2018, at 10:11 p.m., the Chicopee Fire Department was called to a fatal smoking fire in a 4-unit apartment building. The fire was started by a cigarette in the living room. The victim, 69-year old woman, was intimately involved with the ignition of the fire. She was transported to a local hospital and then transferred to a Boston hospital where she succumbed to her injuries. There were no other injuries at this fire. Firefighters has great difficulty effecting the rescue because of excessive clutter. It was undetermined if alarms were present. The home did not have sprinklers. Damages from this fire were estimated to be $100,000.

- On November 8, 2018, at 3:40 p.m., the Amherst Fire Department was called to a fatal smoking fire in an 80-unit apartment building. The fire was started by a cigarette in the living room. The victim was a 57-year old woman who was intimately involved in the ignition of the fire. No one else was injured at this fire. Alarms were present and alerted the occupants. The building did not have any sprinklers. Damages from this fire were estimated to be $120,000.

- On December 22, 2018, at 5:00 a.m., the Boston Fire Department was called to a fatal smoking fire in a two-family home. The fire was started by a cigarette in an unclassified function room. The victim was a 59-year old woman. No one else was injured at this fire. The building did have alarms but it was undetermined if they operated. The home did not have any sprinklers. Damages from this fire were estimated to be $205,000.

**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 2018, two people died in two fires when someone in the home was using oxygen while smoking.

- On January 7, 2018, at 3:39 a.m., the Boston Fire Department was called to a fatal smoking fire in a two-family home. The fire was started by the victim smoking while using home oxygen in his wheelchair. The 72-year-year old man, was discovered by the first arriving firefighters on fire in the kitchen. No one else was injured at this fire. Alarms were present and alerted the other occupants of the building. Sprinklers were present and kept the fire to just the victim. Damages from this fire were estimated to be $1,500.

- On March 8, 2018, at 10:50 a.m., the Andover Fire Department was called to a fatal smoking fire in a 175-unit apartment building. The fire was started when the victim was smoking while using home oxygen. The 84-year old man was overcome while trying to escape because his clothes had ignited. No one else was injured at this fire.

Alarms were present and operated. Sprinklers were present but the fire was not in an area protected by them. Damages from this fire were estimated to be $195,000.

**4 Fatal Electrical Fires Cause 5 Deaths**

Five (5) people died in four residential electrical fires in 2018. Electrical fires accounted for 13% of residential fire deaths and 12% of fatal residential fires.

- On April 27, 2018, at 9:34 p.m., the Barnstable Fire Department was called to a fatal electrical fire in a single-family home. The fire was started by an oil filled space heater that was plugged into a lightweight extension cord that was also pinched by furniture. The victim, an 86-year old physically disabled man was overcome while trying to escape. No one else was injured at this fire. Alarms were present but failed to operate because of missing batteries. There were no sprinklers. Damages from this fire were estimated to be $175,000.

- On May 2, 2018, at 6:13 a.m., the Chicopee Fire Department was called to a fatal electrical fire in a single-family home. The fire began in the living room when a lamp cord was buried underneath material. Resistance heating over time started the fire. The victim, a 70-year old woman, was overcome while she attempted to escape. This was hampered due to the excessive clutter throughout the home. No one else was injured at this fire. Alarms were present and alerted the occupants. There were no sprinklers in the home. Damages were estimated to be $95,000.

- On July 31, 2018, at 7:00 a.m., the Weston Fire Department was called to a fatal electrical fire in a single-family home. The fire started by an extension cord in a bedroom. The victim was an 88-year old woman. No one else was injured at this fire. Alarms were present and operated. There were no sprinklers. The fire caused an estimated $136,500 worth of damage.

- On October 10, 2018, at 3:55 a.m., the Pittsfield Fire Department was called to a fatal electrical fire in a single-family home. The fire was caused by an air conditioner in the living room. The victims, a 75-year old man, and his 75-year old wife were sleeping at the time of the fire and overcome while trying to escape. One (1) firefighter was also injured at this fire. It was undetermined if alarms were present. Sprinklers were not present in the home. Damages were estimated to be $230,000.

**1 Juvenile-set Fire Caused 3 Deaths**

One (1) juvenile-set fire, or 3% of fatal residential building fires caused three, or 8%, of the residential building fire deaths in 2018.

- On March 18, 2018, at 7:24 a.m., the Springfield Fire Department was dispatched to a fatal fire in a 20-unit apartment building. The victims, a 33-year old man and his two sons, ages one and two-years old were trapped. The fire began in the second floor apartment where the victims lived. Investigators determined that another sibling using matches started the fire. Two (2) firefighters were injured at this fire. Alarms were

present and operated. The building did not have any sprinklers Damages from this fire were estimated to be $60,000.

**2 Fatal Arson Fires Caused 2 Deaths**
Two (2) fatal arson fires, or 5% of fatal residential building fires, caused two, or 6%, of the residential building fire deaths in 2018. One (1) of the two fires was a self-immolation.

- On January 16, 2018, at 1:46 a.m., the Lowell Fire Department was called to a fatal self-immolation fire in a three-story apartment building. The victim, a 31-year old man, set fire to a couch in the garage after barricading himself in there. No one else was injured at this fire. Alarms were present but it was undetermined why they failed to operate. The building was not sprinklered. Damages from this fire were estimated to be $22,000.

- On December 4, 2018, at 7:19 a.m., the Dudley Fire Department was called to a fatal arson fire in a single-family home. The victim, a 50-year old man set multiple fires on his property. First arriving firefighters discovered two vehicles in the driveway, a shed in the backyard and the home itself on fire. No one else was injured at this fire. Alarms were not present and the home was not sprinklered. Damages from this fire were estimated to be $204,200.

**1 Fatal Heating Fires Caused 1 Death**
One (1) fatal heating fires, or 3% of fatal residential building fires, caused one or 3%, of the residential building fire deaths in 2018.

- On January 10, 2018, at 5:21 p.m., the Westwood Fire Department responded to a fatal heating fire at a single-family home. The fire was started by a woodstove in the living room. The victim was a 47-year old man. One (1) firefighter was injured at this fire. Alarms were present and operated. The home did not have any sprinklers. Damages from this fire were estimated to be $450,000.

**1 Killed in 1 Cooking Fire**
One (1) person died in one fatal residential cooking fire in 2018. Cooking fires accounted for 3% of residential fire deaths and 3% of fatal fires in residential buildings.

- On April 22, 2018, at 4:26 p.m., the Sturbridge Fire Department was called to a fatal cooking fire in a 19-unit apartment building. The fire started inside the microwave in the kitchen and spread to the victim’s clothes when she opened the door. The victim was an 86-year old woman. No one else was injured at this fire. Alarms were present but they failed to operate from a lack of cleaning. The building was not sprinklered. Damages from this fire were estimated to be $2,000.

**Heated Furniture Caused 1 Death**
Heated furniture caused one fire, or 3% of fatal residential building fires, and one, or 3%, of the residential building fire deaths in 2018.

- On March 5, 2018, at 6:48 a.m., the Worcester Fire Department was dispatched to a fire in a single-family home. The victim, an 85-year old physically disabled woman was unable to attempt to escape. The fire was started by an electronically heated recliner. Two (2) other occupants and one firefighter were injured at this fire. Alarms were present but it was undetermined if they operated. The building did not have any sprinklers. Damages from this fire were estimated to be $157,469.

**Butane Lighter Caused 1 Death**
A butane lighter caused one fire, or 3% of fatal residential building fires, and one, or 2%, of the residential building fire deaths in 2018.

- On April 11, 2018, at 7:18 a.m., the New Bedford Fire Department was dispatched to a house fire in a single-family home. The fire was started when an occupant was using a butane lighter to light smoking materials in a ceramic bowl. The victim, a 22-year old man, was in a second floor bedroom and could not escape. It was undetermined if alarms were present. The building did not have any sprinklers. Damages from this fire were estimated to be $161,200.

**10 Fatal Fires of Undetermined Cause**
Ten (10) fatal residential building fires that took the lives of 12 Massachusetts residents in 2018 remain undetermined. These represent 29% of the fatal residential fires, and 31% of the residential fire deaths in 2018. 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 February 5, 2018, at 1:14 a.m., the Plymouth Fire Department was dispatched to a fire in a single-family home of undetermined cause. The victim, a 71-year old man, was asleep at the time of the fire but was overcome as he tried to escape. One (1) firefighter was also injured at this fire. It was undetermined if alarms were present. The building was not sprinklered. Damages from this fire were estimated to be $415,000.

- On February 6, 2018, at 11:01 p.m., the Taunton Fire Department was called to a fatal fire in a three-unit apartment building of undetermined cause, but the most likely cause is improper disposal of smoking materials. The fire started in a third floor bedroom. The victim, a 54-year old man, was intimately involved with the start of the fire. One (1) firefighter was injured at this fire. Alarms were present but it was undetermined if they operated. The building was not sprinklered. Damages from the blaze were estimated to be $400,000.

- On March 25, 2018, at 12:24 a.m., the Quincy Fire Department was called to a fatal fire in a two-family home of undetermined cause. The fire originated in the first floor living room. The two most likely causes were electrical or improper disposal of smoking materials. The victim was a 54-year old woman who was in the area of origin. She was transported to a local hospital where she succumbed to her injuries. No one else was injured at this fire. Alarms were present and alerted the occupants. The building was not sprinklered. Damages from the blaze were estimated to be 150,000.

- On May 20, 2018, at 9:06 a.m., the Rochester Fire Department was dispatched to a fire in a residential home of undetermined cause. The fire started in a first floor living room. The victim, a 62-year old man, reentered the building to rescue his dog. The victim's sister was also injured at this fire. Smoke alarms were not present. The building was not sprinklered. Damages from this fire were not estimated.

- On June 6, 2018, at 6:35 p.m., the Waltham Fire Department was dispatched to a fire in a 3-unit apartment building of undetermined cause. The most likely cause was improper disposal of smoking materials but a candle near the area of origin could also have been the cause. The victim was a 54-year old man. Two (2) firefighters were also injured at this fire. Alarms were present and alerted the occupants of the building. The building was not sprinklered. Damages from this fire were estimated to be $150,000.

- On June 11, 2018, at 1:28 p.m., the Leyden Fire Department was called to a fatal fire in a single-family home of undetermined cause. The victim was a 59-year old woman, No one else was injured at this fire. It was undetermined if alarms were present. The building was not sprinklered. Damages from the blaze were estimated to be $328,548.

- On September 29, 2018, at 6:22 a.m., the Southwick Fire Department was dispatched to a fire in a single-family home of undetermined cause. The most likely cause an electrical problem in the basement. The victims, a 29-year old man and a 25-year old woman were asleep at the time of the fire and were overcome while trying to escape. There were no other injuries associated with this fire. Alarms were present but it was undetermined if they operated. The building was not sprinklered. Damages from this fire were estimated to be $475,000.

- On October 6, 2018, at 2:50 a.m., the New Bedford Fire Department was called to a fatal fire in a 3-unit apartment building of undetermined cause. The most likely cause was cooking on the gas range. The victim was a 51-year old woman. No one else was injured at this fire. It was undetermined if alarms were present. The building was not sprinklered. Damages from the blaze were estimated to be $80,000.

- On December 16, 2018, at 1:04 a.m., the Fall River Fire Department was called to a fatal fire in a 3-unit apartment building of undetermined cause. The most likely cause was the improper disposal of smoking materials. The victim was 67-year old man. No one else was injured at this fire. Alarms were present and alerted the occupants of the

building. The building was not sprinklered. Damages from the fire were estimated to be $110,000.

- On Christmas Day, December 25, 2018, at 9:01 p.m., the Avon Fire Department was called to a fatal fire in a single-family home of undetermined cause. The fire started in the kitchen. The victims were a 70-year old physically disabled man and his 28-year old son. The son went back into the building to rescue his father. Five (5) other civilians were injured at this fire. Alarms were not present. The building was not sprinklered. Damages from the blaze were estimated to be $123,400.

**Bedroom or Living Room Is the Area of Origin for 64% 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 64% were killed in fires that started in bedrooms or living rooms; 16, or 41%, succumbed to fires that originated in the living room, and nine victims, or 23%, died in fires that began in the bedroom. Six (6) victims, or 15%, died when the area of origin was the kitchen. Unclassified function rooms and the ceiling and floor assembly were each the area of origin of the fire for two, or 5%, of the residential fire deaths in 2018. An egress or exit was the area of origin for one, or 3%; a vehicle storage area was also the area of origin for one, or 3%; and an exterior balcony or unenclosed porch was the area of origin for one, or 3%, of the residential fire deaths in 2018. One (1) victim, or 3%, died in a fire where the area or origin was undetermined or not classified.

**33% of Deaths Involved Smoking Materials as a Heat Source**
Of the 39 residential building fire deaths, 33% involved smoking materials; 26% from cigarettes, 5% from undetermined smoking materials, 8% from matches, and 3% from a pipe or cigar. Thirteen percent (13%) were classified as heat from operating equipment; 5% from arcing, 5% from non-classified heat from operating equipment, 3% from radiated or conducted heat from operating equipment, and 3% from sparks, embers or flames from operating equipment. The *Heat Source* was undetermined or unclassified in 15 deaths, or 44%, of the residential building fire deaths in 2018.

**Bedding Was the Leading Item 1st Ignited**
Of the 39 residential building fire deaths, bedding was the item first ignited in 15% of residential fire deaths. Upholstered sofas or chairs were the item first ignited in 13% of these deaths. Wearing apparel on a person was the item first ignited in 5% of these deaths. Unclassified furniture or utensils accounted for 3%. Multiple items were also the item first ignited in 3% of these deaths. The item first ignited was undetermined or unclassified in 15, or 62%, of the residential building fire deaths in 2018.

**Alarm Operation Undetermined for 1/3 of Residential Fire Victims**
Of the 39 people who died in residential building fires in 2018, the smoke alarm performance was reported for 26 of the victims. Victims were not alerted by smoke alarms in nine fires that killed 10 people, or 25% of the victims. No alarms were present at all in five fires that were responsible for six, or 15%, of the deaths. In another four fires and four deaths, or 10%, there were alarms present but they failed to operate.

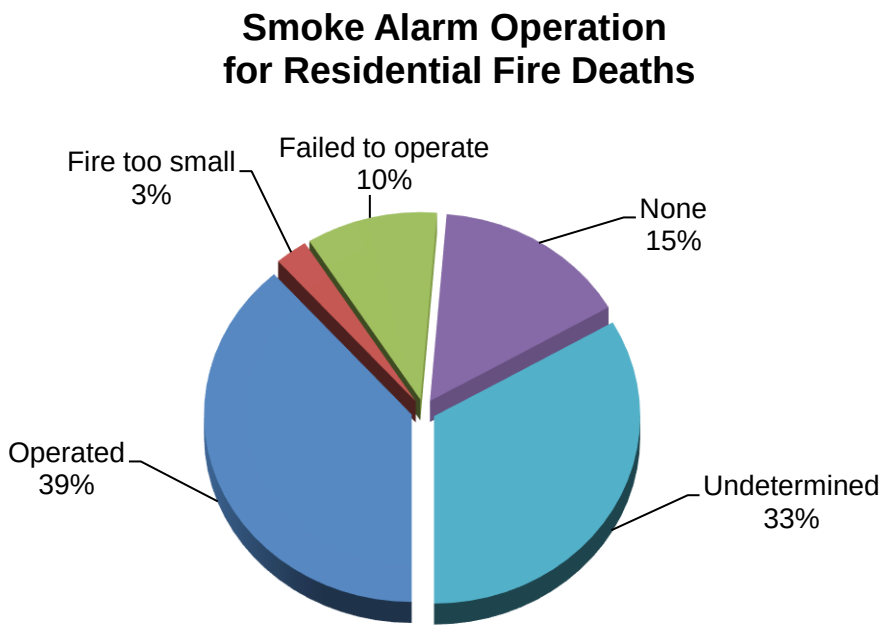
Fifteen (15) people died in 13 separate residential fires with alarms that did operate, accounting for 39% of fatal fire victims. It is important to remember that alarms provide an early warning of a fire. They do not guarantee an escape if exits are blocked or an individual's clothing ignites. A fire that appears small when discovered can quickly grow beyond an individual's ability to control or escape it.

One (1) person, or 3%, died in a fire where the fire was too small to activate the alarm.

In 2018, seven of the 15 fatal residential fire victims whose smoke alarms operated were in the area of origin. Seven (7) of these victims were intimately involved with ignition; four died in smoking fires, one died in a juvenile-set fire, and two others died in fires where the cause was undetermined.

In 2018 there were three victims that were not in the area of origin but were involved in the ignition of the fires. While smoke alarms 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.

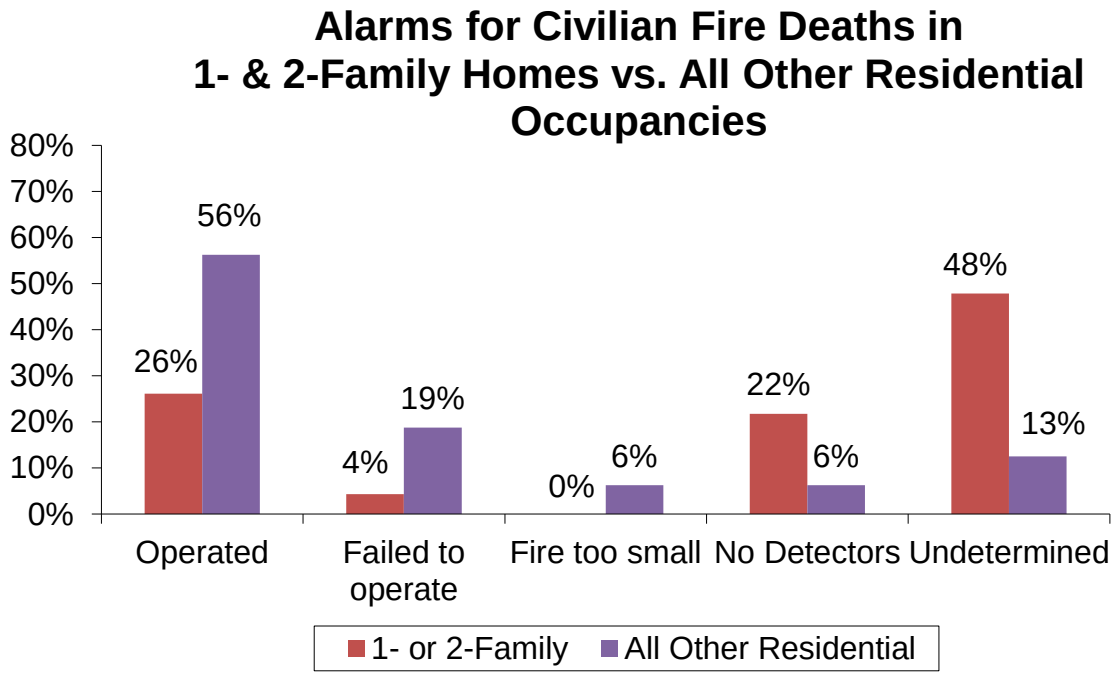
Alarm performance was undetermined in 11 residential building fires that killed 13 people, accounting for 33% of the residential building fire deaths in 2018. In five of these fires and six deaths the alarms were present but it was undetermined if they operated. The pie chart shows the smoke alarm status as a percentage of the civilian residential building fire deaths in 2018.



**No Working Smoke Alarms in 26% of Fire Deaths in 1 & 2-Family Homes**
In 2018, 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 44% more fire deaths in one- and two-family homes than all other residential occupancies combined. Twenty-three (23) people died in 20 one- and two-family dwelling fires in 2018. Six (6), or 26%, of the fire deaths in one- and two-family homes occurred in fires with no alarms at all or with alarms that failed to operate. Of these deaths, one occurred in a home where smoke alarms failed to work while the other five deaths were in homes where there were no smoke alarms present. Six (6) deaths, or 26%, occurred in homes where the smoke alarms operated. There were no deaths when the fire was too small to activate the alarm. Eleven (11) deaths, or 48%, occurred in nine fires where smoke alarm performance was undetermined.

**Other Residential Occupancies More Likely to be Protected by Smoke Alarms**
Fifteen (15) people died in 13 apartment fires, and one person died in an unclassified residential fire in 2018. The alarm performance was known for 14 of the victims. Nine (9) people died in seven fires where smoke alarms were present and working. Three (3) people were killed in fires where the alarm failed to operate, and another person died in a fire where there were no alarms. One (1) person died when the fire was too small to activate the alarm. Two (2) people died in two fires where alarm operation was undetermined.

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



**4 Alarms Failed**
Of the four residential fire deaths where smoke alarms were present but failed to operate, two failed to operate because of missing batteries, one failed from a lack of maintenance, and it was undetermined why the other alarm failed.

**21% of Older Adults Died in Fires with No Working Alarms**
Four (4), or 21%, of the 19 senior residential fire deaths had no working smoke alarms. Eight (8) senior deaths, or 42%, occurred where there were operating alarms. One (1) senior, or 5%, died in a fire where the fire was too small to activate the alarm. Six (6) seniors, or 32%, died in fires where the alarm presence or operation could not be determined. 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.

**Sleeping Led Human Factors Contributing to Injury[13]**
Of the 39 fatal residential building fire victims, 16 had a *Human Factor Contributing to Injury* reported in MFIRS. Twenty-six percent (26%) of the victims were asleep; 13% were bedridden or had another physical handicap; 5% were unconscious; 3% were possibly impaired by alcohol; and 3% were unattended or unsupervised persons. Twenty (20), or 51%, of the 39 civilian fire deaths did not report a human factor contributing to injury.

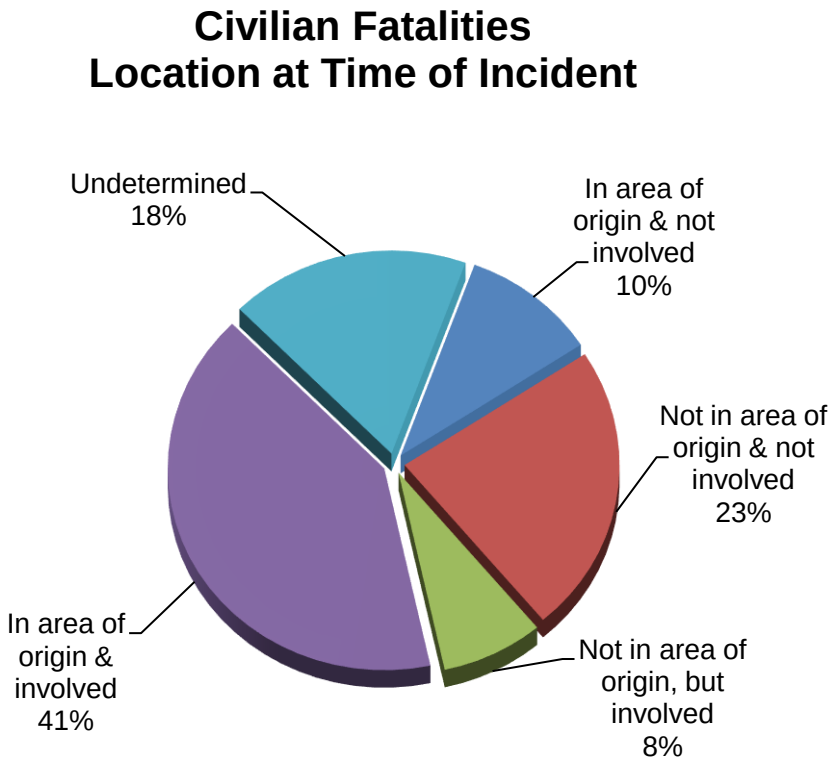
**1/3 of Victims Were Escaping When They Were Overcome**
Thirteen (13), or 33%, of the 39 fatal fire victims were trying to escape when they incurred their fatal injuries. Five (5) victims, or 13%, were unable to act. Two (2) victims, or 5%, returned to the vicinity of the fire before it was under control. One (1) victim, or 3%, was acting irrationally when they were injured and another person, or 3%, was killed trying to rescue someone else. Activity at time of death was undetermined or not reported for 17, or 44%, victims of fatal residential fires in 2018. Working smoke alarms combined with a home escape plan are essential to escape a fire.

**95% of the Victims Suffered Burns, Smoke Inhalation or Both**
Burns or smoke inhalation was the primary apparent symptom for 37, or 95%, of the victims; 25, or 64%, suffered burns and smoke inhalation; 10, or 26%, suffered from smoke inhalation only, and two, or 5%, just had thermal burns. There were two deaths, or 5%, where the primary apparent symptom was undetermined or not reported.

**Almost 1/2 of All Fatalities Were Somehow Involved in Ignition**
Nineteen (19), or 49%, of the residential fatal fire victims were somehow involved with the start of the fire that eventually killed them. Sixteen (16), or 41%, of these victims were in the area of origin and intimately involved with the ignition of the fire that killed them, and three, or 8%, 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

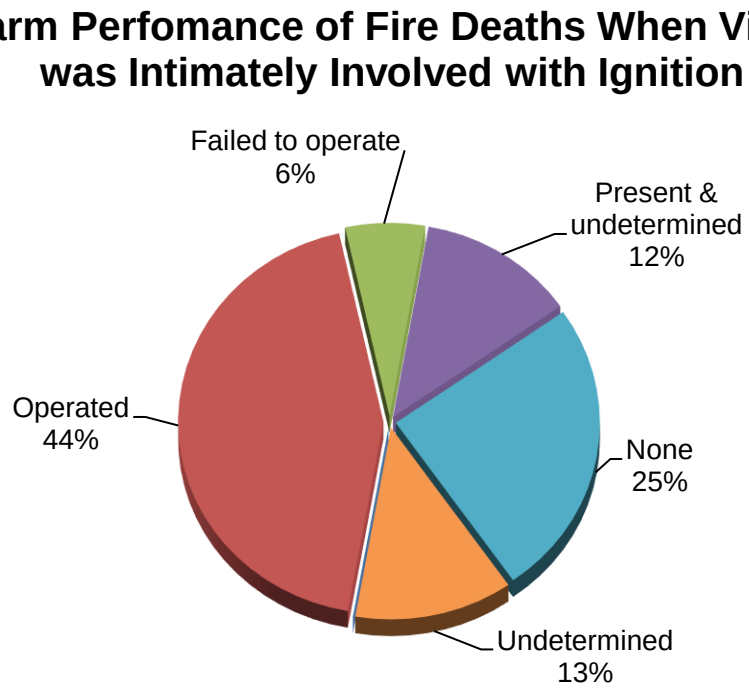
[13] Some fields in version 5 allow for multiple entries. Therefore the number of entries may be greater than the actual number of incidents being analyzed.

on the stove. Four (4), or 10%, were in the area of origin but not involved in the fire's ignition. Nine (9), or 23%, 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 seven, or 18%, of the residential fatal fire victims.




**44% of Alarms Operated When the Victim Was Intimately Involved in Ignition**
There were 16 victims that were reportedly in the area of origin and 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. Seven (7), or 44%, of these victims actually had a working smoke alarm in their home at the time of the fire. Four (4) fire deaths, or 25%, did not have any smoke alarms. In one of these deaths, or 6%, there were alarms present in the home but they failed to operate. Alarms were present but it was undetermined if they operated in two of the deaths, or 12%. There were no reported deaths where the fire was too small to activate the alarm. It was undetermined in two, or 13%, of these deaths if there were any alarms.

In the case of the seven victims where the alarms operated and were involved with the ignition, four were smoking fires, one was a juvenile-set fire, and the other two fire causes were undetermined. Four (4) of these victims were older adults.




# Fatal Motor Vehicle Fires

In 2018, two motor vehicle fires killed two 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. One (1) of these fires and the accompanying death involved a motor vehicle crash. One (1) of these fires involved death by suicide.

**1 Motor Vehicle Crash Kill 1 Occupant**
One (1) motor vehicle fire and the subsequent death was caused by a motor vehicle crash. This incident accounted for 3% of the fatal fires and 2% of the fire fatalities in the Commonwealth in 2018.

- On November 29 2018, at 3:00 a.m., the Wareham Fire Department was called to a fatal motor vehicle crash with ensuing fire. The victim, a 60-year old man, was trapped in the vehicle and died in the fire. No one else was injured at this fire. Damages from this fire were not estimated.

**1 Suicide Kills 1 Occupant**
One (1) motor vehicle fire and the subsequent death was suicide by fire. This incident accounted for 3% of the fatal fires and 2% of the fire fatalities in the Commonwealth in 2018.

- On October 19, 2018, at 5:28 p.m., the Weston Fire Department was dispatched to a motor vehicle fire in a parking lot. It is believed that the driver, a 47-year old man and only occupant of the vehicle set the car on fire. When the car burst into flames he died by suicide. No one else was injured in this fire. Damages from this fire were not estimated.

# Other Fatal Fires

In 2018, three outside fire incidents killed three civilians. These incidents accounted for 8% of the fatal fires and 7% of the fire fatalities in Massachusetts in 2018. One (1) of these incidents was a homicide, and the other two of these incidents were accidents. None of these were self-immolations.

**1 Victim Dies in Brush Fire**
- On February 15, 2018, at 6:37 a.m., the Chelsea Fire Department was called to a fatal brush fire in a small wood lot between Routes 1 and 16. The victim was a 42-year old homeless man. The most probable cause was improper disposal of smoking materials.

**1 Outside Homicide Fire Kills 1 Massachusetts Resident**
- On Mach 10, 2018, at 9:17 p.m., the Hatfield Fire Department was called to a fatal outside fire in a corn field. The victim was the only thing burning. The fire is believed to be a homicide. The victim, a 44-year old man, had been shot, doused in an ignitable liquid and set on fire and was still alive while he was transported from Northampton to the corn field in Hatfield. Multiple people have been arrested and charged in connection to this case.

**Victim Fell into Fire Pit Giving Her Severe Burns & Killing Her**
- On May 26, 2018, at 8:39 p.m., the Worcester Fire Department was called for an EMS call for an unresponsive woman. The victim, a 71-year old woman, had fallen into her fire pit in her backyard sometime during the day. She was discovered by a relative inside the fire pit. The fire had burned itself out.

# Multiple Fire Deaths

For statistical purposes, a fire is considered a multiple death fire if it kills three or more people. In 2018, there was one multiple death fire in Massachusetts. It was the fire in Springfield on March 18, 2018 that killed two siblings and their father.

# Explosion Deaths

**Merrimack Valley Natural Gas Explosions**
On Thursday, September 13, 2018 at approximately 4:30 p.m., Lawrence, Andover and North Andover experienced a man-made disaster that caused multiple explosions and fires that killed one person and injured many others.

- On September 13, 2018, at approximately 4:30 p.m., 60 to 80 fires, three explosions and numerous gas leaks occurred in parts of Lawrence, Andover and North Andover. There was a large mobilization of state, fire and law enforcement resources to support the suppression efforts and public safety needs of the three communities. Approximately 25 people were transported for related injuries. An 18-year old man died when a chimney toppled over onto his parked car. The cause was discovered to be an over pressurized gas line by Columbia Gas.

# Civilian Fire Deaths - Conclusion

**45 Civilians Died in Massachusetts Fires**
In 2018, there were 40 fatal fires in Massachusetts with 45 accompanying fatalities. This is a decrease of 13, or 22%, from the 58 civilian fire deaths reported in 2017. Of these 45 deaths, 39 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. Thirty-nine (39) of the 40 fatal structure fire victims died in residential building fires. Twenty-three (23) of these deaths occurred in one- or two-family homes, accounting for 51% of all fire deaths.

**Smoking Fires Are Leading Cause of Fire Deaths**
In 2018, smoking fires were the leading cause of residential fire deaths and fatal residential fires. These fires accounted for 13, or 33%, of residential fire deaths. Electrical fires were the second leading cause of fire deaths, accounting for 5, or 13%, of residential fire deaths. Juvenile-set fires caused three, or 8% of residential fire deaths.

**2 Children Died in a Fire**
Two (2) children under the age of 18 died in fires in Massachusetts in 2018. A one-year old boy and his two-year old brother died in juvenile-set fire in their apartment.

**44% of All Fire Deaths are Older Adults**
Twenty (20) older adults died in fires, accounting for 44% of all fire deaths in Massachusetts in 2018. Historically, the lack of working smoke alarms is a significant factor in senior fire deaths. In 2018, eight of the 19 senior residential fire deaths had working smoke alarms; two of the deaths occurred in a fire with no alarms at all; two occurred in fires where the alarms did not operate; one happened where the fire was too small to activate the alarm and in the other six deaths it was undetermined if alarms were present or operational.

**Older Adults at Significant Risk for Fire Death**
Older adults, especially those over the ages of 65 had a significant risk of dying in a fire. The risk of fire death for adults over the age of 85 is 4.4 and those adults between the ages of 75 and 84 is 2.7. Older adults between the ages of 65 and 74 were 3.2 times more likely to become a fire-related fatality.

**60% of People Died in Fires While They Slept**
Over half of the people who died in fires died while they slept. Twenty-seven (27), or 60%, of the fire victims died in fires that occurred between 10:00 p.m. and 7:00 a.m.

**39% of Fatalities Had Working Smoke Alarms**
Thirty-nine percent (39%) of the residential fire victims had a working smoke alarm. Many of these victims could have possibly survived if they had residential sprinklers to help them. Sixty-four percent (64%) of the victims died in fires that began in either the bedroom or living room. Bedding was the leading item first ignited. Also, when Primary Apparent Symptom was reported, 95% of the victims suffered burns, smoke inhalation or both.

**51% of Fatalities Were in the Area of Origin**
Twenty (20), or 51%, of all the civilians that died in residential fires were reported to be in the area of fire origin. Nineteen (19) 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.

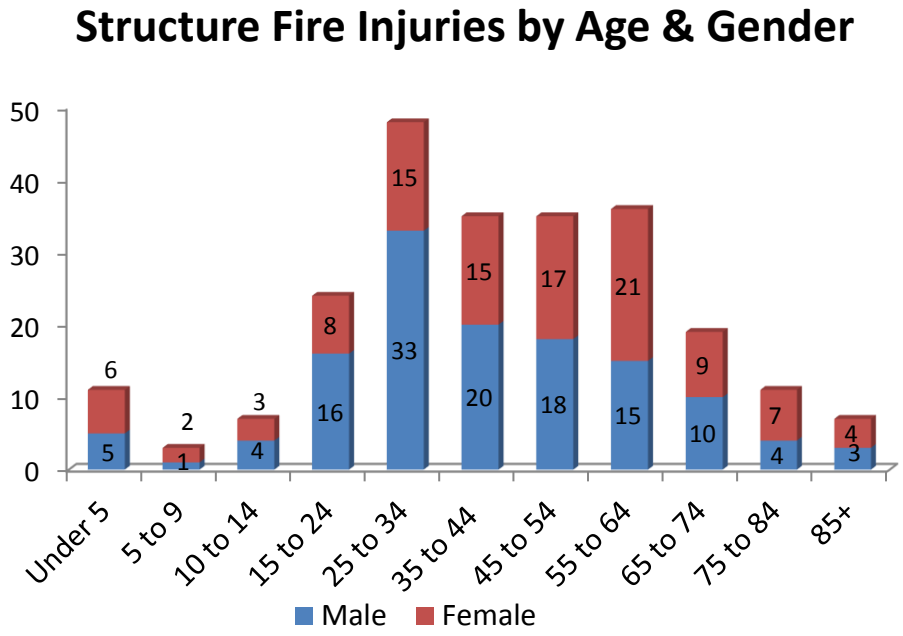
**3 Suicides – Continues Tragic Trend**
In past years there were a tragic number of people who used fire to take their own lives. In 2018, there were two confirmed suicides and one possible suicide. Both were by self-immolation, one at home and one in a car. In 2017 there were three. In the past 10 years there have been 43 civilian fire deaths by suicide. In the past five years there's been 15 civilian fire deaths by suicide.

# Civilian Injuries

**289 Civilians Injured in Fires in 2018 – Mostly at Home**
Massachusetts' fires injured 289 civilians in 2018. Two hundred and thirty-six (236), or 82%, of civilian injuries occurred in structure fires. Two hundred and twelve (212) injuries occurred in residential building fires, accounting for 73% of all injuries and 90% of all structure fire injuries. Fourteen (14), or 5%, occurred in motor vehicle fires. Thirty-nine (39), or 13%, of civilian injuries occurred in outside and other fires. Special outside fires accounted for nine, or 3%, of all civilian injuries, and brush fires accounted for three, or 1%, of civilian fire injuries. Outside rubbish fires accounted for two, or 1% of all civilian fire injuries. Twenty-five (25), or 9%, of civilian injuries were caused by unclassified fires.

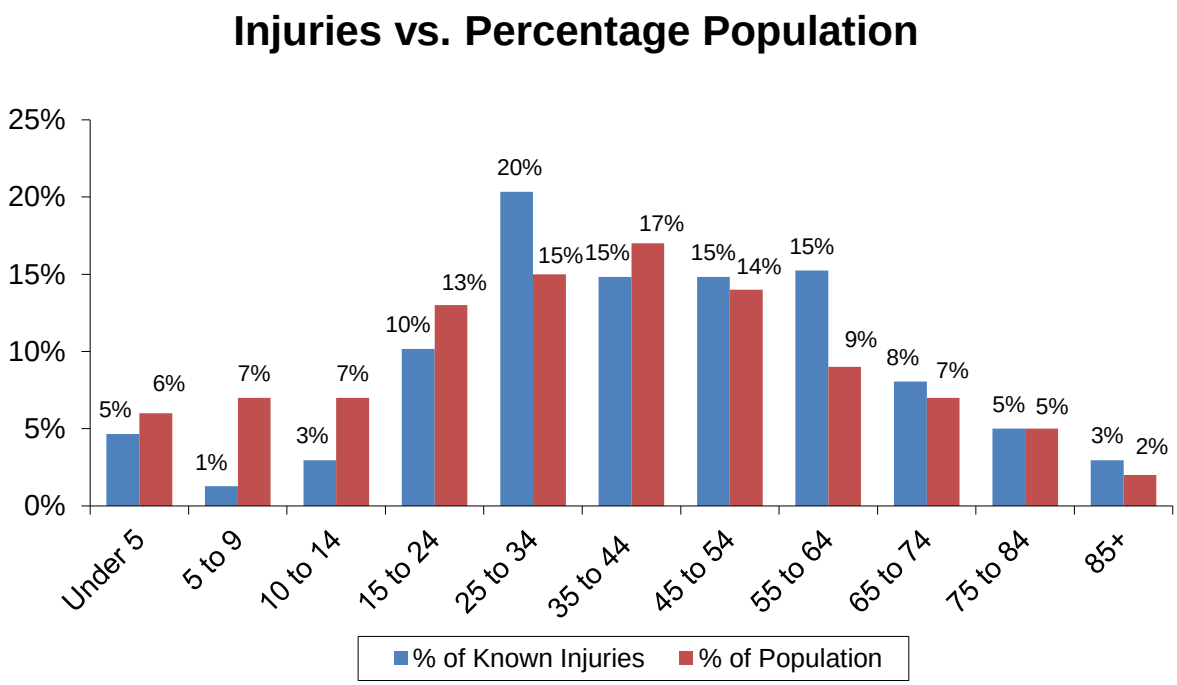
## Structure Fire Injuries

Of the 236 civilian injuries resulting from structure fires where gender was reported, 129, or 55%, were men and 107, or 45%, were women. Overall, 24 children under 18 years of age, 175 adults aged 18 to 64 years old, and 37 older adults over the age of 65, were injured in structure fires in 2018. The following chart illustrates the structure fire injuries by age and gender in 2018.



**Adults 25 to 34 at Highest Risk for Fire Injury**
Adults between the ages of 25 and 34 represent 15% of the population and yet they accounted for 20% of the injuries in 2018. In this age grouping, 51% of the fire-related injuries were incurred while trying to control the fire, and 19% were injured trying to escape. 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. Adults between the ages of 55 and 64 represent 9% of the Massachusetts population, yet they accounted for 15% of the injuries at structure fires in 2018. Adults between the ages of 45 and 64 and older adults between the ages of 65 and 74 and over the age of 85 were also at slightly higher risk for a fire injury.

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.




**85% of Injuries Were Directly Related to Exposure to Fire Products**
Of the 212 civilian injuries in structure fires where the *Cause of Injury* was known, 85% were directly linked to exposure to fire products. The *Cause of Injury* was not reported or Undetermined in 24 civilian fire injuries. These were excluded from the percentage calculations

| Cause of Injury | # of Injuries | % Known Injuries |
|---|---|---|
| Other | 5 | 2% |
| Exposed to fire products | 181 | 85% |
| Exposed to hazmat or toxic fumes | 12 | 6% |
| Jumped in escape attempt | 0 | 0% |
| Fell, slipped or tripped | 3 | 1% |
| Caught or trapped | 5 | 2% |
| Structural collapse | 0 | 0% |
| Struck by or contact w/object | 3 | 1% |
| Overexertion | 2 | 1% |
| Multiple causes | 1 | 0.5% |
| Total Known | 212 | 100% |

**83% of Injuries Were Due to Smoke Inhalation or Burns or Both**

Of the 206 civilian injuries in structure fires where the *Primary Apparent Symptom* was known, 83% were caused by smoke inhalation, burns or both. The nature of injury was undetermined or not reported in 30 civilian fire injuries. These were excluded from the percentage calculations.

| Primary Apparent Symptom | # of Injuries | % Known Injuries |
|---|---|---|
| Smoke inhalation | 94 | 46% |
| Burns only, thermal | 51 | 25% |
| Burns & smoke inhalation | 26 | 13% |
| Breathing difficulty, shortness of breath | 10 | 5% |
| Burn, scald | 8 | 4% |
| Cardiac symptoms | 4 | 2% |
| Cut or laceration | 2 | 1% |
| Shock | 2 | 1% |
| Strain or sprain | 2 | 1% |
| Burn, chemical | 1 | 0% |
| Contusion, bruise | 1 | 0% |
| Hazardous fumes inhalation | 1 | 0% |
| Hemorrhaging, bleeding | 1 | 0% |
| Pain only | 1 | 0% |
| Respiratory arrest | 1 | 0% |
| Vomiting | 1 | 0% |
| Total Known | 206 | 100% |

**37% Injured While Trying to Control the Fire**

Of the 176 victims for whom A*ctivity at Time of Injury* was known, 37% were attempting to control the fire. There were 60 injuries where the activity at time of injury was unknown; these were excluded from the percentage calculations.

| Activity When Injured | # of Injuries | % Known |
|---|---|---|
| Fire control | 65 | 37% |
| Escaping | 47 | 27% |
| Other | 16 | 9% |
| Sleeping | 13 | 7% |
| Unable to act | 12 | 7% |
| Irrational Act | 9 | 5% |
| Rescue attempt | 8 | 5% |
| Return to vicinity of fire before control | 6 | 3% |
| Return to vicinity of fire after control | 0 | 0% |
| Total known | 176 | 100% |

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 1/2 of Victims Were Asleep Just Before the Injury**

Of the 48 victims for which the *Human Factor Contributing to the Injury* was known, 44% were asleep. 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 table on the next page 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.

**CIVILIAN INJURIES BY ACTIVITY AND PRIOR CONDITION**

**Human Factors Contributing to Injury**

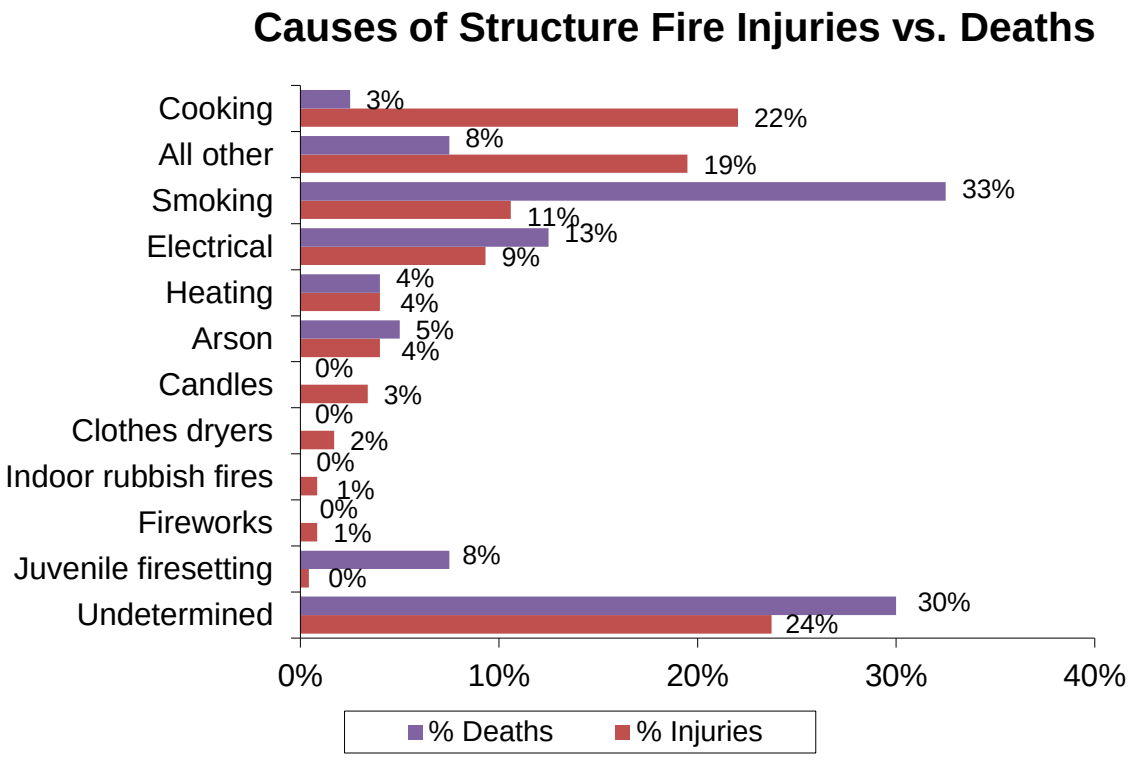
| Activity At Injury | Asleep | Uncon-scious | Possibly Impaired: Alcohol | Possibly Impaired: Drugs | Mentally Disabled | Physically Disabled | Physically Restrained | Unsuper-vised |
|---|---|---|---|---|---|---|---|---|
| Escaping | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Rescue attempt | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fire control | 2 | 0 | 1 | 1 | 0 | 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 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Unable to act | 1 | 0 | 1 | 0 | 1 | 3 | 0 | 0 |
| Irrational act | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unknown | 1 | 1 | 3 | 0 | 0 | 1 | 0 | 1 |
| Total | 19 | 1 | 6 | 3 | 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. The other leading cause is when someone was asleep, awoke and attempted to escape.

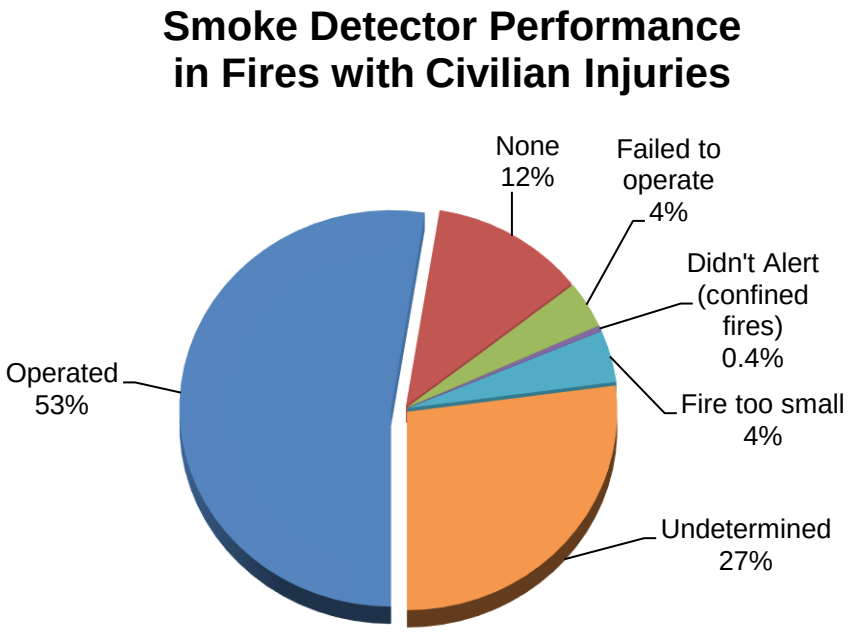
**48% of All Victims Were Involved With the Ignition of the Fire**
Forty-eight percent (48%) of all victims were involved with the ignition of the fire that injured them. The *Location at Time of Incident* was undetermined or not reported in 52 civilian fire injuries. These were excluded from the percentage calculations.

| Location at Time of Incident | # of Injuries | % Known Injuries |
|---|---|---|
| In area of origin & not involved | 57 | 31% |
| Not in area of origin & not involved | 38 | 21% |
| Not in area of origin & involved | 21 | 11% |
| In area of origin & involved | 68 | 37% |
| Total Known | 184 | 100% |

**Cooking Fires Were the Leading Cause of Injuries in Structure Fires**
The leading cause of fire-related injuries is rarely a leading cause of fire-related deaths. Cooking fires caused almost one quarter, or 22% of civilian fire injuries and only 3% of civilian fire deaths.



**Alarms Operated in 53% of Civilian Injuries**
Of the 236 injuries where alarm status was reported, 53% occurred where smoke alarms were present and operated. Smoke alarm performance was undetermined in 64 injuries, or 27% of all injuries. The presence of operating smoke alarms generally gives the victims the time needed to escape the byproducts of the fire: heat, flame and smoke, or alerts them to the fire and they are injured trying to extinguish it.




## Motor Vehicle Fire Injuries

There were 14 motor vehicle fire injuries in 2018, accounting for 5% of all civilian fire injuries. Ten (10) of these injuries were to men and four were to women. Seventy percent (70%) of the injuries were caused by exposure to fire products, when the cause was known.

| Cause of Injury | # of Injuries | % Known Injuries |
|---|---|---|
| Exposed to fire products | 7 | 70% |
| Exposed to hazardous material or toxic fumes | 1 | 10% |
| Struck by or contact w/object | 1 | 10% |
| Total | 15 | 100% |

When the *Primary Apparent Symptom* was reported, 42% of these were reported as burns only.

| Primary Apparent Symptom | # of Injuries | % Known Injuries |
|---|---|---|
| Burns only, thermal | 5 | 42% |
| Smoke inhalation | 2 | 17% |
| Burns & smoke inhalation | 2 | 17% |
| Cardiac symptoms | 1 | 8% |
| Breathing difficulty, shortness of breath | 1 | 8% |
| Pain only | 1 | 7% |
| Total | 12 | 100% |

Where the *Activity at Time of Injury* was known, 31% were trying to extinguish the fire. There was one injury where the activity at time of injury was unknown; these injuries were excluded from the percentage calculations.

| Activity at Time of Injury | # of Injuries | % Known |
|---|---|---|
| Other | 4 | 31% |
| Fire control | 4 | 31% |
| Escaping | 3 | 23% |
| Return to vicinity of fire before fire under control | 1 | 8% |
| Irrational act | 1 | 8% |
| Total | 14 | 100% |

The causes of motor vehicle fires that injured civilians in 2018 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

Thirty-nine (39), or 13%, of civilian fire injuries occurred in outside and other fire incidents in 2018. Nine (9), or 23%, of civilian injuries were caused by special outside fires.

| Incident Type | # of Injuries | % of Outside & Other Fire Injuries | % Total Injuries |
|---|---|---|---|
| Fire - Other | 25 | 64% | 9% |
| Brush Fire | 3 | 8% | 1% |
| Outside rubbish fire | 2 | 5% | 1% |
| Special outside fire | 9 | 23% | 3% |
| Total | 39 | 100% | 13% |

Seventy-nine percent (79%) of the civilian victims were men and 8% were women.

Burns accounted for 51% of the injuries to this group, when the *Primary Apparent Symptom* was known. There were four injuries where the activity at time of injury was unknown; these were excluded from the percentage calculations.

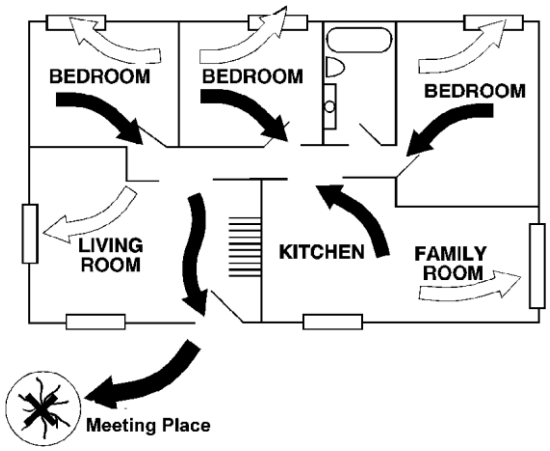
| Primary Apparent Symptom | # of Injuries | % Known |
|---|---|---|
| Smoke inhalation | 4 | 11% |
| Hazardous fumes inhalation | 5 | 14% |
| Burns and smoke inhalation | 5 | 14% |
| Burns only: thermal | 18 | 51% |
| Burns, scald | 1 | 3% |
| Cut or laceration | 1 | 3% |
| Pain only | 1 | 3% |
| Total | 41 | 100% |

The victims were intimately involved with the ignition in 61% of these injuries where *Location at Ignition* was known. There were six injuries where the activity at time of injury was unknown; these were excluded from the percentage calculations.

| Location at Ignition | # of Injuries | % Known Injuries |
|---|---|---|
| In area of origin & not involved | 13 | 39% |
| Not in area of origin & not involved | 0 | 0% |
| Not in area of origin & involved | 1 | 3% |
| In area of origin & involved | 19 | 58% |
| Total | 33 | 100% |

## Safety Practices Are the Best Prevention Methods

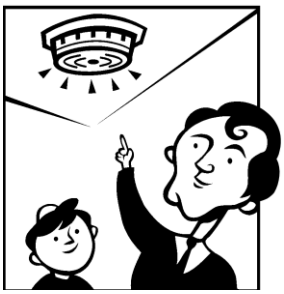
In a typical nighttime fire, there is a window of 1-3 minutes in the average home after the smoke alarm sounds for the family to get out safely. In a few minutes, heat and toxic gases make escape impossible. To survive a fire, one must install and maintain smoke alarms, and when possible install sprinklers. 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.



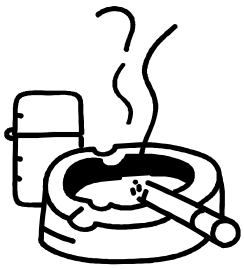
**Smoke Alarms**

- Install smoke alarms on every level and outside each sleeping area.
- Test smoke alarms monthly.
- Replace the batteries twice a year if you don't have 10-year sealed lithium batteries in your alarms.
- Never disable your alarm.
- Replace alarms 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.

# 2018 Firefighter Deaths

**1 Fire-Related Firefighter Death in 2018**
In 2018, there was one fire-related fire service fatality in the Commonwealth of Massachusetts. 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.

Worcester Firefighter Christopher Roy

**Worcester 12/9/18 - FF Christopher Roy, Age 36**
On Sunday, December 9, 2018, at 3:58 a.m., the Worcester Fire Department was called to an intentionally-set fire in an apartment building at 7 Lowell St. FF. Christopher Roy was inside the building performing suppression duties with the rest of his crew when conditions deteriorated rapidly with heavy fire forcing several firefighters to evacuate. Nearby firefighters extricated him from the home and immediately transported him to a local hospital where he succumbed to his injuries, he was 36-years old.

# Fire Service Injuries

**425 Firefighters Injured in 2018**
In 2018, 425 firefighters were injured while fighting the 25,504 reported fires in Massachusetts. On average, one firefighter was injured at one of every 60 fires in 2018. Four hundred and one (401) firefighters were injured at structure fires. Eleven (11) firefighters were injured at motor vehicle fires. Thirteen (13) firefighters were injured at outside and other fires. This is a decrease of 10, or 2%, from the 435 fire-related fire service injuries reported in 2017.

**94% of Firefighter Injuries Occurred at Structure Fires**
Firefighters were injured more frequently at structure fires than any other fire incident type. Ninety-four percent (94%) of firefighter injuries occurred at structure fires, while structure fires only accounted for 63% of all fires.

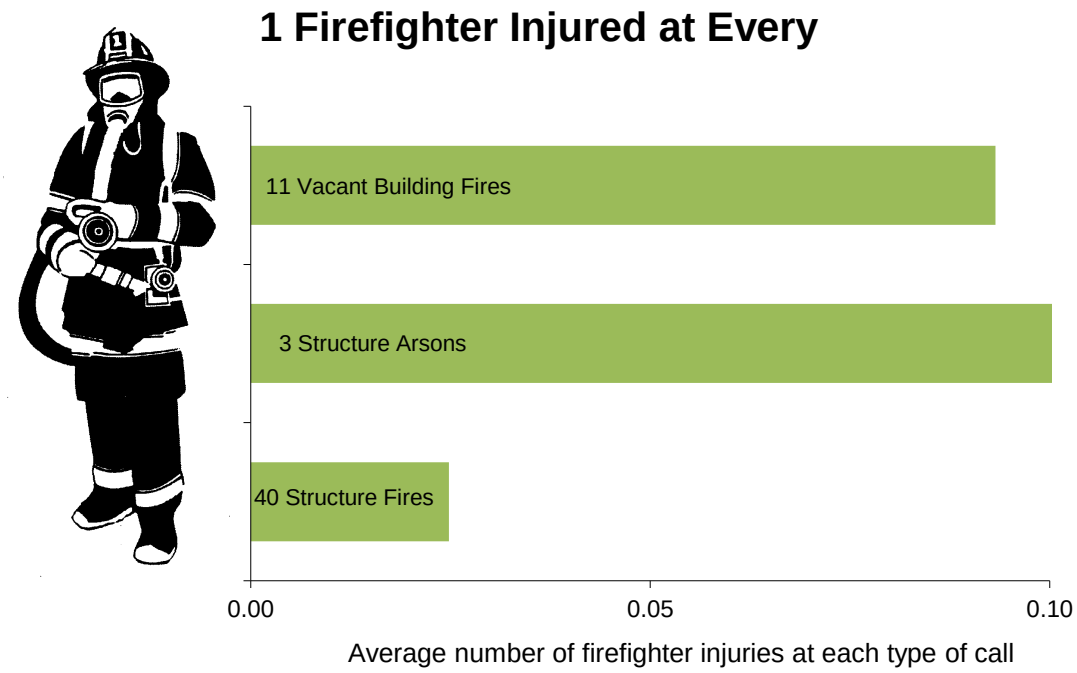
**Electrical Fires Caused the Most Injuries at Structure Fires**
The largest number of firefighter injuries took place at structure fires caused by electrical problems. One hundred and one (101), or 25%, of structure fire firefighter injuries occurred at electrical fires. Structure arsons accounted for 42, or 10% of all structure fire firefighter injuries. Even though cooking fires are the leading cause of structure fires and civilian fire injuries, fires caused by cooking accounted for 30, or 7%, of fire service injuries at structure fires. Smoking fires and heating equipment fires each accounted for 13, or 3%, of structure fire firefighter injuries.

**Firefighters Injured at 1 of Every 3 Structure Arsons**
One of the most dangerous types of fires for firefighters in 2018 were vacant building fires. Vacant building fires accounted for 22, or 5%, of all firefighter injuries. These 22 injuries also represent 5% of the number of firefighter injuries incurred fighting structure fires in 2018.

However, 2018 was the first year where firefighters were injured on average more frequently at structure arsons. On average there was one firefighter injury for every 11 vacant building fire. There was one firefighter injury for every three structure arsons; and one firefighter injury for every 40 structure fires[14].

[14] On average there were 0.09 firefighter injuries at every vacant building fire; there were only 0.31 reported firefighter injuries per structure arson in 2018; and there were 0.02 reported firefighter injuries per structure fire in the Commonwealth in 2018.

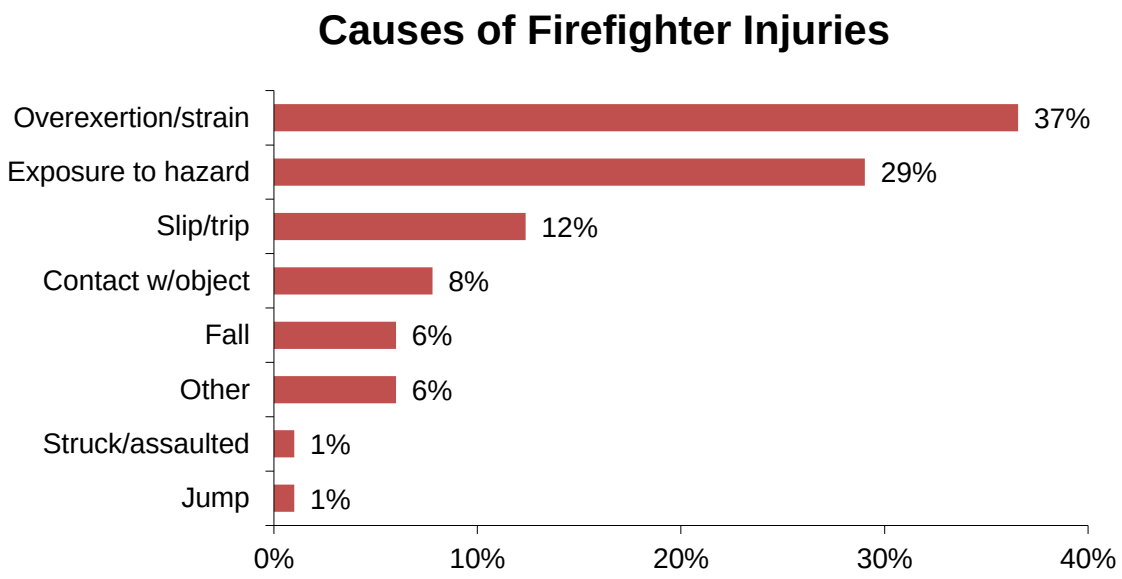
The following graph illustrates this.



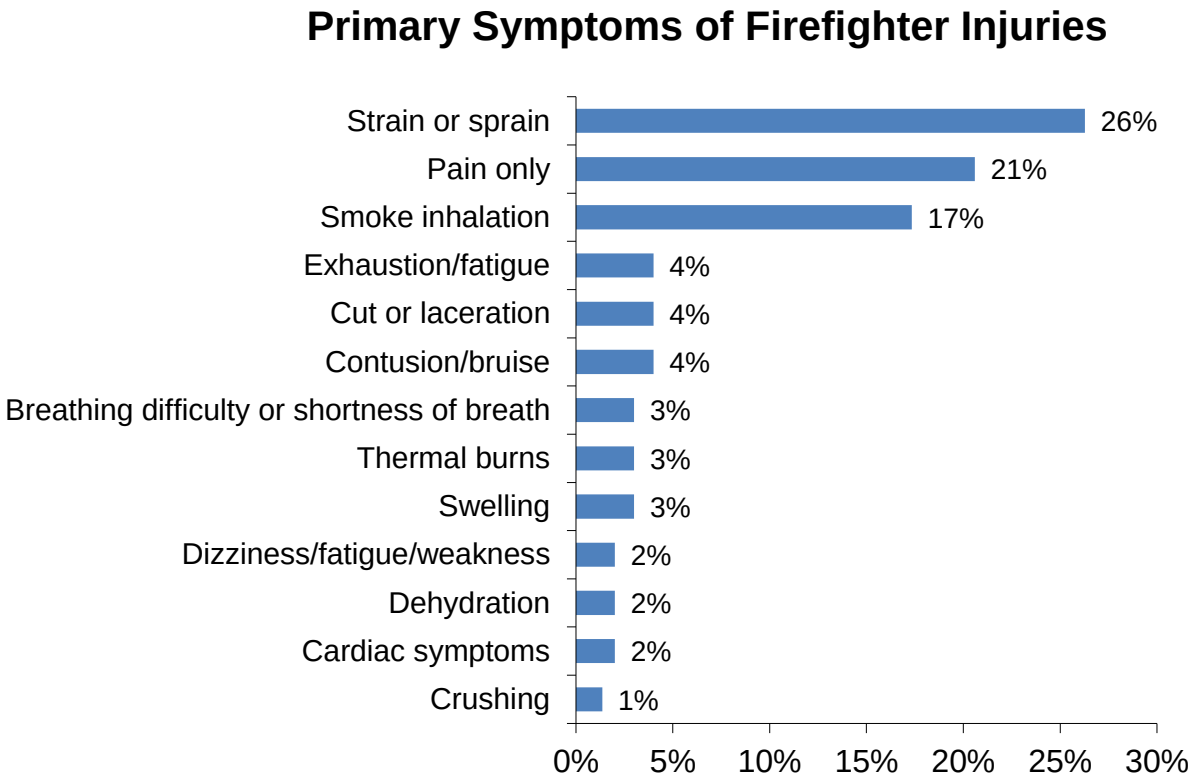

**Over 3/4 of Firefighter Injuries Minor**
Seventy-six percent (76%) of reported firefighter injuries were minor.

| Severity | # of FF Injuries | % of FF Injuries |
|---|---|---|
| Report only, including exposure | 239 | 56% |
| First aid only | 41 | 10% |
| Treated by physician, not a lost time injury | 44 | 10% |
| Lost time injury, moderate severity | 89 | 21% |
| Lost time injury, severe | 11 | 3% |
| Lost time injury, life threatening | 1 | 0.2% |
| Total Known | 425 | 100% |
| Minor | 324 | 76% |

**37% of Injuries from Overexertion or Strain**
Thirty-seven percent (37%) of all reported firefighter injuries were from overexertion or strains.




**26% Experienced Sprains or Strains & 20% of Firefighters Reported Pain**
The leading *Primary Symptoms* for firefighter injuries were strains or sprains, pain and smoke inhalation.



**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.

**21% 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. Sixty-three (63), or 21%, of all firefighter injuries were to the trunk part of the body that includes the lower back. 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.

# Leading Firefighter Injuries by Part of Body

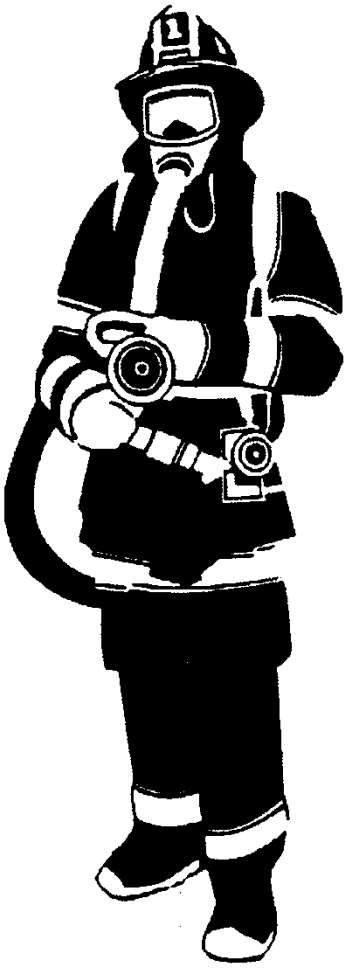
**Eyes (4)**
Avulsion 50%
Swelling 25%

**Trunk (63)**
Strain or sprain 41%
Pain only 35%

**Internal (25)**
Smoke inhalation 32%
Breathing difficulty 16%
Cardiac symptoms 12% 11%

**Hand, Fingers (36)**
Cut, laceration 22%
Strain or sprain 14%
Crushing 11%

**Legs (12)**
Strain or sprain 67%
Pain only 25%
Swelling 8%



**Ears & Face (9)**
Smoke inhalation 56%
Thermal burns 22%
Cut or laceration 11%

**Back & Spine (31)**
Pain only45%
Strain or sprain 39%

**Arms (17)**
Pain only45%
Strain or sprain 39%
Cut or laceration 3%

**Wrists (12)**
Strain or sprain 42%
Pain only 33%

**Knees (28)**
Strain or sprain 57%
Pain only32%

**Feet & Toes (6)**
Pain only33%

**Fireworks Fire in Lynn Injures 34 Firefighters – Most Fire Service Injuries**

- On June 25, 2018, the Lynn Fire Department was called to fire in a six-unit apartment building. The fire was started by individuals setting off fireworks in the street; one of which ricocheted to the second floor porch and ignited combustibles. The fire extended up and out to the rest of the second and third floors. Thirty-four (34) firefighters were injured at this fire. Alarms were present but it was undetermined if they operated. The building did not have sprinklers. Damages from this fire were estimated to be $484,000.

**Lynn Electrical Fire Injures 30 Firefighters –2nd Most Fire Service Injuries**

- On June 21, 2018, at 5:03 p.m., the Lynn Fire Department was called to an electrical fire in a three-unit apartment building. The fire was caused by arcing in a first floor bathroom. Thirty (30) firefighters were injured at this fire. Most of them were for exposure to asbestos. Alarms were present and alerted the occupants. Sprinklers were not present. Damages from this fire were estimated at $50,000.

# Arson Fires

**551 Arsons - 134 Structures, 78 Vehicles, 339 Other Arsons**

Five hundred and fifty-one (551), or 2%, of the 25,504 fire incidents reported to the Massachusetts Fire Incident Reporting System were considered to be intentionally-set, or for the purpose of analysis, arson[15]. The 134 structure arsons, 78 motor vehicle arsons, and 339 outside and other arsons caused four civilian deaths, accounting for 9% of civilian fire deaths, one fire service death, 13 civilian injuries and 43 fire service injuries. The estimated dollar loss from arson was $5.5 million. The average dollar loss per arson fire was $9,892. Total arson was down by 19% from the 681 in 2017.

**670 Fires with Cause Still Under Investigation**

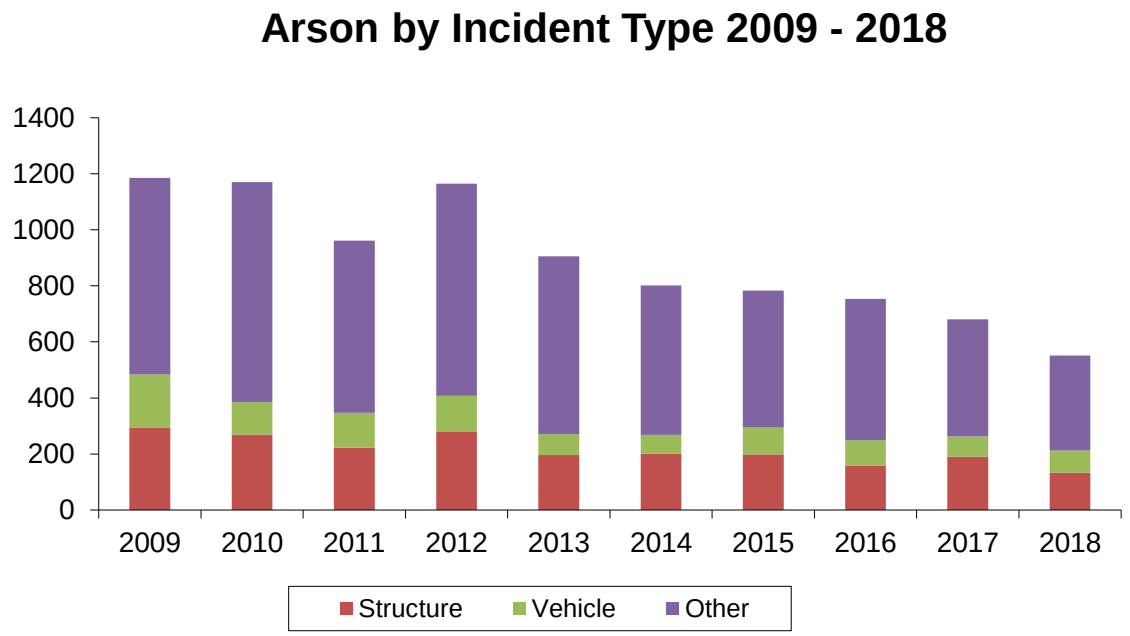
In 2018, 670 Massachusetts fires were still listed as 'Cause Under Investigation'. There were 2,712 fires where the *Cause of Ignition* was listed as 'Undetermined'. It is important that fire departments update their fire incident reports when either a cause is determined or its cause is deemed to be undetermined after investigation.

The following table and chart 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 arsons, including structure and outside and other arsons are at an all-time low.

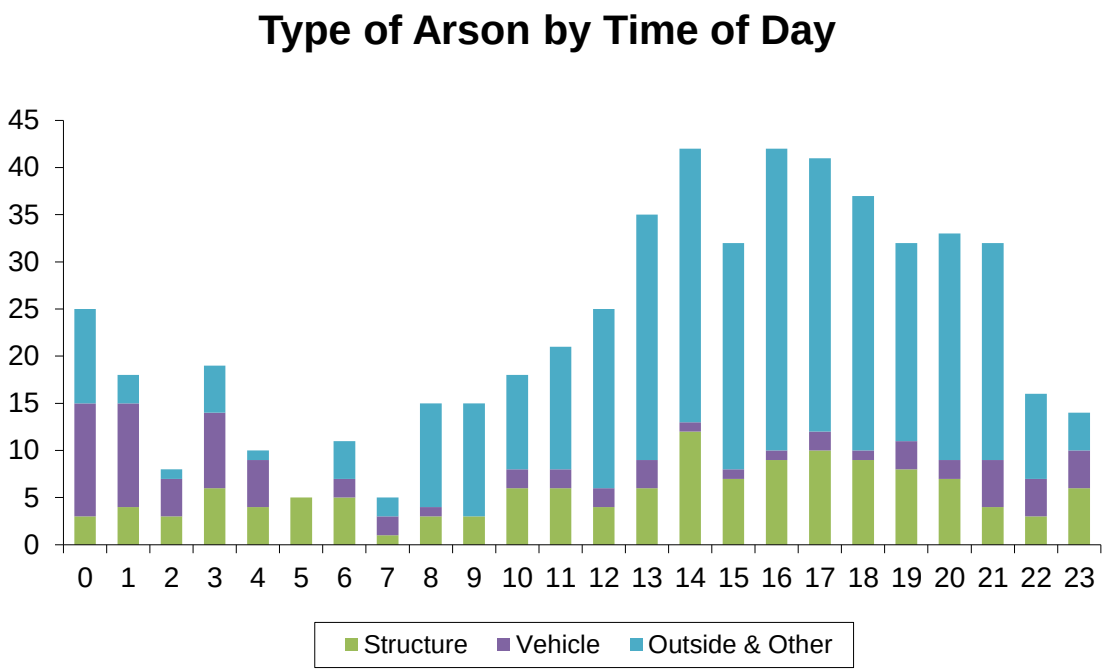
[15] In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater 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 |
|---|---|---|---|---|---|---|---|
| 2018 | 551 | 134 | 24% | 78 | 14% | 339 | 62% |
| 2017 | 681 | 191 | 28% | 72 | 11% | 418 | 61% |
| 2016 | 754 | 158 | 21% | 91 | 12% | 505 | 67% |
| 2015 | 803 | 208 | 25% | 98 | 12% | 497 | 62% |
| 2014 | 810 | 203 | 25% | 68 | 8% | 539 | 67% |
| 2013 | 907 | 196 | 22% | 75 | 8% | 636 | 70% |
| 2012 | 1,169 | 284 | 24% | 126 | 11% | 759 | 65% |
| 2011 | 976 | 224 | 23% | 124 | 10% | 628 | 67% |
| 2010 | 1,189 | 269 | 23% | 116 | 10% | 804 | 66% |
| 2009 | 1,196 | 295 | 25% | 189 | 16% | 712 | 59% |




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 4:00 p.m. to 10:00 p.m. The peak times for structure arsons were between 2:00 p.m. and 8:00 p.m. Motor vehicle arsons were most likely to occur between 9:00 p.m. and 3:00 a.m. Outside and other arsons peaked from 1:00 p.m. to 11:00 p.m.



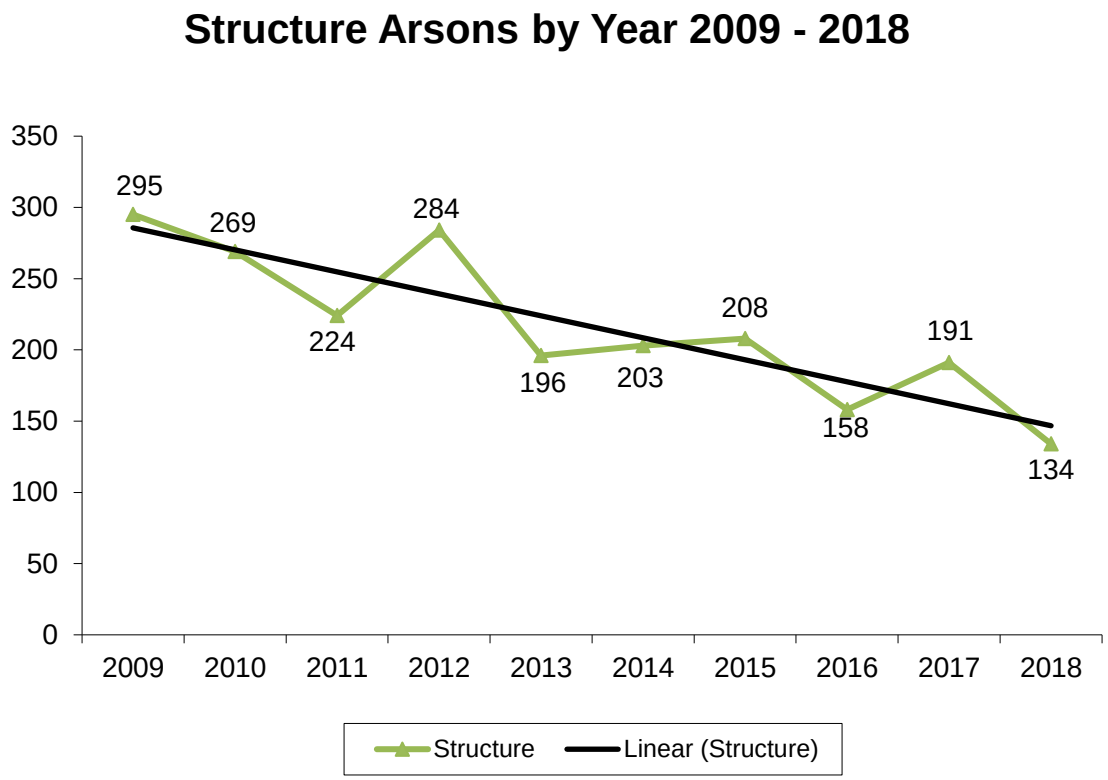

# Structure Arson

**134 Arsons, 2 Civilian Deaths & 1 Fire Service Death**
In 2018, there were 134 reported structure arsons. They caused two civilian deaths, one fire service death, nine civilian injuries, 42 fire service injuries and an estimated dollar loss of $4.8 million. These 134 incidents accounted for 1% of the 16,169 structure fires in 2018, and were down 30% from the 16,169 reported structure arsons in 2017.

There were two civilian deaths in structure arsons in 2018. One (1) of these deaths was a suicide; and in the other case, the victim set multiple fires inside his home, to his vehicle and a shed on his property. The fire service death was the only fire-related fire service death in 2018. The nine civilian injuries accounted for 3% of the overall civilian injuries and 4% of all civilian injuries at structure fires. The 42 fire service injuries accounted for 10% of the total fire service injuries and 10% of the injuries firefighters sustained at all structure fires in 2018. The estimated dollar loss for structure arsons was $4,812,226, accounting for 2% of the overall dollar loss and 2% of the estimated dollar loss in all reported structure fires. The average loss per structure arson was $35,912.

In 2018, 372 Massachusetts structure fires were still listed as ‘Cause Under Investigation’. There were 750 structure fires where the *Cause of Ignition* was listed as ‘Undetermined’.

**Structure Arsons Down**
Structure arsons decreased by 57, or 30%, from the 191 reported in 2017.




**Structure Arson Down 55% Since 2009**
Structure arsons have been on a downward trend since 1991 when 1,974 structure arsons were reported to MFIRS. Structure arsons have decreased by 55% since 295 were reported in 2009. The above chart shows the trend of structure arsons in the past decade.

**Building Arsons**
In 2018 there were 133 building arsons. These accounted for 99% of all the structure arsons in Massachusetts. These building arsons caused two civilian deaths, one fire service death, nine civilian injuries and 42 fire service injuries and $4.8 million in estimated dollar loss.

**80% of Building Arsons Occurred in Residences**
One hundred and six (106), or 80%, of the 133 building arsons occurred in residential occupancies. Storage facilities and mercantile and business properties each accounted for 5% of these arsons and educational facilities and special properties each accounted for 3%. 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**

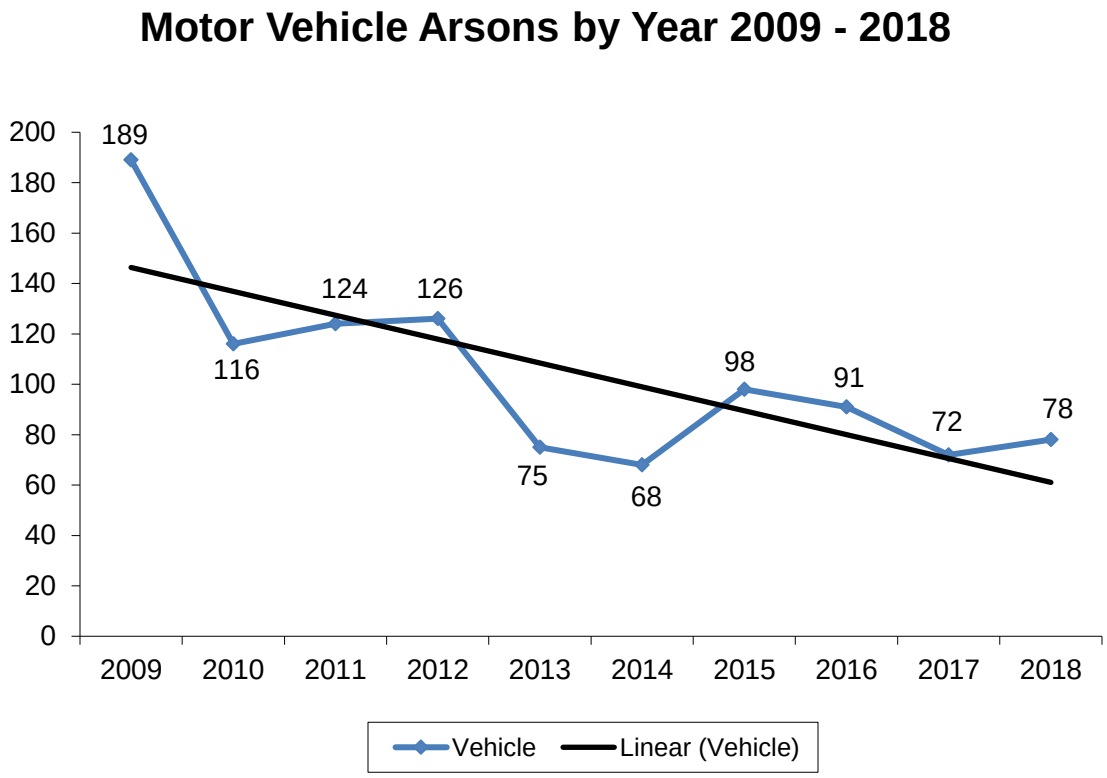
| Occupancy | Building Arsons | Percent of Total | Injuries FF | Injuries Civ | Deaths FF | Deaths Civ | Dollar Loss |
|---|---|---|---|---|---|---|---|
| Assembly | 2 | 3% | 0 | 0 | 0 | 0 | $70,000 |
| Educational | 4 | 3% | 0 | 0 | 0 | 0 | 4,100 |
| Institutional | 3 | 2% | 0 | 0 | 0 | 0 | 0 |
| **Residential** | **106** | **80%** | **42** | **8** | **1** | **2** | **4,654,376** |
| *1- & 2-Family* | *48* | *36%* | *1* | *1* | *0* | *1* | *763,470* |
| *Multifamily* | *48* | *36%* | *41* | *6* | *1* | *1* | *3,823,681* |
| *All Other Residential* | *10* | *8%* | *0* | *1* | *0* | *0* | *67,225* |
| Mercantile, business | 6 | 5% | 0 | 0 | 0 | 0 | 70,250 |
| Basic Industry | 0 | 0% | 0 | 0 | 0 | 1 | 0 |
| Manufacturing | 2 | 2% | 0 | 0 | 0 | 0 | 0 |
| Storage | 6 | 5% | 0 | 1 | 0 | 0 | 13,500 |
| Special Properties | 14 | 3% | 0 | 0 | 0 | 0 | 0 |
| Unclassified | 1 | 1% | 0 | 0 | 0 | 0 | 0 |
| **Total** | **133** | **100%** | **42** | **9** | **1** | **2** | **$4,812,226** |

# Motor Vehicle Arson

**78 Arsons – 1 Civilian Death & $561,369 in Damages**

Seventy-eight (78), or 3%, of the 2,468 vehicle fires were considered intentionally-set in 2018. There was one civilian death in a motor vehicle arson in 2018; it was a death by suicide. These arsons caused an estimated dollar loss of $561,369, accounting for less than 1% of the overall fire dollar loss and 2% of the dollar loss associated with all the 2018 motor vehicle fires. The average loss per vehicle arson was $7,197. Passenger cars and vans accounted for 71% of the 78 motor vehicle arsons.

In 2018, 172 Massachusetts motor vehicle fires were still listed as 'Cause Under Investigation'. There were 618 motor vehicle fires where the *Cause of Ignition* was listed as 'Undetermined'.



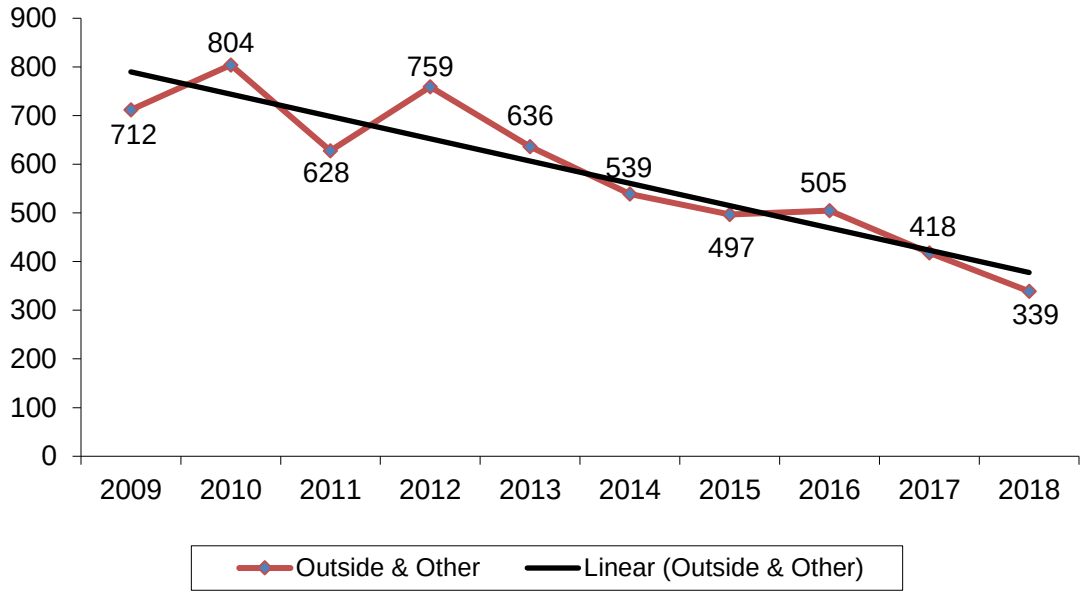

**Motor Vehicle Arsons Up**
Motor vehicle arsons increased in 2018. These 78 arsons are an increase of six, or 8%, from the 72 reported in 2017. This goes against the overall downward trend since 2009.

# Outside and Other Arson

**339 Arsons – 1 Civilian Death & 4 Civilian Injuries**
Three hundred and thirty-nine (339), or 5%, of the total outside and other fires were considered intentionally-set in 2018. These arsons caused one civilian death that was a homicide. The also caused four civilian injuries accounting for 1% of the total number of civilian injuries, 10% of civilian injuries in all outside and other fires; and one fire service injury. The estimated dollar loss for these arsons was $76,751. The average loss per outside and other arson was $226.

In 2018, 126 outside and other fires were still listed as 'Cause Under Investigation'. There were also 1,344 outside and other fires where the *Cause of Ignition* was listed as 'Undetermined'. This is a 25% decrease from the previous year when 1,795 outside and other fires were undetermined.

## Outside & Other Arsons by Year 2009 - 2018




**Outside & Other Arsons Down**

Outside and other arsons decreased by 79, or 19%, from the 418 reported in 2017. Brush arsons decreased by 21, or 12%; outside rubbish arsons dropped by four, or 5%; special outside arsons decreased by 24, or 28% from the 86 reported in 2018; cultivated vegetation or crop arsons decreased by seven, or 78%; and unclassified arsons decreased by 23, or 32%, from those reported in 2017.

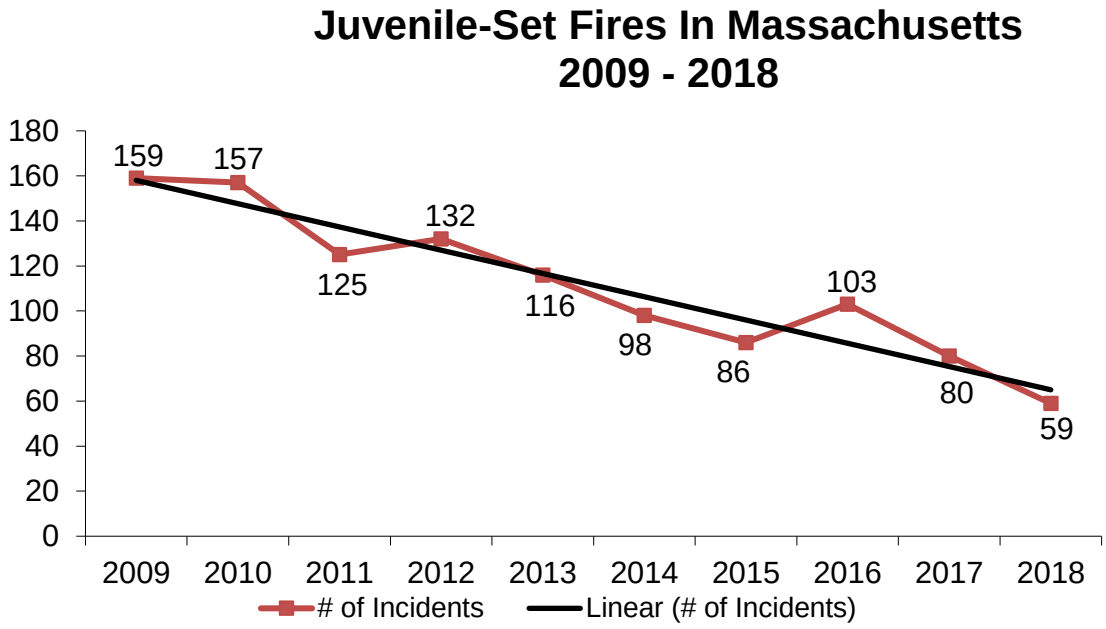
**Chelsea Had Largest Loss Arson in 2018**

There was one reported arson where the dollar loss was greater than $1 million in 2018. There were eight other arsons with a dollar loss between $100,000 and $999,999, totaling $2.3 million, or 43% of the total estimated dollar loss from arson.

- On June 22, 2018, at 2:26 p.m., the Chelsea Fire Department was called to an intentionally-set fire at the 12-unit apartment building. The fire started in a fourth floor interior stairway. No one was injured at this fire. Alarms were present and operated. The building did not have sprinklers. Damages from this fire were estimated to be $1.7 million.

# Juvenile-set Fires

**Children Playing With Fire Caused 59 Fires & 3 Civilian Death[16]**
In 2018, children playing[17] with matches, lighters and other heat sources caused 59 reported fires, three civilian deaths, two civilian injuries, three fire service injuries and an estimated dollar loss of $438,150. The average dollar loss per fire was $7,426. These fires were down 21, or 26%, from 80 incidents in 2017.




**27 Structure Fires & 32 Outside & Other Fires**
The 59 fires set by children and youth included: 27 structure fires, 11 brush, tree or grass fires, two outside rubbish fire, five special outside fires, and 14 fires that could not be classified further.

**Juvenile-set Fires Caused 3 Civilian Deaths**
These 59 fires caused three civilian deaths[18], two civilian injuries, three fire service injuries and $438,150 in estimated damages in 2018.

---

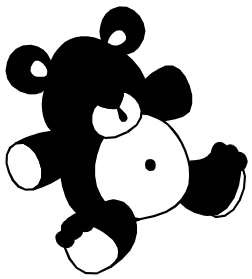
[16] We refined the coding parameters for juvenile-set fires. In the past we used Age was a Factor less than 18 but that allowed for an age of 0 to be counted. The new parameter for Age is between 1 and 17. With this new parameter we saw a significant drop in reported juvenile-set fires especially brush fires.
[17] 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.
[18] The 3 civilians were family members killed in the same fire in Springfield. See the Civilian Fire Death section for more.

**82% of Juvenile-set Building Fires Occur in Apartments or 1- & 2-Family Homes**
Eighty-two percent (82%) of the 27 building fires caused by juveniles occurred in multi-family homes or one- and two-family homes; 41% occurred in one or two-family homes and 41% occurred in apartments. Four percent (4%) each occurred in high schools, junior high schools or middle schools, rooming houses, residential board and care facilities; an outbuilding or shed, and a church, mosque or temple.

Nineteen percent (19%) of the juvenile-set building fires started in bedrooms; and another 19% in living rooms.

**51% of Fires Set by Juveniles Using Smoking Materials**
Fifty-one percent (51%), of juvenile-set fires were started by smoking materials[19]. Thirty-six percent (36%) of the fires were started using lighters, 11% were started with matches; and 4% with cigarettes. Candles, fireworks, heat from other open flame or smoking materials and unclassified hot or smoldering objects each caused 6%. This demonstrates a need for education to both parents and children on the dangers of matches and lighters, the use of illegal fireworks, and safe candle use.

| Heat Source | # of Incidents | % Known |
|---|---|---|
| Lighter | 19 | 36% |
| Match | 6 | 11% |
| Candle | 5 | 9% |
| Fireworks | 3 | 6% |
| Heat from other open flame or smoking materials | 3 | 6% |
| Hot ember or ash | 3 | 6% |
| Hot or smoldering object, other | 3 | 6% |
| Cigarette | 2 | 4% |
| Flame/torch used for lighting | 2 | 4% |
| Heat spark from friction | 2 | 4% |
| Other | 2 | 4% |
| Explosives, fireworks, other | 1 | 2% |
| Heat from operating equipment, other | 1 | 2% |
| Spark, ember, flame from operating equipment | 1 | 2% |



**Juvenile-set Fire in Springfield Is Largest Loss**
In 2018 there was one juvenile-set fire that caused over a $100,000 in estimated damages. This fire caused 23%, of the total dollar loss for all juvenile-set fires.

- On November 6, 2018, at 10:16 a.m., the Springfield Fire Department was called to a fire in a 26-unit apartment building caused by a youth playing with a lighter in multiple areas. One (1) firefighter was injured at this fire. Alarms were present and operated. The building was not sprinklered. Total damages were estimated to be $100,000.

[19] 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 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 intervention programs have found that only one in 10 juvenile-set fires is actually reported to the fire department.

# Cooking Fires

**Cooking Caused 11,465 Fires, 1 Civilian Death & 58 Civilian Injuries**
Unattended cooking, other unsafe cooking practices and defective cooking equipment caused 11,465 fires, one civilian death, 58 civilian injuries, 31 firefighter injuries and an estimated dollar loss of $6.9 million. The average dollar loss per fire was $599. Cooking fires accounted for 45% of the total 25,504 fires that occurred in 2018.

Ninety-nine percent (99%) of the fires caused by cooking occurred in structures. The 11,465 fires included: 11,315 structure fires, 66 special outside fires, two motor vehicle fires, one brush fire, three outside rubbish fires and 78 fires that could not be classified further.

**Confined Cooking Fires Account for 43% of Total Fires**
The majority of cooking fires, 10,916, were confined to a non-combustible container. These fires represent 43% of the total fires that occurred and is the largest single cause of fires in Massachusetts. Confined cooking fires decreased by 7% from the 11,786 reported in 2017.

**82% of Cooking Fires in Buildings Were Unintentional**
In 1,592, or 82%, of the 1,943 cooking fires in buildings where the *Cause of Ignition* was reported, it was reported as unintentional. The 9,522, or 83%, of all cooking fires were fires contained to non-combustible containers that did not require having a cause reported.[20]

| Cause of Ignition | # of Incidents | % of Total | % Completed |
|---|---|---|---|
| Confined fire, no fire module completed | 9,522 | 83% | |
| Other | 0 | 0% | 0% |
| Intentional | 16 | 0.1% | 1% |
| Unintentional | 1,592 | 14% | 82% |
| Failure of equipment or heat source | 83 | 1% | 4% |
| Act of Nature | 1 | 0.01% | 0.1% |
| Under investigation | 15 | 0.1% | 1% |
| Undetermined | 236 | 2% | 12% |
| Total | 11,465 | 100% | |
| Total completed | 1,943 | | |

**Unattended Cooking Starts 14% – Stand by Your Pan!**
Human error was responsible for the majority of cooking fires. Fourteen percent (14%) of cooking fires, where 'Factors Contributing to Ignition' was completed, were caused by unattended cooking. Eighty-three percent (83%) 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.

[20] 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 wishes.

| Factor Contributing to Ignition | # of Cooking Fires | % Known |
|---|---|---|
| Confined fire, no fire module completed | 9,522 | |
| Equipment unattended | 241 | 14% |
| Misuse of material or product, other | 105 | 6% |
| Failure to clean | 69 | 4% |
| Too close to combustibles | 58 | 3% |
| Abandoned materials | 44 | 2% |
| Accidentally turned on, not turned off | 36 | 2% |
| Operational deficiency, other | 30 | 2% |
| Other | 23 | 1% |
| Mechanical failure, malfunction, other | 21 | 1% |
| Equipment not operated properly | 20 | 1% |


**Cooking Was the Leading Cause of Injury in Fires in 2018**

Cooking was the leading cause of injury in all types of fires in 2018. This is not surprising considering that almost two-thirds, or 63%, of residential fires start in the kitchen. Of the 58 cooking fire injuries, 52% of victims were male and 48% were female. People aged 25 to 54 accounted for 54% of the people injured in cooking fires.

| Age | % of Known Injuries | % of Population | Difference |
|---|---|---|---|
| Under 5 | 5% | 6% | -1% |
| 5 to 9 | 2% | 7% | -5% |
| 10 to 14 | 2% | 7% | -5% |
| 15 to 24 | 12% | 13% | -1% |
| 25 to 34 | 24% | 15% | 9% |
| 35 to 44 | 14% | 17% | -3% |
| 45 to 54 | 16% | 14% | 2% |
| 55 to 64 | 14% | 9% | 5% |
| 65 to 74 | 7% | 7% | 0% |
| 75 to 84 | 5% | 5% | 0% |
| 85+ | 0% | 2% | -2% |

**84% of Victims in Room or Area of Fire Origin**

Of the 49 cooking fire injuries where location at ignition is known, 84% of the victims were injured in the room or area of fire origin.

| Location at Time of Incident | # of Cooking Fire Injuries | % Known |
|---|---|---|
| Not reported | 2 | |
| In area of origin and not involved | 16 | 33% |
| Not in area of origin and not involved | 5 | 10% |
| Not in area of origin but involved | 3 | 6% |
| In area of origin and involved | 25 | 51% |
| Undetermined | 8 | |
| Total | 59 | |
| Total Known | 49 | |


**2/3 of Cooking Injuries Occurred When Trying to Control Fire**

Of the 46 cooking fire injuries for which activity at time of injury was known, 67% of victims were attempting to control the fire; of the 31 victims injured while attempting to control the fire, 58% were male. This data has led to our "Put A Lid On It" cooking safety campaign.

| Activity When Injured | # of Cooking Fire Injuries | % Known |
|---|---|---|
| Not reported | 2 | |
| Other | 7 | 15% |
| Escaping | 5 | 11% |
| Rescue Attempt | 1 | 2% |
| Fire Control | 31 | 67% |
| Return to vicinity of fire before control | 0 | 0% |
| Return to vicinity of fire after control | 0 | 0% |
| Sleeping | 0 | 0% |
| Unable to act | 2 | 4% |
| Irrational act | 0 | 0% |
| Undetermined | 10 | |
| Total | 58 | |
| Total Known | 46 | |

**78% 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 54 cooking fire injuries where the nature of injury was known, 20% suffered only from smoke inhalation; 11% suffered from burns and smoke inhalation; and 6% suffered from breathing difficulty or shortness of breath.

| Primary Apparent Symptom | # of Cooking Fire Injuries | % Known |
|---|---|---|
| Not reported | 13 | |
| Smoke Inhalation | 11 | 20% |
| Breathing difficulty/shortness of breath | 3 | 6% |
| Burns & smoke inhalation | 6 | 11% |
| Burns only; thermal | 25 | 46% |
| Scald | 6 | 11% |
| Contusion/bruise | 1 | 2% |
| Vomiting | 1 | 2% |
| Shock | 1 | 2% |
| None | 1 | 2% |
| Total | 58 | |
| Total Known | 54 | |

**1 Civilian Fire Death in 2018**

While cooking is the leading cause of residential building fires, it usually isn't a leading cause of civilian fire deaths. There was one civilian fire death attributed to cooking fires in 2018, accounting for 3% of residential fire deaths and 2 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.

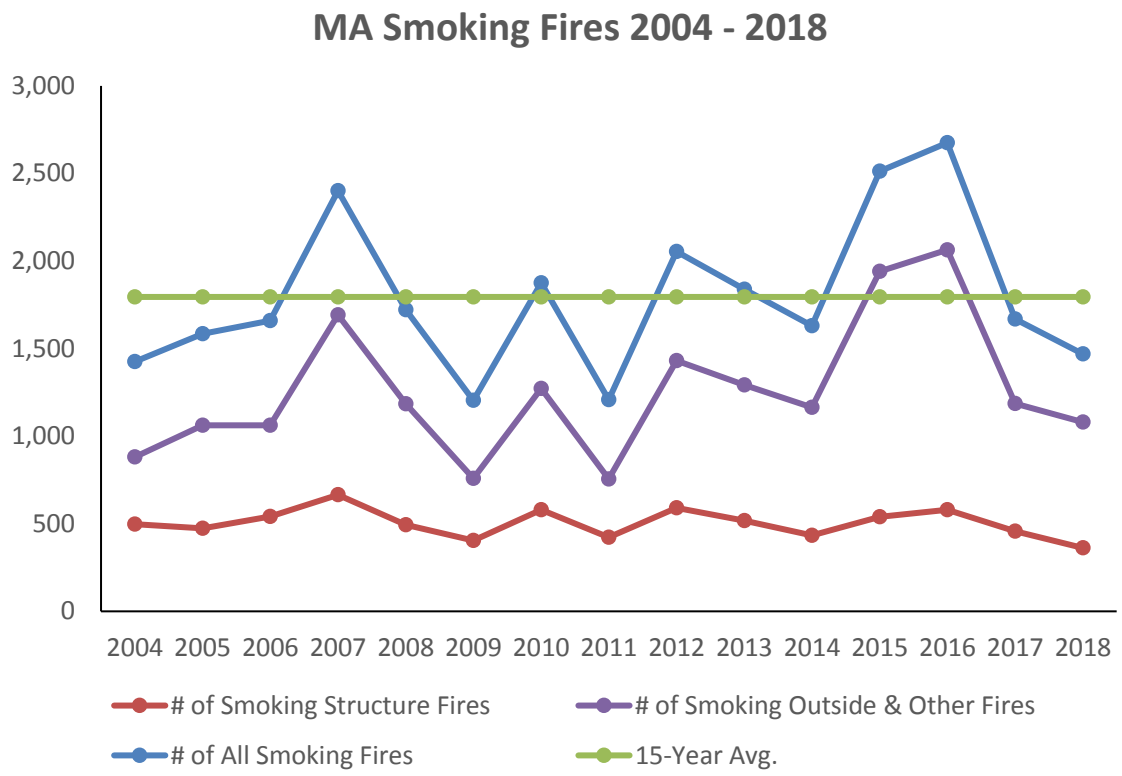
# Fires Caused by Smoking

**Smoking Caused 6% of Fires and 29% of Deaths**
During 2018, 1,460, or 6%, of the 25,504 reported fire incidents were caused by the improper use or disposal of smoking materials. These 1,460 fires caused 13, or 29%, of the 45 civilian deaths and 13, or 37%, of the 35 structure fire deaths; 33 civilian injuries, 13 fire service injuries, and an estimated dollar loss of $14.4 million. The average dollar loss per fire was $9,882. The number of smoking fires decreased by 209, or 13%, from 1,669 in 2017.

**357 Structure Fires – Down 22% From 2017**
The 1,460 fires caused by smoking included 357 structure fires, down 100 from 457, or 22%, in 2017.

| Incident Type | # of Smoking Fires | Fire Service Injuries | Civilian Injuries | Fire Service Deaths | Civilian Deaths | Dollar Loss |
|---|---|---|---|---|---|---|
| Fire, other | 65 | 0 | 5 | 0 | 0 | $ 40,750 |
| Structure fires | 356 | 13 | 24 | 0 | 13 | $ 14,282,827 |
| Mobile property used as a structure fire | 1 | 0 | 1 | 0 | 0 | $ 400 |
| MV fires | 25 | 0 | 2 | 0 | 0 | $ 66,785 |
| Brush fires | 826 | 0 | 0 | 0 | 0 | $ 12,267 |
| Outside rubbish fires | 79 | 0 | 0 | 0 | 0 | $ 1,100 |
| Special outside fires | 101 | 0 | 1 | 0 | 0 | $ 23,145 |
| Cultivated vegetation or crop fires | 7 | 0 | 0 | 0 | 0 | $ 0 |
| Total | 1,460 | 13 | 33 | 0 | 13 | $ 14,427,274 |

Over the last 15-years, smoking fires have been showing an upward trend. However, 2018, like 2017, goes against that trend. The majority of these were outside fires. The lowest number of recorded smoking fires since 1986 was 1,204 in 2009 and is far below the 15-year average of 1,795 smoking fires. In 2017, there was a sudden downward spike in the number of smoking-related fires, predominantly outdoor brush fires caused by smoking materials and 2018 continued this trend. In years with upward spikes, 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 in 2007, 2012, 2015 and 2016.



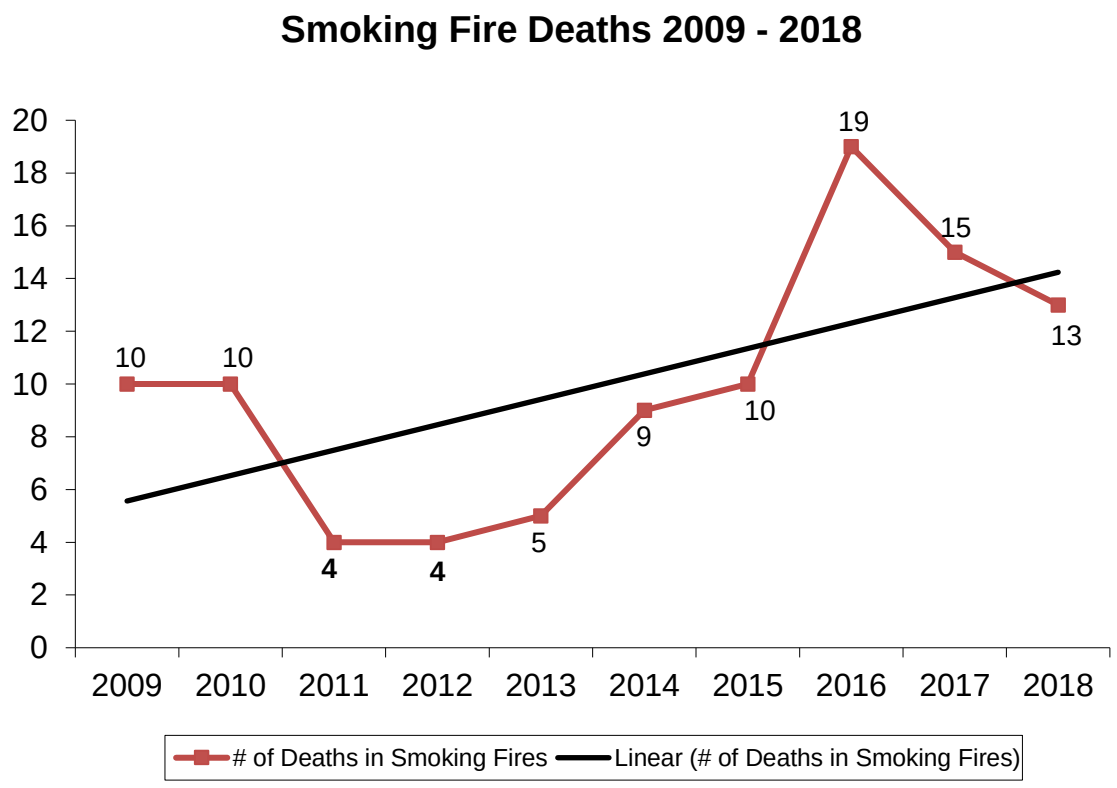

**87% of All Smoking Building Fires Occurred in Residences**
Three hundred and two (302), or 87% of the 349 smoking-related building fires occurred in residential occupancies. The occupancies with the next highest percentages of smoking-related building fires in Massachusetts in 2018 were mercantile and business properties at 4%.

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

| Property Use | # of Smoking Fires | % of Smoking Fires | Fire Service Injuries | Civilian Injuries | Fire Service Deaths | Civilian Deaths | Dollar Loss |
|---|---|---|---|---|---|---|---|
| Assembly | 13 | 4% | 0 | 0 | 0 | 0 | $ 47,100 |
| Educational | 0 | 0% | 0 | 0 | 0 | 0 | $ 0 |
| Institutional | 5 | 1% | 0 | 0 | 0 | 0 | $ 50,300 |
| Residential | 302 | 87% | 12 | 25 | 0 | 13 | $ 14,022,922 |
| Mercantile, business | 16 | 5% | 0 | 0 | 0 | 0 | $ 37,745 |
| Basic Industry | 0 | 0% | 0 | 0 | 0 | 0 | $ 0 |
| Manufacturing, processing | 2 | 1% | 1 | 0 | 0 | 0 | $ 75,000 |
| Storage properties | 7 | 2% | 0 | 0 | 0 | 0 | $ 36,510 |
| Special properties | 3 | 1% | 0 | 0 | 0 | 0 | $ 200 |
| Total Known | 444 | 100% | 13 | 25 | 0 | 13 | $ 14,269,777 |

**Smoking Leading Cause of Fire Deaths - Elders at Risk**
The 357 smoking-related structure fires caused all 13 of the smoking-related fire deaths, 25 civilian injuries, 13 fire service injuries, an estimated dollar loss of $14.3 million and an average dollar loss of $40,009. Smoking fires accounted for 33% of the fatal structure fires and 37% of structure fire deaths in 2018. The unsafe and improper use of smoking materials caused 33% of residential structure fire deaths and 38% of fatal residential structure fires. Nine (9), or 47%, of the 19 home fire deaths to people over 65 were caused by smoking.

**2018 Smoking Fire Deaths**
In 2018, 13 people died in smoking-related fires of all types. These 13 deaths are above the 10-year average of 10 smoking-related fire deaths per year since 2007. After a high-water mark of 19 deaths in 2007 (and again in 2016), smoking-related fire deaths dropped significantly. In 2011 and 2012 there were four smoking-related fire deaths, the lowest number on record. However, smoking fire deaths are once again on an upward trend in Massachusetts during the past 10 years. It is possible since more smoking fire are starting on building exteriors, that fires are getting a foothold on the building before smoke alarms inside can alert the occupants.



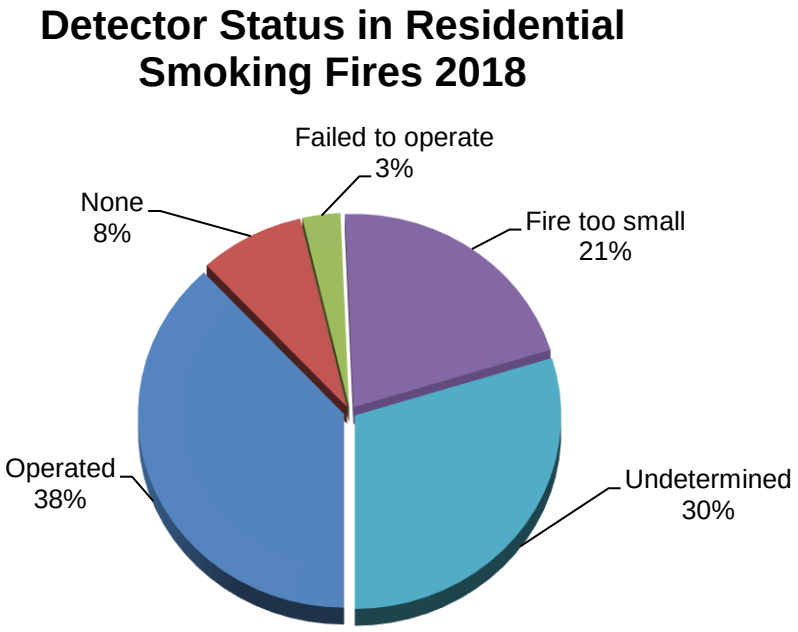

**Working Alarms in 46% Fatal Smoking Fires**
Six (6) of the 13 smoking fatal fires occurred in a structure where smoke alarms were present and operated. One (1) occurred in a fire where the alarm failed to operate; and

two occurred where there were no alarms. In one fire the alarm was present but the fire was too small to activate the alarm; and it was undetermined in three fires if there were any alarms. Seven (7), or 54%, of these victims were intimately involved with the ignition; and two other victims, while not in the area of origin when the fire began, were involved in starting it. The smoke alarms helped prevent these fires from claiming any additional lives.

For a listing of all the smoking-related fire deaths in 2018, please refer to the *2018 Massachusetts Fire Deaths* section of this report.

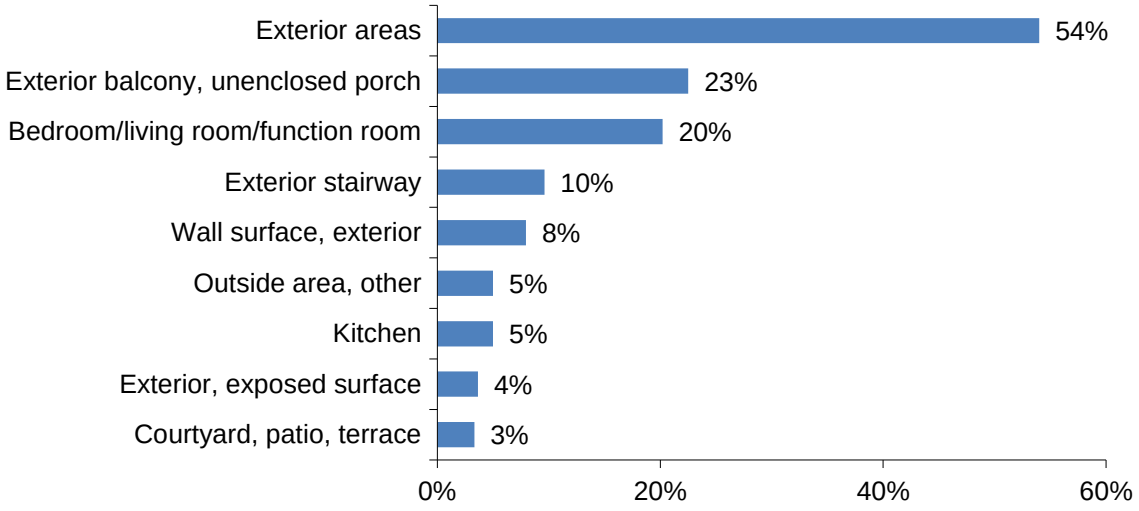
**Smoking on Oxygen**
There were two fire deaths in two fires in 2018 that involved the use of oxygen while smoking.

**38% of Building Smoking Fires had Operating Alarms**
Of the 349 smoking-related building fires, 302, or 87%, occurred in residences. Smoke alarms operated in 38% of the smoking-related residential structure fires.




**54% of Smoking Fires in the Home Start in the Exterior**
Continuing the trend, 163, or 54% of all residential smoking fires started outside the home, not inside. Historically the bedroom and living room were where most smoking fires start. As more people smoke outside the home in areas like balconies, exterior stairways or enclosed porches, we see more smoking fires beginning in these locations.

## 2018 Residential Smoking Fires Area of Origin




**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 over 20 years of proposed legislation. On January 1, 2013, 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 was exterior sidewall coverings accounting for 11% of residential smoking fires. The second leading cause was rubbish, trash or waste accounting for 9% of these smoking fires. Unclassified organic materials and light vegetation also accounted for 9% of these fires. Fire standard compliant cigarettes cannot prevent every cigarette from causing a fire, and not every smoking fire is caused by a cigarette.

| Item 1st Ignited | # of Incidents | % |
|---|---|---|
| Exterior sidewall covering | 33 | 11% |
| Undetermined | 33 | 11% |
| Rubbish, trash, waste | 26 | 9% |
| Structural member, framing | 19 | 6% |
| Structural component, finish, other | 18 | 6% |
| Exterior trim, appurtenances | 16 | 5% |
| Furniture, utensils, other | 16 | 5% |
| Other | 16 | 5% |
| Box, carton, bag | 15 | 5% |
| Organic materials, other | 15 | 5% |
| Upholstered sofa, chair | 14 | 5% |
| Light vegetation | 13 | 4% |
| Bedding | 10 | 3% |
| Magazine, newspaper | 7 | 2% |
| Mattress, pillow | 6 | 2% |
| Cooking materials | 5 | 2% |

**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 2018, 9% 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 Alarm at Home**
While everyone needs at least one working smoke alarm 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 an alarm 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 alarm's warning may enable a smoker to live long enough to quit.

**Never Smoke Where Oxygen Is in Use**
Smoking should never 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."[21]

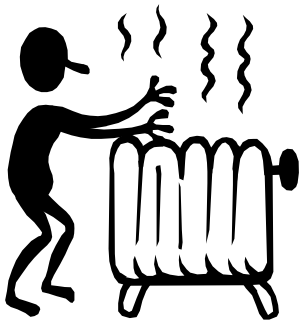
Oxygen can saturate clothing, rugs, upholstery, and facial hair thus increasing the fire danger even when the home oxygen system is "turned off".

**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 important to note that FSC cigarettes were not designed to prevent igniting mulch-type materials.

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

# Heating Equipment Fires



**1,477 Fires, 1 Civilian Death& 9 Civilian Injuries**
Massachusetts fire departments reported that some form of heating equipment was involved in 1,477, or 9%, of the 16,116 building fires in 2018. These heating equipment fires caused one civilian death, nine civilian injuries, 13 fire service injuries, and an estimated dollar loss of $10.1 million. The average loss per fire was $6,853. This is a 3% increase from the 1,432 fires reported in 2017.

**85% of All Heating Fires Were Confined Fires**
In 2018, 85% of heating fires were confined to the container of origin. Seven hundred and fifty-two (752), or 51%, of all heating related building fires in Massachusetts were coded as 'fuel burner/boiler malfunction, fire contained'. Five hundred and three (503), or 34%, were determined to be chimney or flue fires, confined to the chimney or flue.

The number of contained heating fires grew in 2018. Confined heating equipment fires increased by nine incidents, or 1%, from the 1,246 reported in 2017.

**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.

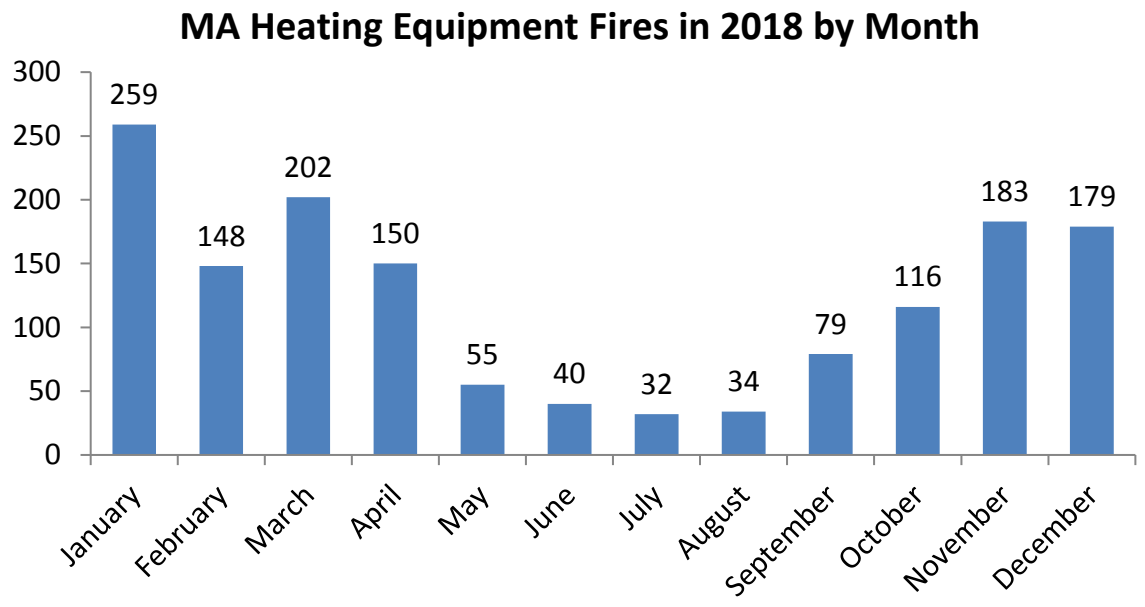
The following table shows the number of fires caused by each of the leading types of heating equipment, the percentage of heating equipment fires for each type of equipment, the number of civilian and fire service deaths and injuries, and the estimated dollar loss for each type of heating equipment.

## HEATING EQUIPMENT FIRES

| Heating Equipment Involved | # of Heating Fires | % of Heating Fires | Fire Service Injuries | Civilian Injuries | Fire Service Deaths | Civilian Deaths | Dollar Loss |
|---|---|---|---|---|---|---|---|
| Central heating units | 800 | 54% | 1 | 4 | 0 | 0 | $ 2,918,072 |
| *Confined* | *752* | *51%* | *1* | *3* | *0* | *0* | *$ 312,272* |
| *Furnace, central heating unit* | *44* | *3%* | *0* | *1* | *0* | *0* | *$ 2,455,800* |
| *Boiler (power, process, heating)* | *4* | *0.3%* | *0* | *0* | *0* | *0* | *$ 150,000* |
| Chimney, flue | 525 | 36% | 4 | 0 | 0 | 0 | $ 885,144 |
| *Confined* | *503* | *34%* | *0* | *0* | *0* | *0* | *$ 242,644* |
| *Fireplace, chimney, other* | *8* | *0.5%* | *3* | *0* | *0* | *0* | *$ 323,000* |
| *Chimney connector, vent connection* | *2* | *0.1%* | *0* | *0* | *0* | *0* | *$ 0* |
| *Chimney, brick, stone, masonry* | *6* | *0%* | *0* | *0* | *0* | *0* | *$ 78,500* |
| *Chimney, metal, incl. stovepipe* | *6* | *0%* | *1* | *0* | *0* | *0* | *$ 241,000* |
| Space heaters | 19 | 1% | 0 | 0 | 0 | 0 | $ 902,700 |
| *Portable space heaters* | *13* | *1%* | *0* | *0* | *0* | *0* | *$ 822,700* |
| Fireplace | 17 | 1% | 1 | 0 | 0 | 0 | $ 1,189,750 |
| *Fireplace, masonry* | *4* | *0%* | *0* | *0* | *0* | *0* | *$ 85,500* |
| *Fireplace insert/stove* | *1* | *0.1%* | *0* | *0* | *0* | *0* | *$ 12,000* |
| *Fireplace factory built* | *12* | *1%* | *1* | *0* | *0* | *0* | *$ 1,092,250* |
| Water heater | 9 | 1% | 0 | 0 | 0 | 0 | $ 525,750 |
| Heating, vent. & air cond,. other | 34 | 2% | 4 | 1 | 0 | 0 | $ 1,332,300 |
| All other reported equipment | 11 | 1% | 0 | 0 | 0 | 0 | $ 604,100 |
| **Total** | **1,477** | **100%** | **13** | **9** | **0** | **1** | **$ 10,122,416** |

**Most Heating Fires Occur During Colder Months**

Sixty-four percent (64%) of all heating equipment fires occurred during the months of January through April, and December.



**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 1.11.

**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.

**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.

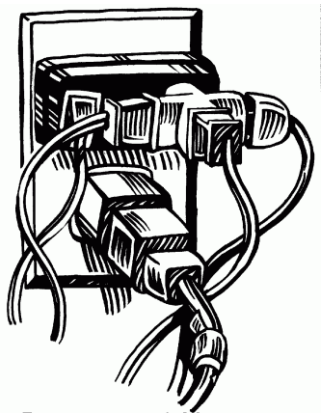
- Keep the temperature within the manufacturer's suggested range. Wood and coal stoves should be operated at moderate heat. If the fire is too low, creosote may accumulate in the chimney and eventually cause a fire. If the fire is too hot, nearby combustibles or creosote in the chimney could ignite.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

- When buying a heater, look for one that has been tested and labeled by a nationally recognized testing company.
- 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 and plug it directly into a wall outlet.
- 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 three feet away from any combustibles including walls and wall coverings.

# Electrical Fires



**749 Electrical Fires Caused 10 Civilian Deaths**
Local fire departments reported that there were 749 structure fires caused by electrical problems in Massachusetts in 2018. These fires caused five civilian deaths, 22 civilian injuries, 101 fire service injuries and an estimated dollar loss of $45.2 million, accounting for 20% of the total dollar loss to fire in 2018. The average loss per fire was $60,345.

**Electrical Fires Were the 2nd Leading Cause of Fire Deaths**
Electrical fires were the second leading cause of structure fire deaths in 2018. Four (4) fatal electrical fires, or 12%, of fatal structure fires caused five, or 13%, of structure fire deaths in 2018. Electrical fires have been either the leading or second leading cause of structure fire deaths in the past 5 years.

The criteria to qualify for an electrical equipment fire includes all fires caused by electrical problems or malfunctions. Specifically, it needs to be coded as *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 16% of Electrical Fires[22]**
One hundred and twenty-two (122), or 16%, of electrical fires were caused by an unclassified electrical failure or malfunction.

[22] *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%.

| Factor Contributing to Ignition | # of Electrical Fires | % of Electrical Fires |
|---|---|---|
| Electrical failure, malfunction, other | 122 | 16% |
| Unspecified short-circuit arc | 41 | 5% |
| Short circuit arc from defective, worn insulation | 17 | 2% |
| Short circuit arc from mechanical damage | 15 | 2% |
| Too close to combustibles | 12 | 2% |
| Equipment overloaded | 12 | 2% |
| Arc from faulty contact, broken conductor | 11 | 1% |
| Arc, spark from operating equipment | 11 | 1% |
| Mechanical failure, malfunction, other | 9 | 1% |
| Worn out | 6 | 1% |
| Water-caused short circuit arc | 6 | 1% |

| Equipment | # of Incidents | Fire Service Injuries | Civilian Injuries | Fire Service Deaths | Civilian Deaths | Dollar Loss |
|---|---|---|---|---|---|---|
| Electrical service, wiring, meter box and circuit breaker | 182 | 56 | 4 | 0 | 0 | $ 11,286,560 |
| Kitchen & cooking equipment | 63 | 12 | 0 | 0 | 0 | $ 1,485,290 |
| Ventilation and air conditioning | 55 | 3 | 2 | 0 | 2 | $ 1,816,950 |
| Lamp, lighting | 50 | 3 | 2 | 0 | 0 | $ 1,778,140 |
| Transformer, generator, battery, charger | 39 | 1 | 5 | 0 | 0 | $ 1,759,725 |
| Heating equipment | 28 | 0 | 1 | 0 | 0 | $ 851,100 |
| Household appliances (non-cooking) | 26 | 0 | 1 | 0 | 0 | $ 456,560 |
| Cord, plug | 25 | 2 | 2 | 0 | 2 | $ 1,344,020 |
| Electrical distribution, lighting & power transfer, other | 10 | 0 | 1 | 0 | 0 | $ 2,561,000 |
| Electronic & other electrical equipment | 4 | 0 | 1 | 0 | 0 | $ 63,050 |
| Decorative lighting, signs | 2 | 0 | 0 | 0 | 0 | $ 2,000 |
| Shop tools & industrial equipment | 1 | 0 | 1 | 0 | 0 | $ 1,000,000 |
| Commercial & medical equipment | 1 | 0 | 0 | 0 | 0 | $ 0 |
| Garden tools & agricultural equipment | 0 | 0 | 0 | 0 | 0 | $ 0 |
| Total Known Equipment | 486 | 77 | 20 | 0 | 4 | $ 24,404,395 |
| Not reported (Null) | 206 | 14 | 2 | 0 | 1 | $ 12,733,172 |
| Unclassified (Other) | 2 | 0 | 0 | 0 | 0 | $ 65,000 |
| None | 44 | 10 | 0 | 0 | 0 | $ 6,579,025 |
| Undetermined | 11 | 0 | 0 | 0 | 0 | $ 1,416,500 |
| Total Unspecified | 263 | 24 | 2 | 0 | 1 | $ 20,793,697 |
| Total | 749 | 101 | 22 | 0 | 5 | $ 45,198,092 |

**Over 3/4 of Electrical Fires Occurred in Residential Occupancies**
Over three-quarters of electrical fires occurred in residential occupancies. Of the 703 electrical fires, 583, or 78%, occurred in residential occupancies.

| Occupancy | # of Electrical Fires | % of Known Electrical Fires |
|---|---|---|
| Residential | 583 | 78% |
| Mercantile, business | 65 | 9% |
| Storage Properties | 31 | 4% |
| Assembly | 27 | 4% |
| Basic Industry | 12 | 2% |
| Educational | 10 | 1% |
| Institutional | 10 | 1% |
| Manufacturing, processing | 5 | 1% |
| Special Properties | 5 | 1% |
| Other | 1 | 0.1% |
| **Total Known** | **749** | **100%** |

**10% of Electrical Fires Began in the Kitchen**
Seventy-seven (77), or 10%, of electrical fires began in the kitchen. The following table shows the leading Areas of Origin of the electrical fires in Massachusetts in 2018.

| Area of Origin | # of Electrical Fires | % of Electrical Fires |
|---|---|---|
| Kitchen | 77 | 10% |
| Bedroom | 58 | 8% |
| Bathroom | 33 | 4% |
| Living room | 27 | 4% |
| Wall assembly, concealed wall space | 26 | 3% |
| Attic | 23 | 3% |
| Ceiling & floor assembly | 22 | 3% |
| Wall surface, exterior | 16 | 2% |
| Heating room or area | 15 | 2% |
| Laundry room | 13 | 2% |
| Vehicle storage area, carport | 13 | 2% |
| Substructure area, crawl space | 13 | 2% |

**Electrical Wiring Was the Item First Ignited in Almost 1/4 of Electrical Fires**
Electrical wiring or cable insulation was the item first ignited in 175, or 23%, of electrical fires. This includes fixed wiring, wiring inside electronic items, extension cords and appliance cords. The following table shows the leading Item 1st Ignited of the electrical fires in Massachusetts in 2018.

| Item 1st Ignited | # of Electrical Fires | % of Electrical Fires |
|---|---|---|
| Electrical wire, cable insulation | 175 | 23% |
| Undetermined | 59 | 8% |
| Structural member, framing | 35 | 5% |
| Appliance housing or casing | 28 | 4% |
| Other | 22 | 3% |
| Interior wall covering | 14 | 2% |
| Structural component, finish, other | 13 | 2% |
| Thermal, acoustical insulation w/in wall, partition, floor/ceiling | 11 | 1% |
| Cooking materials | 10 | 1% |
| Multiple items | 10 | 1% |

**Large Loss Electrical Fires**

There were nine large loss ($1 million+) electrical fires in 2018. These nine fires caused an estimated $14.5 million in damages, accounting for 61% of the total dollar loss from electrical structure fires in 2018. There were 99 fires with estimated damages between $100,000 and $999,999.

**Adams Has Largest Loss Electrical Fire**

- On September 23, 2018, at 2:17 a.m., the Adams Fire Department was called to an electrical fire at the Broadlawn Farm at 46 Walling Rd. The fire was caused by an unspecified short-circuit in the barn. There were no injuries associated with this fire. Alarms were not present and the barn did not have sprinklers. Damages were estimated to be $2.6 million.

**Lynn Has Electrical Fire with Most Fire Service Injuries**

- On June 21, 2018, at 5:03 p.m., the Lynn Fire Department was called to an electrical fire in a three-unit apartment building. The fire was caused by arcing in a first floor bathroom. Thirty (30) firefighters were injured at this fire. Most of them were for exposure to asbestos. Alarms were present and alerted the occupants. Sprinklers were not present. Damages from this fire were estimated at $50,000.

**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 have 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.

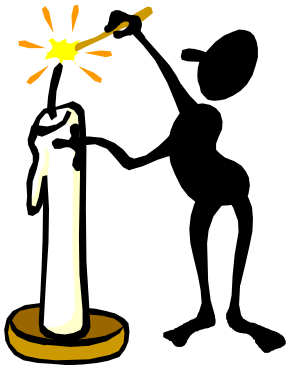
Fuses and circuit breakers are safety devices. They blow or trip when the amount of current cannot safely travel through the wires, which is why frequent blowing or tripping is a warning sign. *Trying to bypass the fuse or circuit breaker protection is an invitation to danger.*

**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

**97 Candle Fires Caused 5 Civilian Injuries**
In 2018, candles caused 97 fires of all types. These fires caused nine civilian injuries, five fire service injuries and an estimated dollar loss of $3.4 million in damages. There was a 5% increase from the 92 fires of all types started by candles in Massachusetts in 2017.



**81% of Candle Fires are Structure Fires**
Of the 97 candles fires in 2018, 79, or 81%, were classified as structure fires. None were reported as motor vehicle fires. Eighteen (18), or 19%, were outside or other fires; three, or 3%, were brush fires, one, or 1%, was an outside rubbish fire, one, or 1%, was a special outside fire; and 13, or 13%, were unclassified fires.

**Candle Fires Happen Most During the Holidays**
Between 2009 and 2018, the days of the year on which most candle fires occurred were:

1. December 24 (Christmas Eve) = 13 candle fires
2. December 25 (Christmas) = 13 candle fires.
3. December 31 (New Year's Eve) = 10 candle fires.
4. October 31 (Halloween), February 9, November 3 & December 12 = 9 candle fires.

**Boston Has Largest Loss Candle Fire**

- On February 6, 2018, at 10:02 a.m., the Boston Fire Department was called to a candle fire in a licensed in residence day care. The candle ignited a sofa in the living

room. No one was injured at this fire. Alarms were present and operated; and the building was not sprinklered. Damages from the blaze were estimated to be $1 Million. The fire spread to a nearby car and caused another $4,000 in estimated damages.

**95% of Candle Fires Occurred in Homes**

Of the 79 candle fires that occurred in buildings, all but four, or 95% were residential fires. These 75 residential fires caused eight civilian injuries, five fire service injuries and an estimated dollar loss of $2.4 million. Three (3) candle fires, or 4%, occurred in public assembly properties and one, or 1%, happened in an educational facilities.

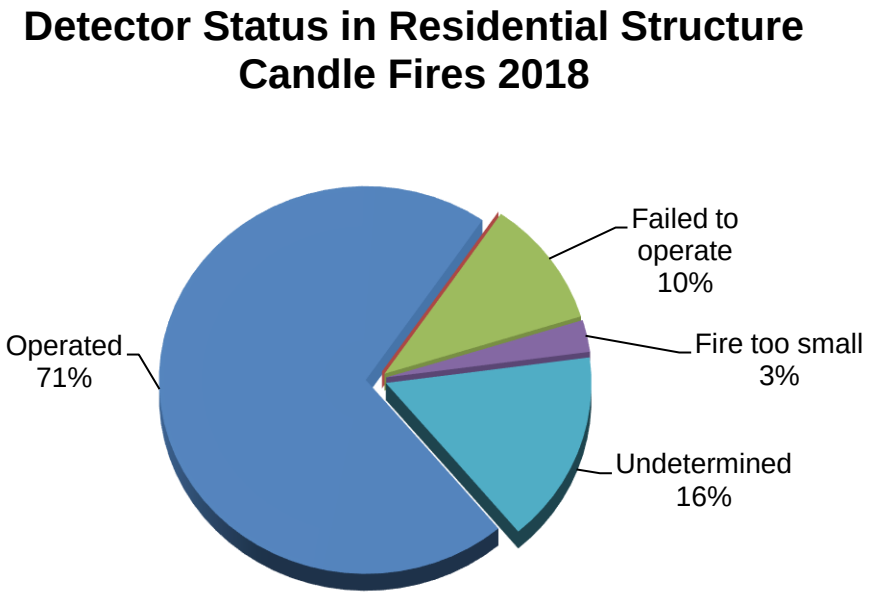
**Over 1/3 of Candle Fires in Homes Occurred in the Bedroom**

Of the 75 candle fires in residential structures, 35% occurred in the bedroom and 20% occurred in the living room. The following table is a list of the leading *Area of Origin* for residential candle fires.

| Leading Area of Origin | # of Residential Candle Fires | % of Residential Candle Fires |
|---|---|---|
| Bedroom | 26 | 35% |
| Living room | 15 | 20% |
| Bathroom | 9 | 12% |
| Kitchen | 6 | 8% |
| Bar area, cafeteria | 4 | 5% |
| Function room, other | 3 | 4% |

**Smoke Alarms Operated in 71% of Candle Fires in Homes**

Of the 75 candle fires in homes, smoke alarms operated in 71% of these fires.



If you are going to be burning candles with an open flame in your home make sure that your smoke alarms are working properly. Consider switching to flameless candles, especially if children or pets are around.

**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.

# Fireworks Incidents

**83 Incidents Involving Fireworks Caused $596,900 in Damages**
There were 83 fire and explosion incidents reported that involved fireworks in 2018. This is an 11% increase of fire and explosion incidents from the 75 reported in 2017. Incidents involving fireworks caused two civilian injuries, 35 fire service injuries and an estimated $596,900 in property damages. The average dollar loss per fireworks incident was $19,897.

Thirty-seven percent (37%) of the fireworks incidents were brush fires.

A fireworks explosion without fire is coded as an Incident Type 243 – Fireworks explosion (no fires). In 2018, 53 such incidents were reported.

**43% of Fireworks Fires Occurred the Week of July 4th**
Thirteen (13), or 43%, of the 30 fireworks-caused fires in 2018 took place during the week of the 4th of July. Eight (8) occurred on July 4th.

**Largest Loss Fireworks Fire –Lynn House Fire**

- On June 25, 2018, the Lynn Fire Department was called to fire in a six-unit apartment building. The fire was started by individuals setting off fireworks in the street and one ricocheting to the second floor porch and igniting combustibles. The fire extended up and out to the rest of the second and third floors. Thirty-four (34) firefighters were injured at this fire. Alarms were present but it was undetermined if they operated. The building did not have sprinklers. Damages from this fire were estimated to be 484,000.

**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 — 2017 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 two fireworks-related burn injuries reported to M-BIRS in 2018. Since we started collecting burn injury reports in M-BIRS in 1984, the average number of fireworks-related burns per year is nine. The highest number of reported fireworks-related burns occurred in 1989, with 45 reported burn injuries.

# Grill Fires

**81 Incidents Involving Grills in 2019 Caused 5 Civilian Injuries**
In 2019, there were 81 fires and explosion incidents reported to the Massachusetts Fire Incident Reporting System (MFIRS) involving open fired grills. These incidents caused five civilian injuries, one fire service injuries and an estimated dollar loss of $1.4 million. This is a 1% decrease from the 82 grill fires in 2018.

Eighty-four percent (84%) of these incidents occurred in the months of May to September when people are most likely to use their outdoor grills.

**Grill Fires**
Of the 81 grill incidents, 71, or 88%, of the grills were gas grills. Solid fuels such as charcoal briquettes powered eight grills, or 10% of these fires. One (1), or 2%, was powered by a liquid fuel; and another power source was not classified. The 71 gas grill incidents caused all five civilian injuries, the single fire service injury and $1.3 million, or 94% of the total damages.

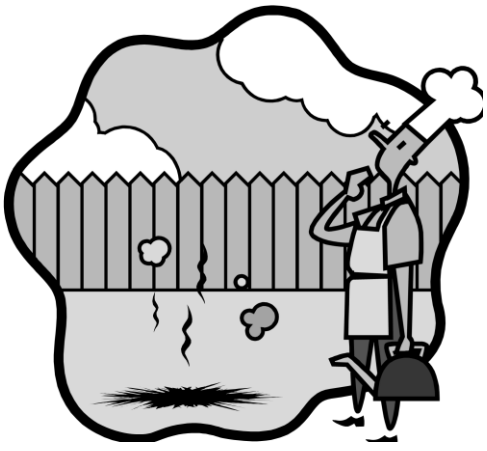
**Canton Had Largest Loss Grill Fire**
Canton had the largest loss grill fire at $1.15 million, or 82% of the total damages caused by grill fires in 2019.

- On September 11, 2019, at 11:21 p.m., the Canton Fire Department was called to a fire in a single-family home. The fire was started by a gas grill on the rear deck of the house. No one was injured at this fire. Alarms were present and alerted the occupants. The building was not sprinklered. Damages from the blaze were estimated to be $1.15 million.

**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 — 2019 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. Eleven (11) civilians were reported to M-BIRS in 2019 with burn injuries from a grill. The youngest person with a burn injury from a grill was a four-year old girl and the oldest was a 58-year old man. Five (5) of these injuries occurred in July and August.

**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. 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 with external tanks 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.

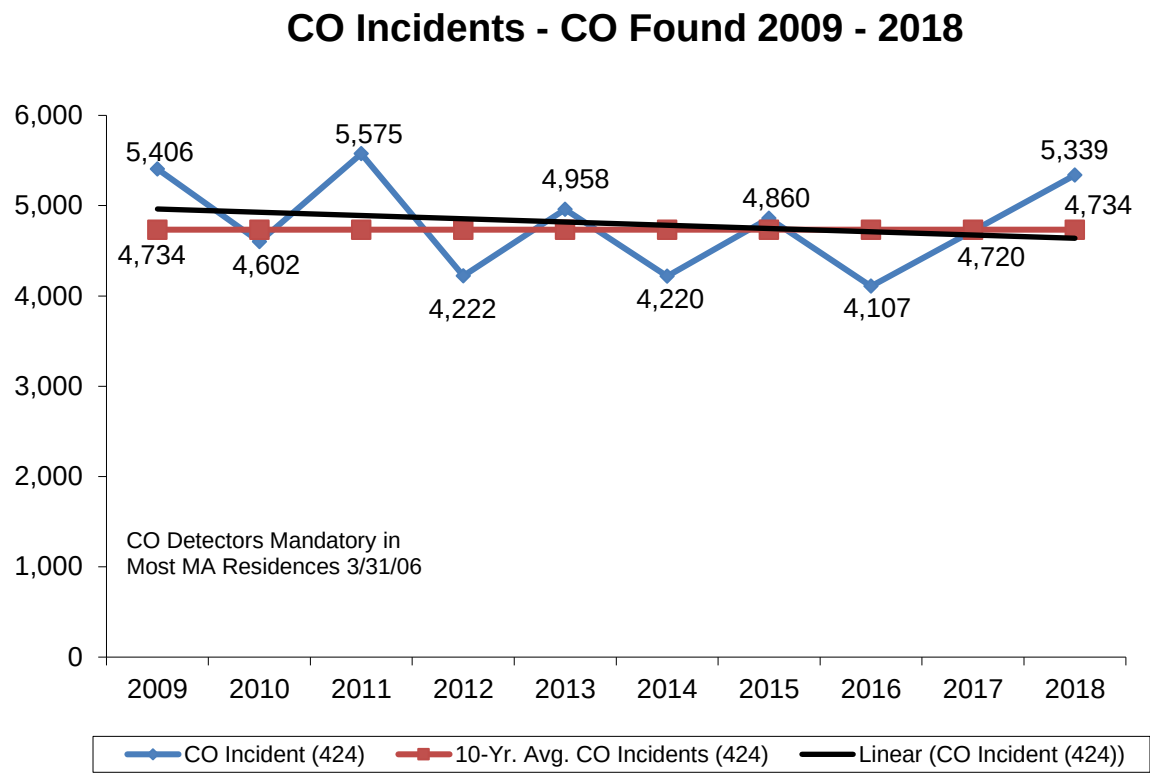
# Carbon Monoxide Incidents

In 2018, 315 fire departments voluntarily reported 17,316 carbon monoxide (CO) incidents: hazards[23], carbon monoxide alarm activation due to malfunction[24], and carbon monoxide alarm activation – no CO[25]. A CO hazard is an identifiable carbon monoxide emergency whether or not a CO alarm activated, the presence of CO was confirmed, and some corrective action was indicated. Fire departments responded to 5,339 confirmed CO hazard incidents.

**9% Increase from 2017**

In 2018, the number of reported carbon monoxide incidents increased by 1,451 calls, or 9%, from the 15,865 calls reported in 2017. The highest number of CO calls of all types was 19,770 that was reported in 2013. This confirms the need to have these life-saving devices in people's homes as a way to avert potential lethal calls. 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 since 2016. Overall, since 2009, CO calls have been on a downward trend. Some years there are spikes because of significant weather events that happen like the *Smowmageddon* snow storms in February of 2015.

[23] Carbon monoxide hazards = Incident Type – 424.
[24] Carbon monoxide detector activation due to a malfunction = Incident Type – 736.
[25] Carbon monoxide detector activation, no CO = Incident Type – 746.




**92% of All CO Incidents Occur in Residences**

Ninety-two percent (92%) of all carbon monoxide calls occurred in residential occupancies. Businesses, public assembly and institutional facilities were the next leading property use categories for CO calls, each accounting for 2% of the incidents.

| Property Use | # of CO Calls | % of CO Calls |
|---|---|---|
| Assembly | 396 | 2% |
| Educational | 153 | 1% |
| Institutional | 290 | 2% |
| Residential | 15,851 | 92% |
| Mercantile & business | 400 | 2% |
| Basic Industry | 16 | 0.1% |
| Manufacturing & processing | 32 | 0.2% |
| Storage | 79 | 0.5% |
| Special Properties | 66 | 0.4% |
| Unclassified | 33 | 0.2% |
| Total | 17,316 | 100% |

**42% of All CO Calls Occur During the Winter**

Forty-two percent (42%) of all the CO calls that occurred in 2018 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 alarms. 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 three of the latest major disasters to hit Massachusetts, the 2011 Halloween snowstorm, the 2013 February blizzard and the 2015 "Snowmeggadon" all CO calls increased by 345%, 621% and 123% respectively from the previous year. Specifically, CO Alarm Activation and Malfunction calls increased by 279% in the days following the Halloween snowstorm; by 414% following the blizzard; and by 78% following "Snowmageddon".

# Mapping the Fire Experience

**Boston & Worcester Had the Most Reported Fires**
Boston reported having the most fires, with 4,841 in 2018. Worcester had the second highest number of reported fires at 1,384. Cambridge (1,074), Framingham (655), Brockton (487), and Springfield (483) 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 Blandford, Colrain and Wendell all reported less than 20 fires in 2018 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, *2018 Fires per 10,000 Population by Community,* on page 119, displays the rate of reported fires by community for every 10,000 of that community's population. The map's legend indicates which group a municipality belongs. Cities and towns that are blank reported no fires or failed to report at all.

Topsfield, with 93 total fires, had the highest rate of 153 reported fires per 10,000 population. Lincoln was the next highest with 96 total fires and 151 fires per 10,000 population; Fitchburg had 428 fires and 106 fires per 10,000 population; Cambridge had 102 fires per 10,000 population. Rates may exceed total actual reported fires.

**Boston & Worcester Had the Most Reported Structure Fires**
Boston reported having the most structure fires, with 3,714 in 2018. Worcester had the second highest number of reported structure fires at 963. Cambridge (948), Framingham (529), and Fitchburg (359) rounded out the top five communities in the Commonwealth in terms of reported structure fires.

The map titled *2018 Structure Fires per 10,000 Population by Community*, on page 120, 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.

Lincoln, with 94 structure fires, had the highest rate of 148 structure fires per 10,000 population. Topsfield was the next highest with 82 structure fires and 135 structure fires per 10,000 population; Cambridge had 90; Fitchburg had 89; and Framingham had 77 structure fires per 10,000 population.

**Boston & Worcester Had the Most Reported Residential Building Fires**
Boston reported having the most residential building fires, with 3,169 in 2018. Worcester had the second highest number of reported building fires at 841. Cambridge (776), Framingham (435), and Fitchburg (319) rounded out the top five communities in the Commonwealth in terms of reported residential building fires.

The map titled *2018 Residential Building Fires per 10,000 Population by Community*, on page 121, 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.

Lincoln, with 87 residential building fires, had the highest rate of 137 residential building fires per 10,000 population. Next highest was Topsfield with 104 residential building fires per 10,000 population; Fitchburg had 79; Cambridge had 73; Framingham had 64, and Wendell had 64 residential building fires per 10,000 population.

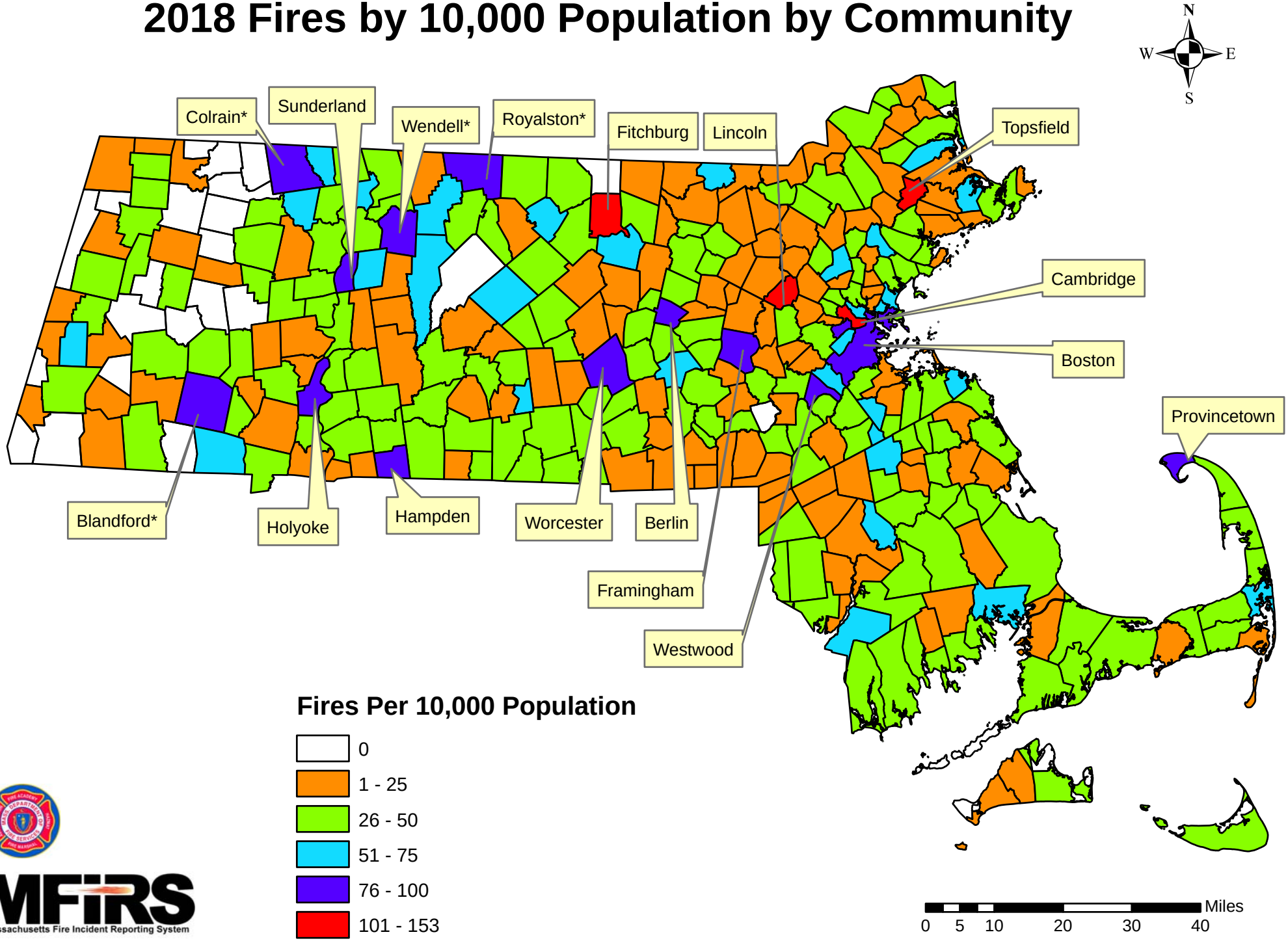
**Boston & Springfield Had the Most Reported Arsons**
Boston reported having the most arsons, with 84 in 2018. Springfield had the second highest number of reported arsons at 42. Worcester (24), Fall River (15), New Bedford

(15), and Holyoke (15) rounded out the top six communities in the Commonwealth in terms of reported arsons.

The map titled *2018 Arsons per 10,000 Population by Community,* on page 122, 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.

Ware, with 10 arsons, had the highest rate of any department reporting more than five arsons, with 10 reported arsons per 10,000 population. Next highest was Rehoboth with 9 arsons per 10,000 population, Auburn, Mashpee and Holyoke each had four arsons per 10,000 population.

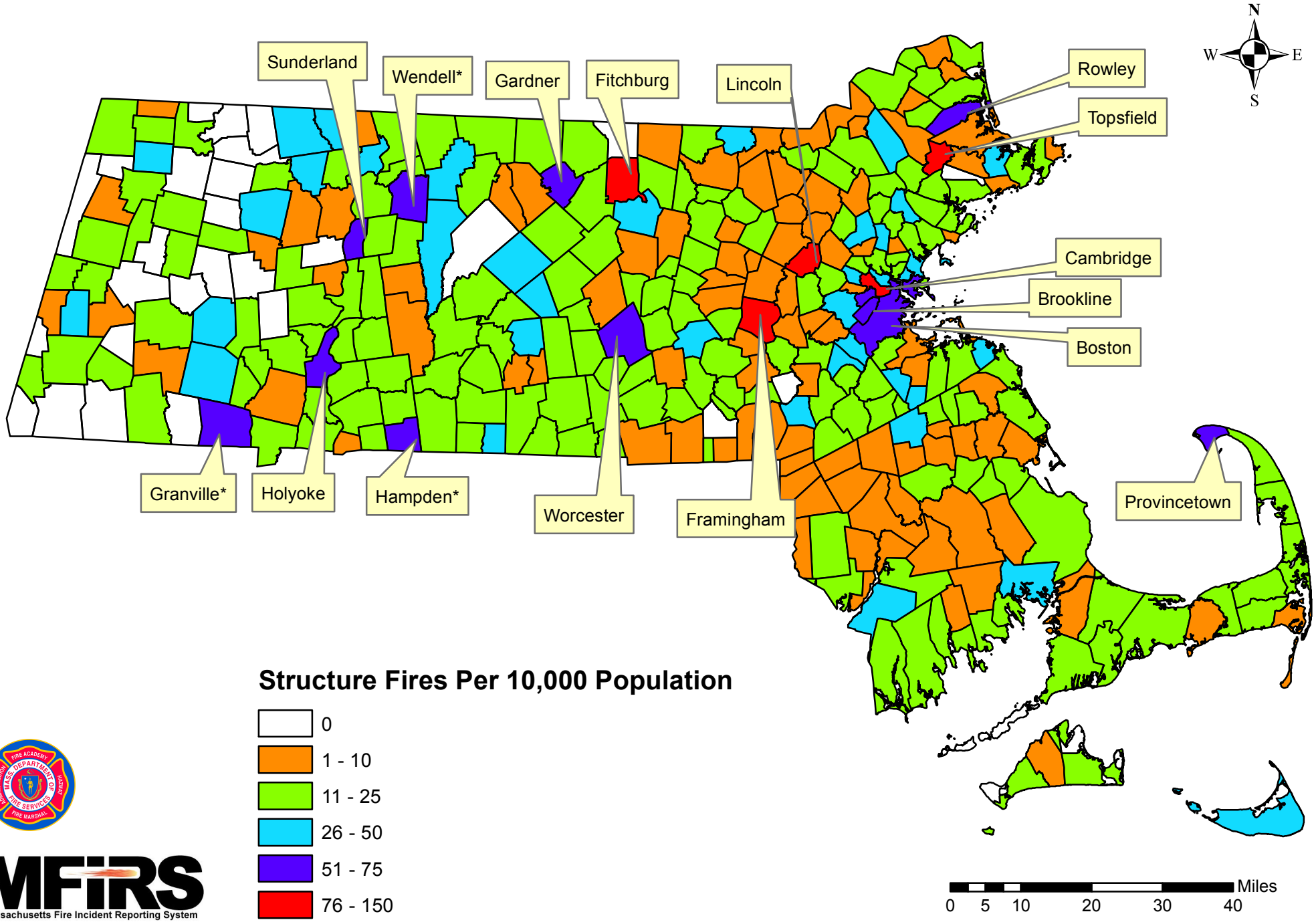
# 2018 Fires by 10,000 Population by Community




MFIRS
Massachusetts Fire Incident Reporting System

*These departments reported 15 fires or less in 2018.

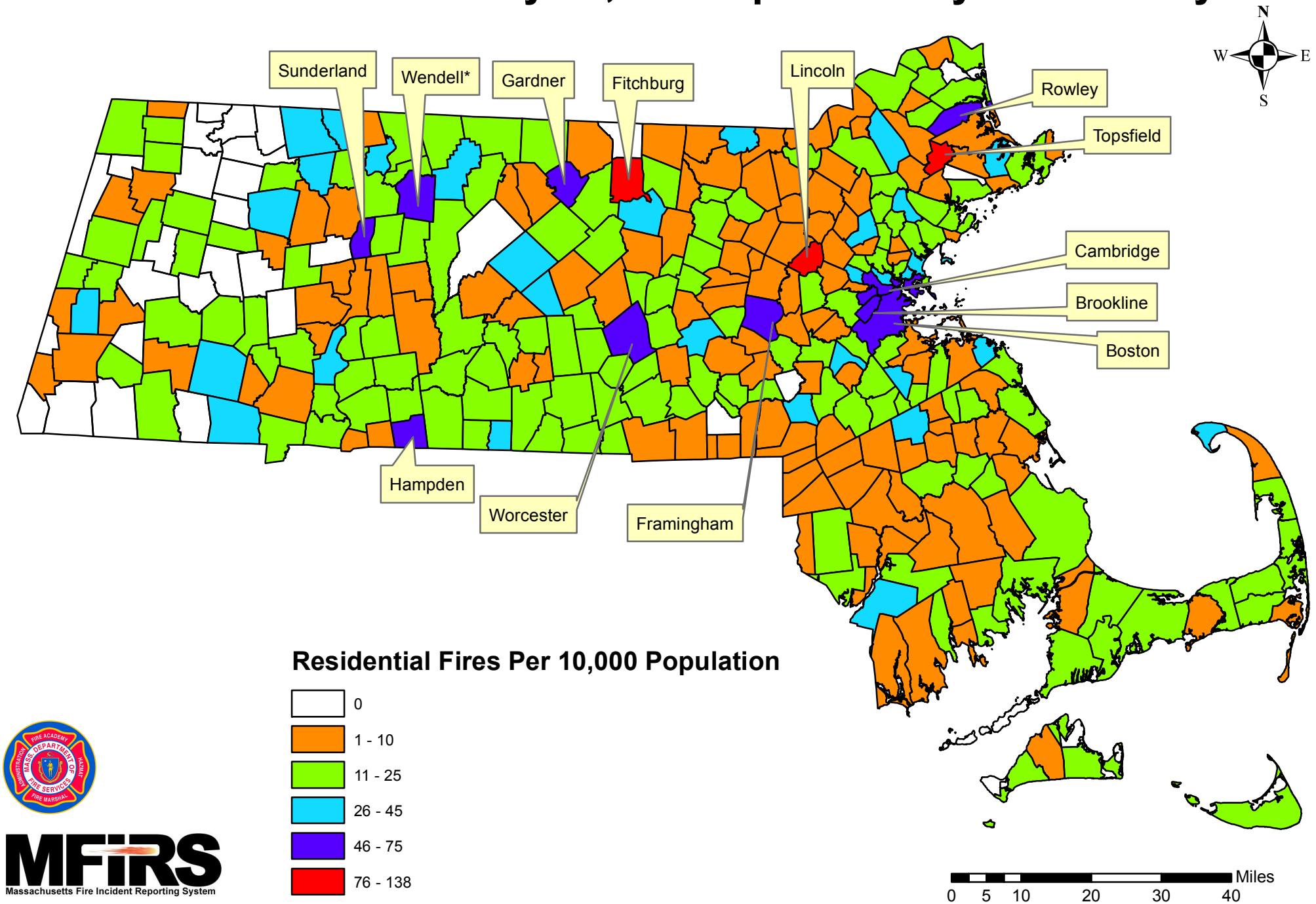
# 2018 Structure Fires by 10,000 Population by Community




MFIRS
Massachusetts Fire Incident Reporting System

*These departments reported 15 or less structure fires in 2018.

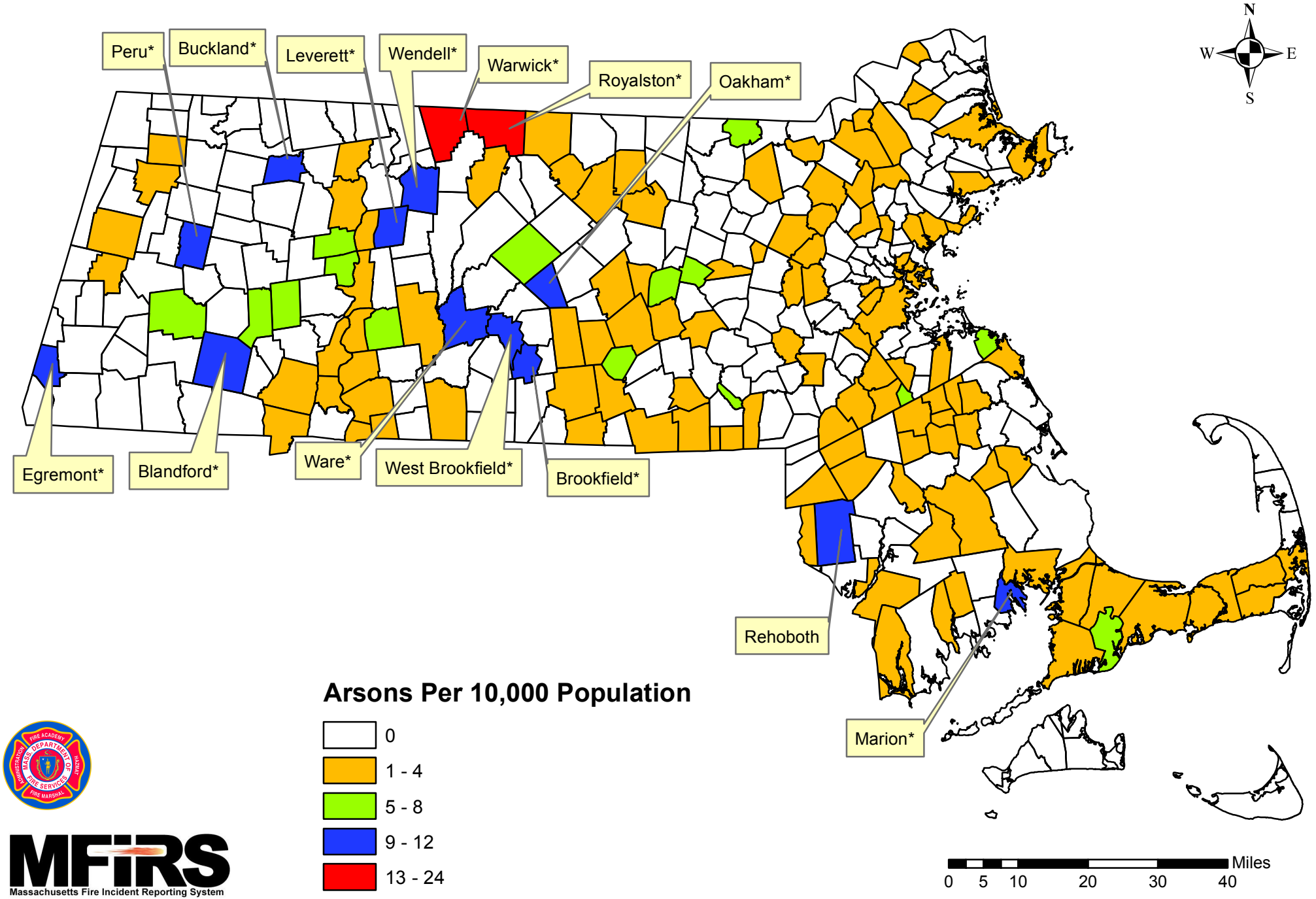
# 2018 Residential Fires by 10,000 Population by Community




MFIRS
Massachusetts Fire Incident Reporting System

*These departments reported 15 or less residential fires in 2018.

# 2018 Arsons by 10,000 Population by Community




MFIRS
Massachusetts Fire Incident Reporting System

*These departments reported 5 or less arsons in 2018.

# Appendix

# 2018 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 | 41 | 18 | 10 | 13 | 0 | 0 | 0 | 1 | $997,750 |
| Acton | 43 | 22 | 4 | 17 | 0 | 0 | 0 | 0 | $137,337 |
| Acushnet | 20 | 10 | 3 | 7 | 0 | 0 | 0 | 0 | $250,700 |
| Adams | 35 | 26 | 1 | 8 | 0 | 0 | 0 | 0 | $2,578,478 |
| Agawam | 66 | 33 | 12 | 21 | 0 | 3 | 0 | 1 | $991,405 |
| Alford | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Amesbury | 36 | 13 | 5 | 18 | 0 | 0 | 0 | 0 | $126,290 |
| Amherst | 67 | 39 | 7 | 21 | 1 | 4 | 0 | 1 | $544,407 |
| Andover | 117 | 80 | 18 | 19 | 1 | 0 | 0 | 0 | $1,908,849 |
| Aquinnah | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Arlington | 111 | 68 | 10 | 33 | 1 | 0 | 0 | 0 | $430,667 |
| Ashburnham | 18 | 10 | 3 | 5 | 0 | 0 | 0 | 0 | $42,030 |
| Ashby | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Ashfield | 8 | 5 | 0 | 3 | 0 | 0 | 0 | 0 | $0 |
| Ashland | 38 | 15 | 4 | 19 | 0 | 0 | 0 | 0 | $70,000 |
| Athol | 42 | 19 | 5 | 18 | 0 | 1 | 0 | 0 | $289,162 |
| Attleboro | 110 | 37 | 23 | 50 | 0 | 0 | 0 | 0 | $127,060 |
| Auburn | 63 | 25 | 14 | 24 | 0 | 0 | 0 | 0 | $3,800 |
| Avon | 24 | 7 | 9 | 8 | 2 | 5 | 0 | 0 | $395,034 |
| Ayer | 27 | 17 | 4 | 6 | 1 | 1 | 0 | 1 | $4,952,550 |
| Barnstable Fire Districts | | | | | | | | | |
| *Barnstable* | *24* | *9* | *1* | *14* | *1* | *0* | *0* | *0* | *$285,750* |
| *Cotuit* | *10* | *7* | *1* | *2* | *0* | *0* | *0* | *0* | *$8,115* |
| *C.O.M.M.* | *44* | *22* | *5* | *17* | *0* | *0* | *0* | *0* | *$103,050* |
| *Hyannis* | *116* | *29* | *9* | *78* | *0* | *5* | *0* | *1* | *$552,402* |
| *West Barnstable* | *16* | *6* | *3* | *7* | *0* | *0* | *0* | *0* | *$27,500* |
| Barre | 32 | 19 | 4 | 9 | 0 | 0 | 0 | 1 | $735,050 |
| Becket | 5 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | $50,000 |
| Bedford | 22 | 13 | 1 | 8 | 0 | 1 | 0 | 0 | $17,517 |
| Belchertown | 18 | 9 | 1 | 8 | 0 | 0 | 0 | 0 | $37,000 |
| Bellingham | 36 | 16 | 9 | 11 | 0 | 1 | 0 | 1 | $1,071,500 |
| Belmont | 102 | 76 | 5 | 21 | 0 | 0 | 0 | 0 | $109,100 |
| Berkley | 14 | 6 | 6 | 2 | 0 | 0 | 0 | 0 | $116,200 |
| Berlin | 23 | 5 | 7 | 11 | 0 | 0 | 0 | 0 | $28,500 |
| Bernardston | 6 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | $19,400 |
| Beverly | 85 | 53 | 7 | 25 | 0 | 2 | 0 | 6 | $487,096 |

# 2018 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Acton | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | $4 |
| Acushnet | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Adams | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Agawam | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Alford | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Amesbury | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $500 |
| Amherst | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Andover | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | $3,002 |
| Aquinnah | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Arlington | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $2,000 |
| Ashburnham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Ashby | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Ashfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Ashland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Athol | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $2,000 |
| Attleboro | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | $9,001 |
| Auburn | 7 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | $0 |
| Avon | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $5,000 |
| Ayer | 0 | 0 | 0 | 0 | 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.* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *$0* |
| *Hyannis* | *2* | *0* | *1* | *1* | *0* | *0* | *0* | *0* | *$65,000* |
| *West Barnstable* | *1* | *0* | *0* | *1* | *0* | *0* | *0* | *0* | *$0* |
| Barre | 4 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | $57,000 |
| Becket | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Bedford | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Belchertown | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Bellingham | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Belmont | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Berkley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Berlin | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Bernardston | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Beverly | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | $501 |

# 2018 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 | 95 | 30 | 24 | 41 | 0 | 1 | 0 | 1 | $662,794 |
| Blackstone | 11 | 5 | 0 | 6 | 0 | 2 | 0 | 0 | $12,500 |
| Blandford | 12 | 6 | 4 | 2 | 0 | 0 | 0 | 0 | $279,250 |
| Bolton | 21 | 9 | 7 | 5 | 0 | 0 | 0 | 0 | $60,928 |
| Boston | 4,783 | 3,709 | 236 | 838 | 2 | 5 | 0 | 1 | $39,858,299 |
| Bourne | 29 | 10 | 7 | 12 | 0 | 1 | 0 | 0 | $414,200 |
| Boxborough | 14 | 3 | 3 | 8 | 0 | 0 | 0 | 0 | $23,000 |
| Boxford | 16 | 2 | 7 | 7 | 0 | 0 | 0 | 0 | $160,041 |
| Boylston | 15 | 9 | 1 | 5 | 0 | 0 | 0 | 1 | $67,900 |
| Braintree | 70 | 15 | 20 | 35 | 0 | 0 | 0 | 0 | $507,850 |
| Brewster | 37 | 19 | 5 | 13 | 0 | 0 | 0 | 0 | $240,100 |
| Bridgewater | 79 | 45 | 9 | 25 | 0 | 0 | 0 | 0 | $764,800 |
| Brimfield | 12 | 6 | 3 | 3 | 0 | 0 | 0 | 0 | $40,000 |
| Brockton | 487 | 310 | 50 | 127 | 0 | 15 | 0 | 4 | $2,942,829 |
| Brookfield | 6 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | $0 |
| Brookline | 385 | 350 | 7 | 28 | 0 | 0 | 0 | 4 | $1,251,825 |
| Buckland | 8 | 3 | 0 | 5 | 0 | 0 | 0 | 0 | $1,500 |
| Burlington | 72 | 27 | 14 | 31 | 0 | 0 | 0 | 1 | $438,000 |
| Cambridge | 1,074 | 948 | 15 | 111 | 0 | 5 | 0 | 34 | $3,765,236 |
| Canton | 77 | 32 | 13 | 32 | 0 | 0 | 0 | 0 | $504,835 |
| Carlisle | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $10,000 |
| Carver | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | $496,000 |
| Charlemont | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Charlton | 47 | 25 | 13 | 9 | 0 | 2 | 0 | 0 | $391,767 |
| Chatham | 8 | 4 | 1 | 3 | 0 | 0 | 0 | 1 | $136,000 |
| Chelmsford | 39 | 23 | 11 | 5 | 0 | 2 | 0 | 2 | $361,308 |
| Chelsea | 236 | 166 | 9 | 61 | 1 | 2 | 0 | 25 | $3,189,520 |
| Cheshire | 13 | 5 | 4 | 4 | 0 | 0 | 0 | 0 | $317,350 |
| Chester | 5 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | $22,750 |
| Chesterfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Chicopee | 160 | 81 | 25 | 54 | 2 | 3 | 0 | 2 | $2,307,650 |
| Chilmark | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Clarksburg | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Clinton | 42 | 27 | 2 | 13 | 0 | 0 | 0 | 0 | $162,070 |
| Cohasset | 45 | 26 | 1 | 18 | 0 | 0 | 0 | 0 | $664,502 |

# 2018 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 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | $242 |
| Blackstone | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Blandford | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Bolton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Boston | 84 | 5 | 9 | 70 | 0 | 0 | 0 | 0 | $110,228 |
| Bourne | 4 | 0 | 0 | 4 | 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 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | $2,500 |
| Braintree | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Brewster | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Bridgewater | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $5,200 |
| Brimfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Brockton | 6 | 3 | 1 | 2 | 0 | 3 | 0 | 0 | $52,000 |
| Brookfield | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Brookline | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | $2,200 |
| Buckland | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Burlington | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Cambridge | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | $20,000 |
| Canton | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | $330 |
| Carlisle | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Carver | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Charlemont | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Charlton | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Chatham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Chelmsford | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Chelsea | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | $1,710,000 |
| Cheshire | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $50 |
| Chester | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Chesterfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Chicopee | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | $22,500 |
| Chilmark | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Clarksburg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Clinton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Cohasset | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | $0 |

# 2018 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 | 14 | 5 | 2 | 7 | 0 | 1 | 0 | 0 | $5,500 |
| Concord | 37 | 13 | 5 | 19 | 0 | 0 | 0 | 0 | $553,500 |
| Conway | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | $1,000 |
| Cummington | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $390,000 |
| Dalton | 17 | 7 | 5 | 5 | 0 | 1 | 0 | 0 | $0 |
| Danvers | 86 | 30 | 16 | 40 | 0 | 0 | 0 | 3 | $618,900 |
| Dartmouth Fire Districts | | | | | | | | | |
| *Dartmouth #1* | *19* | *10* | *1* | *8* | *0* | *0* | *0* | *0* | *$43,100* |
| *Dartmouth #2* | *5* | *2* | *1* | *2* | *0* | *0* | *0* | *0* | *$46,320* |
| *Dartmouth #3* | *66* | *24* | *11* | *31* | *0* | *2* | *0* | *0* | *$539,688* |
| Dedham | 144 | 80 | 11 | 53 | 0 | 0 | 0 | 0 | $728,454 |
| Deerfield Fire Districts | | | | | | | | | |
| *Deerfield* | *11* | *0* | *6* | *5* | *0* | *0* | *0* | *0* | *$1,000* |
| *South Deerfield* | *9* | *4* | *1* | *4* | *0* | *0* | *0* | *0* | *$0* |
| Dennis | 68 | 32 | 5 | 31 | 0 | 0 | 0 | 0 | $906,700 |
| Devens | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Dighton | 9 | 2 | 1 | 6 | 0 | 0 | 0 | 0 | $1,000 |
| Douglas | 15 | 6 | 3 | 6 | 0 | 0 | 0 | 0 | $37,250 |
| Dover | 19 | 8 | 1 | 10 | 0 | 0 | 0 | 0 | $0 |
| Dracut | 51 | 24 | 9 | 18 | 0 | 0 | 0 | 3 | $1,348,055 |
| Dudley | 30 | 22 | 3 | 5 | 1 | 6 | 0 | 0 | $588,200 |
| Dunstable | 16 | 12 | 0 | 4 | 0 | 0 | 0 | 0 | $194,410 |
| Duxbury | 27 | 5 | 9 | 13 | 0 | 0 | 0 | 0 | $114,250 |
| East Bridgewater | 25 | 10 | 4 | 11 | 0 | 1 | 0 | 0 | $459,950 |
| East Brookfield | 14 | 1 | 2 | 11 | 0 | 0 | 0 | 0 | $31,000 |
| East Longmeadow | 28 | 19 | 1 | 8 | 0 | 0 | 0 | 0 | $28,500 |
| Eastham | 18 | 9 | 3 | 6 | 0 | 0 | 0 | 1 | $200,920 |
| Easthampton | 31 | 17 | 4 | 10 | 0 | 0 | 0 | 0 | $247,900 |
| Easton | 48 | 17 | 6 | 25 | 0 | 0 | 0 | 0 | $737,760 |
| Edgartown | 13 | 7 | 2 | 4 | 0 | 0 | 0 | 0 | $1,000 |
| Egremont | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Erving | 5 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | $17,500 |
| Essex | 19 | 12 | 2 | 5 | 0 | 0 | 0 | 0 | $68,500 |
| Everett | 101 | 58 | 8 | 35 | 0 | 1 | 0 | 4 | $1,117,323 |
| Fairhaven | 52 | 18 | 4 | 30 | 0 | 3 | 0 | 1 | $523,443 |

# 2018 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 | 2 | 1 | 0 | 1 | 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 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | $200,000 |
| Dartmouth Fire Districts | | | | | | | | | |
| *Dartmouth #1* | *1* | *0* | *1* | *0* | *0* | *0* | *0* | *0* | *$3,000* |
| *Dartmouth #2* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *$0* |
| *Dartmouth #3* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *$0* |
| Dedham | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | $0 |
| Deerfield Fire Districts | | | | | | | | | |
| *Deerfield* | *1* | *0* | *0* | *1* | *0* | *0* | *0* | *0* | *$0* |
| *South Deerfield* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *$0* |
| Dennis | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | $0 |
| Devens | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Dighton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Douglas | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Dover | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Dracut | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $25,000 |
| Dudley | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | $205,200 |
| Dunstable | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | $189,400 |
| Duxbury | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| East Bridgewater | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| East Brookfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| East Longmeadow | 1 | 0 | 0 | 1 | 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 | 1 | 0 | 0 | 1 | 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 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | $0 |
| Fairhaven | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |

# 2018 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 |
|---|---|---|---|---|---|---|---|---|---|
| Fall River | 447 | 270 | 59 | 118 | 2 | 17 | 0 | 7 | $2,678,288 |
| Falmouth | 81 | 37 | 11 | 33 | 0 | 3 | 0 | 2 | $1,947,104 |
| Fitchburg | 428 | 359 | 19 | 50 | 0 | 4 | 0 | 0 | $584,384 |
| Florida | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $6,000 |
| Foxborough | 60 | 19 | 21 | 20 | 0 | 2 | 0 | 0 | $333,000 |
| Framingham | 655 | 529 | 23 | 103 | 0 | 1 | 0 | 2 | $1,301,810 |
| Franklin | 58 | 24 | 14 | 20 | 0 | 0 | 0 | 0 | $0 |
| Freetown | 41 | 15 | 11 | 15 | 0 | 0 | 0 | 1 | $985,680 |
| Gardner | 147 | 119 | 11 | 17 | 0 | 0 | 0 | 0 | $415,863 |
| Georgetown | 24 | 14 | 5 | 5 | 0 | 0 | 0 | 0 | $130,100 |
| Gill | 8 | 4 | 2 | 2 | 0 | 0 | 0 | 0 | $45,000 |
| Gloucester | 74 | 45 | 2 | 27 | 0 | 3 | 0 | 6 | $2,234,370 |
| Goshen | 4 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | $0 |
| Gosnold | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Grafton | 14 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | $331,330 |
| Granby | 22 | 9 | 8 | 5 | 0 | 0 | 0 | 0 | $153,600 |
| Granville | 10 | 8 | 2 | 0 | 0 | 1 | 0 | 0 | $324,300 |
| Great Barrington | 20 | 14 | 4 | 2 | 0 | 6 | 0 | 0 | $323,200 |
| Greenfield | 57 | 29 | 6 | 22 | 0 | 2 | 0 | 4 | $73,500 |
| Groton | 8 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | $34,850 |
| Groveland | 10 | 4 | 0 | 6 | 0 | 0 | 0 | 0 | $7,500 |
| Hadley | 16 | 6 | 5 | 5 | 0 | 0 | 0 | 0 | $58,500 |
| Halifax | 29 | 13 | 1 | 15 | 0 | 2 | 0 | 0 | $677,020 |
| Hamilton | 15 | 7 | 0 | 8 | 0 | 0 | 0 | 0 | $110,885 |
| Hampden | 40 | 28 | 0 | 12 | 0 | 0 | 0 | 0 | $125,300 |
| Hancock | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Hanover | 53 | 29 | 7 | 17 | 0 | 2 | 0 | 0 | $297,000 |
| Hanson | 26 | 10 | 2 | 14 | 0 | 0 | 0 | 0 | $474,200 |
| Hardwick | 5 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Harvard | 22 | 9 | 4 | 9 | 0 | 0 | 0 | 0 | $103,180 |
| Harwich | 32 | 14 | 6 | 12 | 0 | 0 | 0 | 0 | $455,000 |
| Hatfield | 13 | 1 | 2 | 10 | 1 | 0 | 0 | 0 | $36,000 |
| Haverhill | 161 | 97 | 21 | 43 | 0 | 1 | 0 | 1 | $908,475 |
| Hawley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Heath | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Hingham | 65 | 26 | 7 | 32 | 0 | 0 | 0 | 0 | $1,488,182 |

# 2018 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 |
|---|---|---|---|---|---|---|---|---|---|
| Fall River | 15 | 3 | 10 | 2 | 0 | 2 | 0 | 0 | $88,500 |
| Falmouth | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Fitchburg | 4 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | $34,658 |
| Florida | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Foxborough | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | $0 |
| Framingham | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Franklin | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Freetown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Gardner | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | $51,000 |
| Georgetown | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Gill | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Gloucester | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | $100 |
| 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 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | $1,000 |
| Granville | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Great Barrington | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Greenfield | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | $0 |
| Groton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Groveland | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Hadley | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Halifax | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Hamilton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Hampden | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Hancock | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Hanover | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Hanson | 4 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | $0 |
| Hardwick | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Harvard | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Harwich | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Hatfield | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | $0 |
| Haverhill | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Hawley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Heath | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Hingham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |

# 2018 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 | 45 | 27 | 6 | 12 | 0 | 1 | 0 | 1 | $388,060 |
| Holden | 21 | 15 | 1 | 5 | 0 | 0 | 0 | 0 | $719,500 |
| Holland | 11 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | $38,000 |
| Holliston | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | $951,000 |
| Holyoke | 301 | 211 | 25 | 65 | 0 | 2 | 0 | 2 | $58,550 |
| Hopedale | 28 | 14 | 1 | 13 | 0 | 0 | 0 | 2 | $745,400 |
| Hopkinton | 58 | 20 | 16 | 22 | 0 | 0 | 0 | 0 | $337,232 |
| Hubbardston | 14 | 8 | 3 | 3 | 0 | 0 | 0 | 0 | $17,915 |
| Hudson | 41 | 17 | 5 | 19 | 0 | 1 | 0 | 1 | $229,747 |
| Hull | 19 | 10 | 3 | 6 | 0 | 0 | 0 | 0 | $391,650 |
| Huntington | 7 | 3 | 1 | 3 | 0 | 0 | 0 | 0 | $0 |
| Ipswich | 16 | 8 | 2 | 6 | 0 | 0 | 0 | 0 | $141,000 |
| Joint Base C. C. | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | $0 |
| Kingston | 36 | 15 | 6 | 15 | 0 | 0 | 0 | 0 | $45,000 |
| Lakeville | 35 | 9 | 5 | 21 | 0 | 0 | 0 | 0 | $340,700 |
| Lancaster | 14 | 7 | 3 | 4 | 0 | 0 | 0 | 0 | $367,800 |
| Lanesborough | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | $55,000 |
| Lawrence | 148 | 45 | 40 | 63 | 0 | 6 | 0 | 16 | $3,687,652 |
| Lee | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | $177,700 |
| Leicester | 27 | 18 | 3 | 6 | 0 | 0 | 0 | 2 | $662,000 |
| Lenox | 16 | 10 | 4 | 2 | 0 | 0 | 0 | 0 | $192,700 |
| Leominster | 242 | 185 | 21 | 36 | 0 | 0 | 0 | 0 | $3,723,851 |
| Leverett | 12 | 4 | 2 | 6 | 0 | 3 | 0 | 0 | $0 |
| Lexington | 46 | 23 | 8 | 15 | 0 | 0 | 0 | 0 | $529,474 |
| Leyden | 4 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | $335,548 |
| Lincoln | 96 | 94 | 0 | 2 | 0 | 0 | 0 | 0 | $1,370,000 |
| Littleton | 31 | 15 | 12 | 4 | 1 | 0 | 0 | 0 | $623,060 |
| Logan Airport FD | 58 | 5 | 11 | 42 | 0 | 0 | 0 | 0 | $41,920 |
| Longmeadow | 32 | 12 | 8 | 12 | 0 | 0 | 0 | 0 | $608,410 |
| Lowell | 383 | 247 | 29 | 107 | 1 | 0 | 0 | 2 | $1,318,216 |
| Ludlow | 57 | 29 | 12 | 16 | 0 | 0 | 0 | 0 | $229,500 |
| Lunenburg | 28 | 21 | 1 | 6 | 0 | 0 | 0 | 1 | $58,160 |
| Lynn | 323 | 209 | 26 | 88 | 0 | 3 | 0 | 76 | $1,115,965 |
| Lynnfield | 76 | 56 | 7 | 13 | 0 | 0 | 0 | 1 | $56,000 |

# 2018 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 | 1 | 0 | 0 | 1 | 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 | 15 | 5 | 3 | 7 | 0 | 0 | 0 | 0 | $32,100 |
| Hopedale | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | $0 |
| Hopkinton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Hubbardston | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Hudson | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | $0 |
| Hull | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Huntington | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Ipswich | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | $0 |
| Joint Base C. C. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Kingston | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Lakeville | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $5,000 |
| Lancaster | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Lanesborough | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Lawrence | 11 | 4 | 2 | 5 | 0 | 0 | 0 | 0 | $136,500 |
| Lee | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Leicester | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Lenox | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Leominster | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Leverett | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Lexington | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Leyden | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Lincoln | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Littleton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Logan Airport FD | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Longmeadow | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Lowell | 7 | 4 | 1 | 2 | 1 | 0 | 0 | 0 | $32,520 |
| Ludlow | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Lunenburg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Lynn | 6 | 3 | 0 | 3 | 0 | 0 | 0 | 34 | $485,210 |
| Lynnfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |

# 2018 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 | 143 | 61 | 11 | 71 | 0 | 0 | 0 | 2 | $40,500 |
| Manchester | 5 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | $22,101 |
| Mansfield | 46 | 16 | 12 | 18 | 0 | 5 | 0 | 1 | $338,905 |
| Marblehead | 40 | 26 | 2 | 12 | 0 | 0 | 0 | 0 | $1,009,471 |
| Marion | 19 | 6 | 3 | 10 | 0 | 1 | 0 | 1 | $320,000 |
| Marlborough | 122 | 37 | 14 | 71 | 0 | 0 | 0 | 1 | $1,151,138 |
| Marshfield | 78 | 34 | 7 | 37 | 0 | 0 | 0 | 0 | $115,000 |
| Mashpee | 38 | 17 | 3 | 18 | 0 | 3 | 0 | 0 | $592,600 |
| Mattapoisett | 18 | 10 | 2 | 6 | 0 | 0 | 0 | 0 | $15,000 |
| Maynard | 24 | 10 | 1 | 13 | 0 | 0 | 0 | 0 | $66,700 |
| Medfield | 17 | 9 | 1 | 7 | 0 | 0 | 0 | 0 | $35,000 |
| Medford | 215 | 131 | 25 | 59 | 0 | 1 | 0 | 0 | $194,500 |
| Medway | 33 | 23 | 2 | 8 | 0 | 0 | 0 | 0 | $155,706 |
| Melrose | 16 | 13 | 1 | 2 | 0 | 0 | 0 | 0 | $706,000 |
| Mendon | 4 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | $0 |
| Merrimac | 28 | 10 | 5 | 13 | 0 | 0 | 0 | 0 | $10,160 |
| Methuen | 116 | 31 | 18 | 67 | 0 | 0 | 0 | 0 | $391,500 |
| Middleborough | 67 | 21 | 16 | 30 | 0 | 0 | 0 | 0 | $578,165 |
| Middlefield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Middleton | 21 | 10 | 2 | 9 | 0 | 0 | 0 | 0 | $42,500 |
| Milford | 72 | 45 | 8 | 19 | 0 | 5 | 0 | 2 | $309,110 |
| Millbury | 54 | 33 | 12 | 9 | 1 | 3 | 0 | 0 | $927,600 |
| Millis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Millville | 7 | 4 | 0 | 3 | 0 | 1 | 0 | 1 | $67,700 |
| Milton | 69 | 48 | 8 | 13 | 0 | 0 | 0 | 0 | $277,000 |
| Monroe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Monson | 26 | 14 | 3 | 9 | 0 | 0 | 0 | 0 | $646,550 |
| Montague Fire Districts | | | | | | | | | |
| *Montague Center* | *8* | *4* | *0* | *4* | *0* | *0* | *0* | *0* | *$55,000* |
| *Turners Falls* | *20* | *11* | *1* | *8* | *0* | *1* | *0* | *0* | *$20,000* |
| Monterey | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | $500 |
| Montgomery | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Nahant | 14 | 10 | 0 | 4 | 0 | 0 | 0 | 3 | $957,000 |
| Nantucket | 49 | 37 | 5 | 7 | 0 | 0 | 0 | 0 | $160,700 |
| Natick | 67 | 19 | 6 | 42 | 0 | 0 | 0 | 1 | $969,350 |
| Needham | 35 | 7 | 2 | 26 | 0 | 0 | 0 | 0 | $230,060 |

# 2018 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Mansfield | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | $1,500 |
| Marblehead | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Marion | 5 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | $0 |
| Marlborough | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Marshfield | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Mashpee | 6 | 1 | 0 | 5 | 0 | 1 | 0 | 0 | $0 |
| Mattapoisett | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Maynard | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Medfield | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | $0 |
| Medford | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Merrimac | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Methuen | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Middleborough | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $2,560 |
| Middlefield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Middleton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Milford | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Millbury | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Millis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Millville | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $5,000 |
| Milton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Monroe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Monson | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Montague Fire Districts | | | | | | | | | |
| *Montague Center* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *$0* |
| *Turners Falls* | *0* | *0* | *0* | *0* | *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 |
| Nahant | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |

# 2018 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 | 399 | 215 | 61 | 123 | 3 | 18 | 0 | 2 | $3,766,385 |
| New Braintree | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $31,000 |
| New Marlborough | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| New Salem | 7 | 3 | 1 | 3 | 0 | 0 | 0 | 0 | $513,000 |
| Newbury | 18 | 14 | 2 | 2 | 0 | 0 | 0 | 0 | $5,000 |
| Newburyport | 7 | 3 | 2 | 2 | 0 | 1 | 0 | 0 | $701,000 |
| Newton | 280 | 222 | 8 | 50 | 0 | 0 | 0 | 1 | $2,145,590 |
| Norfolk | 52 | 39 | 3 | 10 | 0 | 0 | 0 | 0 | $236,094 |
| North Adams | 38 | 21 | 4 | 13 | 0 | 0 | 0 | 0 | $194,450 |
| North Andover | 110 | 81 | 12 | 17 | 0 | 2 | 0 | 0 | $3,504,928 |
| North Attleboro | 48 | 28 | 10 | 10 | 0 | 0 | 0 | 0 | $90,550 |
| North Brookfield | 23 | 14 | 0 | 9 | 0 | 0 | 0 | 0 | $371,240 |
| North Reading | 34 | 18 | 6 | 10 | 0 | 1 | 0 | 0 | $138,000 |
| Northampton | 52 | 29 | 9 | 14 | 0 | 1 | 0 | 0 | $442,500 |
| Northborough | 38 | 15 | 4 | 19 | 0 | 1 | 0 | 3 | $841,600 |
| Northbridge | 29 | 19 | 5 | 5 | 0 | 1 | 0 | 0 | $437,270 |
| Northfield | 10 | 6 | 0 | 4 | 0 | 0 | 0 | 0 | $1,000 |
| Norton | 34 | 9 | 8 | 17 | 0 | 1 | 0 | 0 | $1,121,295 |
| Norwell | 8 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | $802,000 |
| Norwood | 82 | 32 | 7 | 43 | 0 | 0 | 0 | 0 | $82,630 |
| Oak Bluffs | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Oakham | 8 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | $11,000 |
| Orange | 46 | 24 | 8 | 14 | 2 | 1 | 0 | 0 | $1,252,359 |
| Orleans | 36 | 11 | 5 | 20 | 0 | 1 | 0 | 0 | $1,044,120 |
| Otis | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Oxford | 54 | 32 | 7 | 15 | 0 | 1 | 0 | 1 | $945,900 |
| Palmer Fire Districts | | | | | | | | | |
| *Bondsville* | *4* | *3* | *0* | *1* | *0* | *0* | *0* | *0* | *$0* |
| *Palmer* | *35* | *16* | *8* | *11* | *0* | *0* | *0* | *0* | *$194,630* |
| *Three Rivers* | *11* | *5* | *4* | *2* | *1* | *0* | *0* | *2* | *$246,700* |
| Paxton | 14 | 10 | 2 | 2 | 0 | 0 | 0 | 0 | $30,000 |
| Peabody | 156 | 87 | 18 | 51 | 0 | 0 | 0 | 0 | $485,060 |
| Pelham | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | $0 |
| Pembroke | 5 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | $750,000 |
| Pepperell | 24 | 12 | 4 | 8 | 0 | 1 | 0 | 0 | $1,134,125 |

# 2018 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 | 15 | 3 | 10 | 2 | 0 | 1 | 0 | 0 | $165,950 |
| New Braintree | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| New Marlborough | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| New Salem | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Newbury | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Newburyport | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Newton | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $1,000 |
| Norfolk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| North Adams | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| North Andover | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | $14,150 |
| North Attleboro | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $1,000 |
| North Brookfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| North Reading | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Northampton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Northborough | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Northbridge | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Northfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Norton | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | $5,000 |
| Norwell | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Norwood | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | $5,000 |
| Oak Bluffs | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Oakham | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | $500 |
| Orange | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Orleans | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Otis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Oxford | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Palmer Fire Districts | | | | | | | | | |
| *Bondsville* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *$0* |
| *Palmer* | *0* | *0* | *0* | *0* | *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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| 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 |

# 2018 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 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | $10,000 |
| Petersham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Phillipston | 5 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | $0 |
| Pittsfield | 186 | 108 | 12 | 66 | 2 | 6 | 0 | 8 | $2,138,630 |
| Plainfield | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | $0 |
| Plainville | 16 | 6 | 2 | 8 | 0 | 0 | 0 | 0 | $10,004 |
| Plymouth | 191 | 79 | 32 | 80 | 1 | 8 | 0 | 4 | $3,260,110 |
| Plympton | 10 | 5 | 2 | 3 | 0 | 0 | 0 | 0 | $16,500 |
| Princeton | 8 | 5 | 1 | 2 | 0 | 0 | 0 | 0 | $0 |
| Provincetown | 23 | 20 | 0 | 3 | 0 | 0 | 0 | 0 | $81,000 |
| Quincy | 512 | 337 | 30 | 145 | 1 | 0 | 0 | 12 | $887,049 |
| Randolph | 192 | 133 | 18 | 41 | 0 | 1 | 0 | 0 | $430,000 |
| Raynham | 68 | 13 | 28 | 27 | 0 | 0 | 0 | 0 | $210,582 |
| Reading | 75 | 54 | 5 | 16 | 0 | 1 | 0 | 0 | $276,800 |
| Rehoboth | 41 | 14 | 5 | 22 | 0 | 0 | 0 | 1 | $150,000 |
| Revere | 301 | 228 | 18 | 55 | 0 | 0 | 0 | 7 | $7,410,902 |
| Richmond | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Rochester | 4 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | $0 |
| Rockland | 69 | 35 | 5 | 29 | 0 | 4 | 0 | 1 | $949,510 |
| Rockport | 4 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Rowe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Rowley | 39 | 32 | 0 | 7 | 0 | 0 | 0 | 0 | $13,215 |
| Royalston | 10 | 3 | 0 | 7 | 0 | 0 | 0 | 1 | $505,500 |
| Russell | 6 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | $76,400 |
| Rutland | 22 | 8 | 1 | 13 | 0 | 1 | 0 | 0 | $1,680,834 |
| Salem | 136 | 61 | 7 | 68 | 0 | 1 | 0 | 2 | $1,881,250 |
| Salisbury | 28 | 10 | 3 | 15 | 0 | 0 | 0 | 0 | $5,000 |
| Sandisfield | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | $5,200 |
| Sandwich | 62 | 34 | 9 | 19 | 0 | 2 | 0 | 2 | $1,766,820 |
| Saugus | 92 | 41 | 6 | 45 | 0 | 3 | 0 | 4 | $947,761 |
| Savoy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Scituate | 53 | 31 | 4 | 18 | 0 | 0 | 0 | 0 | $84,900 |
| Seekonk | 49 | 10 | 6 | 33 | 0 | 2 | 0 | 0 | $989,423 |
| Sharon | 40 | 23 | 9 | 8 | 0 | 0 | 0 | 0 | $107,750 |
| Sheffield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |

# 2018 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 | 1 | 0 | 0 | 1 | 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 | 8 | 1 | 1 | 6 | 0 | 0 | 0 | 0 | $51,500 |
| Plainfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Plainville | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Plymouth | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Plympton | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $2,500 |
| Princeton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Provincetown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Quincy | 8 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | $0 |
| Randolph | 9 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | $0 |
| Raynham | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Reading | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Rehoboth | 10 | 2 | 0 | 8 | 0 | 0 | 0 | 1 | $0 |
| Revere | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | $1,300 |
| Richmond | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Rochester | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Rockland | 1 | 1 | 0 | 0 | 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 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | $0 |
| Russell | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Rutland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Salem | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Salisbury | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Sandisfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Sandwich | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | $4,000 |
| Saugus | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Savoy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Scituate | 6 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | $0 |
| Seekonk | 1 | 0 | 0 | 1 | 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 |

# 2018 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* | *8* | *4* | *2* | *2* | *0* | *0* | *0* | *0* | *$306,220* |
| *Shelburne Falls* | *3* | *2* | *0* | *1* | *0* | *0* | *0* | *0* | *$330,400* |
| Sherborn | 15 | 7 | 0 | 8 | 0 | 0 | 0 | 0 | $345,250 |
| Shirley | 14 | 9 | 2 | 3 | 0 | 0 | 0 | 2 | $3,000 |
| Shrewsbury | 116 | 63 | 17 | 36 | 0 | 0 | 0 | 0 | $357,150 |
| Shutesbury | 4 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | $260,100 |
| Somerset | 29 | 9 | 10 | 10 | 0 | 0 | 0 | 0 | $189,500 |
| Somerville | 434 | 353 | 16 | 65 | 0 | 3 | 0 | 20 | $1,646,950 |
| South Hadley Fire Districts | | | | | | | | | |
| *South Hadley #1* | *28* | *14* | *2* | *12* | *0* | *0* | *0* | *0* | *$176,600* |
| *South Hadley #2* | *23* | *19* | *1* | *3* | *0* | *0* | *0* | *0* | *$0* |
| Southampton | 18 | 9 | 3 | 6 | 0 | 0 | 0 | 0 | $17,230 |
| Southborough | 30 | 18 | 7 | 5 | 0 | 1 | 0 | 0 | $1,706,545 |
| Southbridge | 45 | 28 | 6 | 11 | 0 | 4 | 0 | 1 | $493,300 |
| Southwick | 31 | 18 | 2 | 11 | 2 | 0 | 0 | 0 | $526,700 |
| Spencer | 28 | 17 | 5 | 6 | 0 | 2 | 0 | 0 | $84,000 |
| Springfield | 483 | 296 | 72 | 115 | 3 | 8 | 0 | 25 | $2,815,200 |
| Sterling | 13 | 5 | 5 | 3 | 0 | 0 | 0 | 0 | $621,750 |
| Stockbridge | 10 | 6 | 2 | 2 | 0 | 0 | 0 | 0 | $0 |
| Stoneham | 80 | 56 | 7 | 17 | 0 | 1 | 0 | 0 | $0 |
| Stoughton | 83 | 37 | 8 | 38 | 0 | 3 | 0 | 0 | $495,730 |
| Stow | 12 | 2 | 1 | 9 | 0 | 0 | 0 | 0 | $205,100 |
| Sturbridge | 32 | 13 | 10 | 9 | 1 | 0 | 0 | 0 | $197,670 |
| Sudbury | 21 | 15 | 1 | 5 | 0 | 1 | 0 | 21 | $533,220 |
| Sunderland | 32 | 20 | 2 | 10 | 0 | 0 | 0 | 0 | $50,500 |
| Sutton | 24 | 16 | 2 | 6 | 0 | 0 | 0 | 0 | $17,000 |
| Swampscott | 36 | 9 | 2 | 25 | 0 | 0 | 0 | 0 | $64,700 |
| Swansea | 44 | 19 | 16 | 9 | 0 | 0 | 0 | 0 | $0 |
| Taunton | 51 | 29 | 5 | 17 | 1 | 0 | 0 | 1 | $927,410 |
| Templeton | 6 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | $0 |
| Tewksbury | 87 | 30 | 6 | 51 | 0 | 0 | 0 | 0 | $1,581,836 |
| Tisbury | 15 | 8 | 3 | 4 | 0 | 0 | 0 | 0 | $148,500 |
| Tolland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Topsfield | 93 | 82 | 5 | 6 | 0 | 1 | 0 | 0 | $770,600 |
| Townsend | 17 | 8 | 4 | 5 | 0 | 0 | 0 | 0 | $166,613 |
| Truro | 8 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | $462,500 |

# 2018 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* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *$0* |
| *Shelburne Falls* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *$0* |
| Sherborn | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Shirley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Shrewsbury | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Shutesbury | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Somerset | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $70,000 |
| Somerville | 1 | 1 | 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* | *0* | *0* | *1* | *0* | *0* | *0* | *0* | *$0* |
| Southampton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Southborough | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Southbridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Southwick | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Spencer | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Springfield | 42 | 20 | 5 | 17 | 0 | 1 | 0 | 1 | $156,000 |
| Sterling | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Stockbridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Stoneham | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | $0 |
| Stoughton | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | $1,500 |
| Stow | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Sturbridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Sudbury | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Sunderland | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Sutton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Swampscott | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| Swansea | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Taunton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Templeton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Tewksbury | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | $10,000 |
| Tisbury | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Tolland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Topsfield | 0 | 0 | 0 | 0 | 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 |

# 2018 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 | 26 | 11 | 4 | 11 | 0 | 3 | 0 | 0 | $430,500 |
| Tyringham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Upton | 24 | 15 | 4 | 5 | 0 | 0 | 0 | 0 | $157,000 |
| Uxbridge | 22 | 12 | 6 | 4 | 0 | 1 | 0 | 2 | $607,600 |
| Wakefield | 39 | 34 | 3 | 2 | 0 | 0 | 0 | 0 | $160,000 |
| Wales | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | $20,000 |
| Walpole | 70 | 43 | 5 | 22 | 0 | 0 | 0 | 1 | $177,200 |
| Waltham | 142 | 62 | 14 | 66 | 1 | 1 | 0 | 10 | $1,399,060 |
| Ware | 41 | 19 | 3 | 19 | 0 | 0 | 0 | 2 | $5,500 |
| Wareham Fire Districts | | | | | | | | | |
| *Onset* | *47* | *33* | *4* | *10* | *0* | *0* | *0* | *2* | *$64,550* |
| *Wareham* | *76* | *30* | *15* | *31* | *1* | *1* | *0* | *2* | *$1,371,650* |
| Warren | 12 | 8 | 2 | 2 | 0 | 0 | 0 | 0 | $150,450 |
| Warwick | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $50,000 |
| Washington | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Watertown | 29 | 16 | 2 | 11 | 0 | 0 | 0 | 0 | $1,090,600 |
| Wayland | 25 | 9 | 1 | 15 | 0 | 0 | 0 | 0 | $67,300 |
| Webster | 53 | 32 | 11 | 10 | 0 | 2 | 0 | 1 | $793,100 |
| Wellesley | 32 | 14 | 7 | 11 | 0 | 1 | 0 | 0 | $1,040,300 |
| Wellfleet | 9 | 4 | 1 | 4 | 0 | 0 | 0 | 0 | $1,050 |
| Wendell | 7 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | $8,750 |
| Wenham | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | $50,400 |
| West Boylston | 17 | 9 | 2 | 6 | 0 | 1 | 0 | 0 | $143,900 |
| West Bridgewater | 31 | 6 | 9 | 16 | 0 | 3 | 0 | 0 | $462,901 |
| West Brookfield | 13 | 5 | 2 | 6 | 0 | 0 | 0 | 0 | $500 |
| West Newbury | 8 | 6 | 1 | 1 | 0 | 2 | 0 | 0 | $0 |
| West Springfield | 93 | 44 | 14 | 35 | 0 | 2 | 0 | 0 | $89,800 |
| West Stockbridge | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | $0 |
| West Tisbury | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Westborough | 96 | 72 | 4 | 20 | 0 | 0 | 0 | 0 | $752,965 |
| Westfield | 72 | 39 | 10 | 23 | 0 | 0 | 0 | 1 | $2,491,560 |
| Westford | 43 | 21 | 2 | 20 | 0 | 2 | 0 | 0 | $174,510 |
| Westhampton | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | $0 |
| Westminster | 25 | 12 | 5 | 8 | 0 | 0 | 0 | 1 | $1,064,750 |
| Weston | 29 | 13 | 7 | 9 | 2 | 0 | 0 | 0 | $167,000 |
| Westport | 45 | 16 | 5 | 24 | 0 | 1 | 0 | 0 | $641,751 |

# 2018 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Uxbridge | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Wakefield | 1 | 1 | 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 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $5 |
| Ware | 10 | 2 | 0 | 8 | 0 | 0 | 0 | 0 | $0 |
| Wareham Fire Districts | | | | | | | | | |
| *Onset* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *$0* |
| *Wareham* | *1* | *0* | *0* | *1* | *0* | *0* | *0* | *0* | *$0* |
| Warren | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Warwick | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $50,000 |
| Washington | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Watertown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Wayland | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $8,000 |
| Webster | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Wellesley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Wellfleet | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Wendell | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Wenham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| West Boylston | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| West Bridgewater | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |
| West Brookfield | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | $0 |
| West Newbury | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| West Springfield | 7 | 1 | 3 | 3 | 0 | 0 | 0 | 0 | $10,500 |
| West Stockbridge | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| West Tisbury | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Westborough | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Westfield | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | $0 |
| Westford | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Westhampton | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Westminster | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $25,250 |
| Weston | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | $0 |
| Westport | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $0 |

# 2018 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 | 114 | 73 | 6 | 35 | 1 | 0 | 0 | 2 | $794,400 |
| Weymouth | 219 | 126 | 23 | 70 | 0 | 7 | 0 | 11 | $1,899,500 |
| Whately | 4 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | $0 |
| Whitman | 26 | 13 | 5 | 8 | 0 | 0 | 0 | 1 | $202,800 |
| Wilbraham | 47 | 27 | 8 | 12 | 0 | 3 | 0 | 3 | $830,760 |
| Williamsburg | 11 | 5 | 2 | 4 | 0 | 0 | 0 | 0 | $22,000 |
| Williamstown | 17 | 12 | 2 | 3 | 0 | 1 | 0 | 0 | $42,500 |
| Wilmington | 35 | 10 | 11 | 14 | 0 | 3 | 0 | 0 | $784,179 |
| Winchendon | 41 | 19 | 10 | 12 | 0 | 0 | 0 | 0 | $467,800 |
| Winchester | 20 | 8 | 2 | 10 | 0 | 3 | 0 | 0 | $45,000 |
| Windsor | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Winthrop | 53 | 31 | 3 | 19 | 0 | 0 | 0 | 0 | $1,207,040 |
| Woburn | 199 | 126 | 24 | 49 | 0 | 3 | 0 | 1 | $2,701,317 |
| Worcester | 1,384 | 963 | 87 | 334 | 3 | 12 | 1 | 32 | $12,319,721 |
| Worthington | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Wrentham | 11 | 4 | 5 | 2 | 0 | 0 | 0 | 0 | $198,405 |
| Yarmouth | 59 | 20 | 12 | 27 | 0 | 0 | 0 | 3 | $708,660 |

# 2018 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 | 3 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | $75,000 |
| Whately | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |
| Whitman | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | $21,500 |
| Wilbraham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Williamsburg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Williamstown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Wilmington | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | $800 |
| Winchendon | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | $5,000 |
| Winchester | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Windsor | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Winthrop | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | $2,500 |
| Woburn | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | $300 |
| Worcester | 24 | 11 | 5 | 8 | 0 | 0 | 1 | 4 | $1,394,584 |
| Worthington | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Wrentham | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Yarmouth | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | $0 |

# 2018 Fires By Incident Type

| Incident Type | Total Fires | % of Total | Civilian Deaths | Civilian Inj. | Fire Service Deaths | Fire Service Inj. | Dollar Loss |
|---|---|---|---|---|---|---|---|
| Structure Fires | 16,169 | 63% | 40 | 236 | 1 | 401 | $202,029,373 |
| Vehicle Fires | 2,465 | 10% | 2 | 14 | 0 | 11 | 22,858,909 |
| Brush Fires | 3,253 | 13% | 1 | 3 | 0 | 2 | 493,145 |
| Outside Rubbish Fires | 2,014 | 8% | 0 | 2 | 0 | 3 | 165,342 |
| Special Outside Fires | 761 | 3% | 2 | 9 | 0 | 2 | 1,059,677 |
| Cult. Veg. & Crop Fires | 42 | 0.2% | 0 | 0 | 0 | 1 | 0 |
| Other Fires | 80 | 3% | 0 | 25 | 0 | 5 | 2,309,185 |
| **Total Fires** | **25,504** | **100%** | **45** | **289** | **1** | **425** | **$228,915,631** |

# 2018 Arsons* By Incident Type

| Incident Type | Total Fires | % of Total | Civilian Deaths | Civilian Inj. | Fire Service Deaths | Fire Service Inj. | Dollar Loss |
|---|---|---|---|---|---|---|---|
| Structure Arsons | 134 | 24% | 2 | 9 | 1 | 42 | $4,812,226 |
| Vehicle Arsons | 78 | 14% | 1 | 0 | 0 | 0 | 561,369 |
| Brush Arsons | 156 | 28% | 0 | 0 | 0 | 0 | 4,533 |
| Outside Rubbish Arsons | 70 | 13% | 0 | 0 | 0 | 0 | 331 |
| Special Outside Arsons | 86 | 11% | 1 | 1 | 0 | 0 | 20,737 |
| Cult. Veg. & Crop Arsons | 9 | 0.4% | 0 | 0 | 0 | 1 | 0 |
| Other Arsons | 72 | 9% | 0 | 3 | 0 | 0 | 51,150 |
| **Total Arsons** | **551** | **100%** | **4** | **13** | **1** | **43** | **$5,450,346** |

*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.

# 2018 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 | 723 | 307 | 88 | 224 | 1 | 15 | 0 | 10 | $9,933,591 |
| Berkshire | 386 | 230 | 42 | 57 | 2 | 14 | 0 | 8 | 6,091,708 |
| Bristol | 1,678 | 782 | 292 | 401 | 6 | 48 | 0 | 14 | 14,425,040 |
| Dukes | 30 | 17 | 5 | 5 | 0 | 0 | 0 | 0 | 149,500 |
| Essex | 2,160 | 1,193 | 246 | 471 | 1 | 25 | 0 | 118 | 22,623,269 |
| Franklin | 295 | 146 | 39 | 69 | 3 | 8 | 0 | 5 | 3,347,277 |
| Hampden | 1,547 | 913 | 217 | 256 | 8 | 22 | 0 | 36 | 12,991,890 |
| Hampshire | 351 | 180 | 52 | 74 | 2 | 5 | 0 | 3 | 2,126,237 |
| Middlesex | 5,432 | 3,674 | 397 | 807 | 7 | 35 | 0 | 110 | 39,202,987 |
| Nantucket | 40 | 33 | 2 | 1 | 0 | 0 | 0 | 0 | 158,700 |
| Norfolk | 2,134 | 1,310 | 225 | 404 | 4 | 21 | 0 | 20 | 12,218,339 |
| Plymouth | 1,626 | 820 | 219 | 388 | 3 | 38 | 0 | 16 | 18,482,417 |
| Suffolk | 5,431 | 4,139 | 277 | 492 | 3 | 7 | 0 | 33 | 51,707,681 |
| Worcester | 3,671 | 2,425 | 364 | 404 | 5 | 51 | 1 | 52 | 35,456,995 |
| **Total** | **25,504** | **16,169** | **2,465** | **4,053** | **45** | **289** | **1** | **425** | **$228,915,631** |

# 2018 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 | 31 | 3 | 2 | 26 | 0 | 1 | 0 | 0 | $69,000 |
| Berkshire | 15 | 2 | 1 | 12 | 0 | 0 | 0 | 0 | 51,550 |
| Bristol | 53 | 12 | 22 | 19 | 0 | 4 | 0 | 0 | 343,951 |
| Dukes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Essex | 39 | 11 | 4 | 24 | 0 | 0 | 0 | 0 | 639,963 |
| Franklin | 11 | 2 | 0 | 9 | 0 | 0 | 0 | 0 | 50,000 |
| Hampden | 78 | 28 | 13 | 37 | 0 | 1 | 0 | 0 | 221,100 |
| Hampshire | 23 | 2 | 1 | 20 | 1 | 0 | 0 | 1 | 1,000 |
| Middlesex | 49 | 18 | 5 | 26 | 2 | 2 | 0 | 2 | 289,272 |
| Nantucket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Norfolk | 40 | 7 | 3 | 30 | 0 | 2 | 0 | 0 | 89,030 |
| Plymouth | 38 | 11 | 4 | 23 | 0 | 3 | 0 | 0 | 88,760 |
| Suffolk | 88 | 8 | 10 | 70 | 0 | 0 | 0 | 0 | 1,824,028 |
| Worcester | 86 | 30 | 13 | 43 | 0 | 0 | 1 | 1 | 1,782,692 |
| **Total** | **551** | **134** | **78** | **339** | **4** | **12** | **1** | **4** | **$5,450,346** |

# 2018 Fires, Arsons and Deaths by County and by Population*

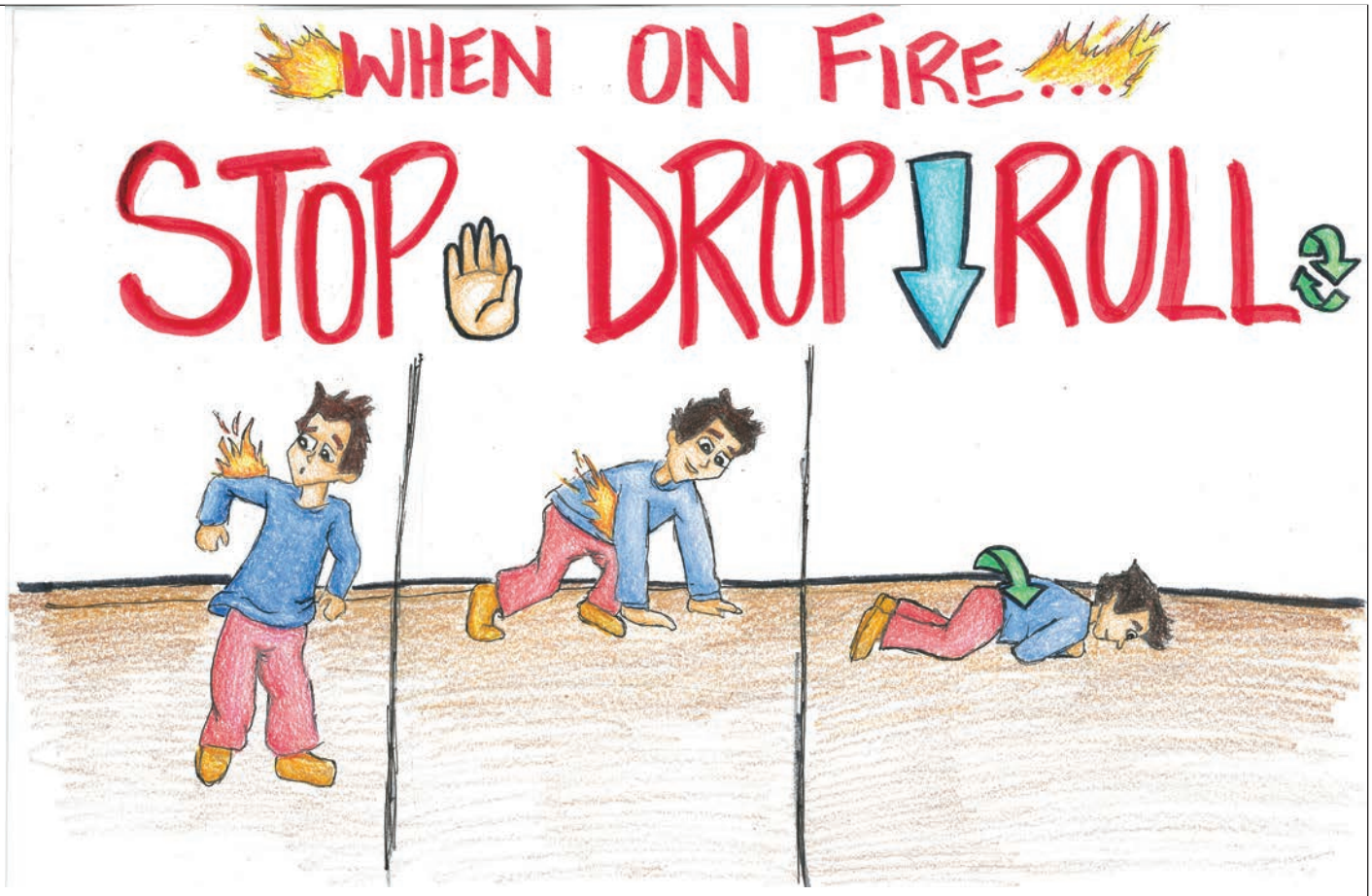
| County | Population | Total Fires | Fires per 1,000 Pop. | Fire Deaths | Deaths per 1,000 Fires | Deaths per 10,000 Pop. | Total Arsons | Arsons per 1,000 Pop. |
|---|---|---|---|---|---|---|---|---|
| Barnstable | 215,888 | 723 | 3.3 | 1 | 1.4 | 0.05 | 31 | 0.1 |
| Berkshire | 131,219 | 386 | 2.9 | 2 | 5.2 | 0.15 | 15 | 0.1 |
| Bristol | 548,285 | 1,678 | 3.1 | 6 | 3.6 | 0.11 | 53 | 0.1 |
| Dukes | 16,535 | 30 | 1.8 | 0 | 0.0 | 0.00 | 0 | 0.0 |
| Essex | 743,159 | 2,160 | 2.9 | 1 | 0.5 | 0.01 | 39 | 0.1 |
| Franklin | 71,372 | 295 | 4.1 | 3 | 10.2 | 0.42 | 11 | 0.2 |
| Hampden | 463,490 | 1,547 | 3.3 | 8 | 5.2 | 0.17 | 78 | 0.2 |
| Hampshire | 158,080 | 351 | 2.2 | 2 | 5.7 | 0.13 | 23 | 0.1 |
| Middlesex | 1,503,085 | 5,432 | 3.6 | 7 | 1.3 | 0.05 | 49 | 0.03 |
| Nantucket | 10,172 | 40 | 3.9 | 0 | 0.0 | 0.00 | 0 | 0.0 |
| Norfolk | 670,850 | 2,134 | 3.2 | 4 | 1.9 | 0.06 | 40 | 0.1 |
| Plymouth | 494,919 | 1,626 | 3.3 | 3 | 1.8 | 0.06 | 38 | 0.1 |
| Suffolk | 722,023 | 5,431 | 7.5 | 3 | 0.6 | 0.04 | 88 | 0.1 |
| Worcester | 798,552 | 3,671 | 4.6 | 5 | 1.4 | 0.06 | 86 | 0.1 |
| **Massachusetts** | **6,547,629** | **25,504** | **3.9** | **45** | **1.8** | **0.07** | **551** | **0.1** |

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

# 2018 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 | 60,237 | 59 | 41,404 | 3,463 | 4,682 | 2,574 | 7,597 | 249 | 209 |
| Berkshire | 12,711 | 19 | 6,746 | 794 | 1,826 | 766 | 2,455 | 31 | 74 |
| Bristol | 66,232 | 70 | 41,912 | 3,135 | 4,606 | 4,196 | 11,807 | 154 | 352 |
| Dukes | 1,458 | 2 | 76 | 148 | 72 | 400 | 748 | | 12 |
| Essex | 110,727 | 114 | 62,076 | 5,436 | 15,439 | 8,210 | 18,644 | 487 | 321 |
| Franklin | 8,351 | 22 | 4,811 | 666 | 986 | 640 | 951 | 30 | 245 |
| Hampden | 48,558 | 74 | 30,053 | 1,894 | 3,984 | 4,327 | 8,081 | 27 | 118 |
| Hampshire | 18,177 | 27 | 12,279 | 753 | 951 | 1,014 | 3,046 | 18 | 89 |
| Middlesex | 201,734 | 146 | 117,946 | 11,722 | 21,765 | 12,261 | 32,392 | 420 | 5,082 |
| Nantucket | 2,611 | 4 | 1,296 | 83 | 26 | 71 | 1,123 | 2 | 6 |
| Norfolk | 102,389 | 127 | 62,988 | 6,685 | 10,187 | 6,022 | 14,632 | 305 | 1,443 |
| Plymouth | 92,861 | 81 | 60,875 | 6,164 | 8,430 | 5,763 | 10,554 | 746 | 248 |
| Suffolk | 106,439 | 65 | 52,459 | 4,843 | 17,236 | 10,160 | 20,507 | 43 | 1,126 |
| Worcester | 104,859 | 122 | 68,416 | 4,417 | 9,924 | 7,204 | 13,849 | 116 | 811 |
| Massachusetts | 937,344 | 932 | 563,337 | 50,203 | 100,114 | 63,608 | 146,386 | 2,628 | 10,136 |

[1] WX is the abbreviation for Weather.




MFIRS
Massachusetts Fire Incident Reporting System

Department of Fire Services
www.mass.gov/dfs
(978) 567-3380