

# **Suffolk County**

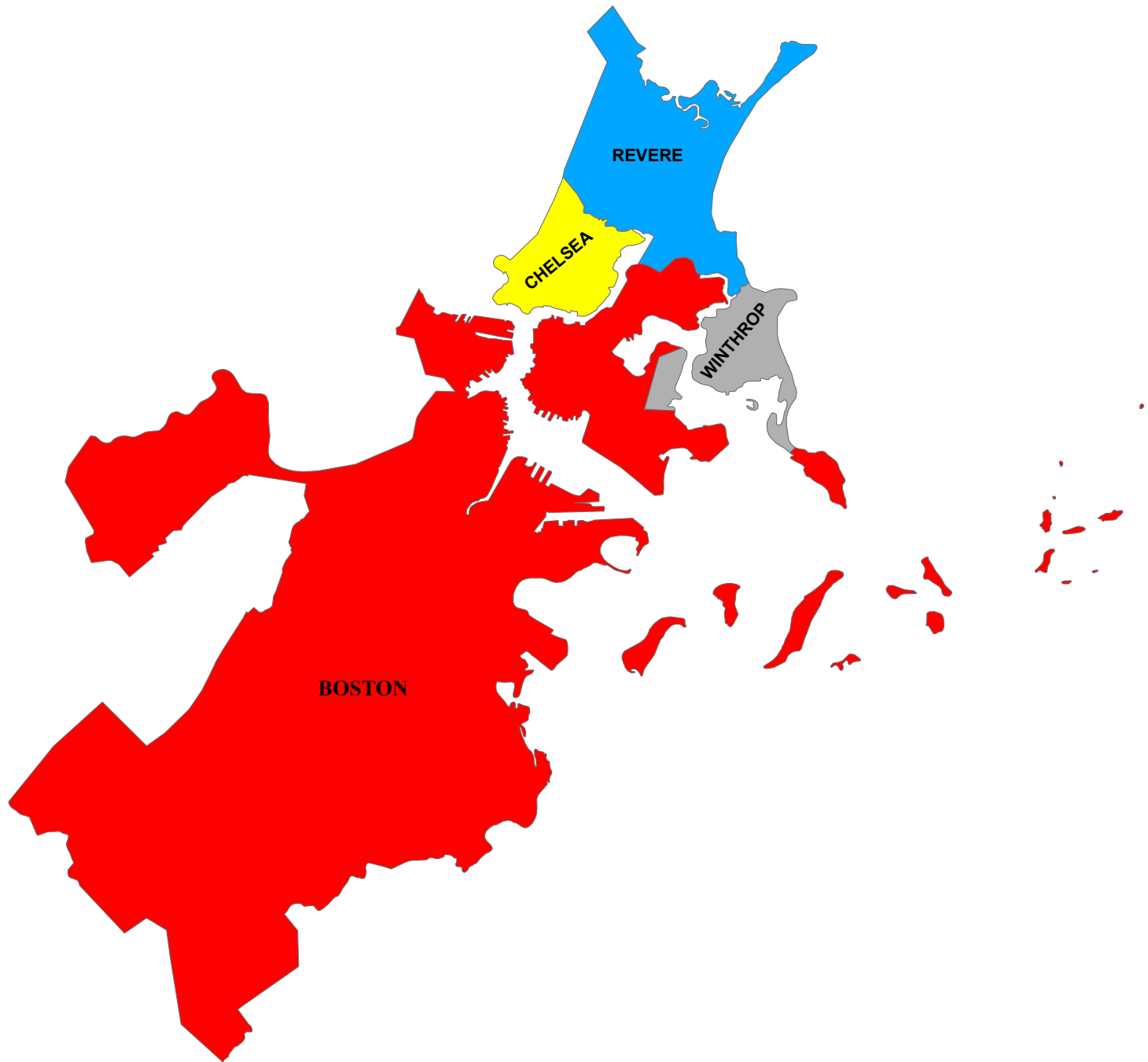
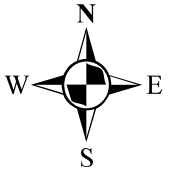
## **2009 Fire Data Analysis**



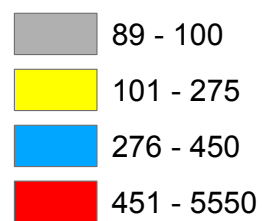
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# Suffolk County Fires 2009



## 2009 Fires



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# Suffolk County Fires in 2009

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## **Boston, Chelsea, Revere & Winthrop Comprise Suffolk County**

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

## **6,386 Total Fires — 4,768 Structures, 475 Vehicles & 1,143 Other Fires**

The four communities in Suffolk County reported a total of 6,386 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2009. The 4,768 structure fires, 475 motor vehicle fires, 662 outside rubbish fires, 331 brush, tree or lawn fires, 106 special outside fires, three cultivated vegetation or crop fires, and 41 other fires caused 13 civilian injuries, 41 fire service injuries and an estimated dollar loss of \$29.5 million. Although 11% of Massachusetts residents live in Suffolk County, these four Suffolk County fire departments reported 22% of the state's 28,595 fires.

## **No Fire Deaths in 2009**

In 2009, for the first time since World War II, Suffolk County did not have any fire-related deaths.<sup>1</sup>

## **Comparing Communities: Rate of Fire/1,000 Population**

The easiest way to compare fire problems from community to community while taking into consideration the size of the community is to compare rates of fire per 1,000 population. Suffolk County had 9.3 fires per 1,000 people in 2009, over two times the statewide rate of 4.5 fires per 1,000 population. Boston had the highest rate at 9.4 fires per 1,000 people in 2009. Winthrop had the lowest rate, 4.9 fires per 1,000 people this year, less than the county average. Revere had the second highest rate of fires per population with 8.8. Chelsea's fire rate per 1,000 population was 7.7.

## **Structure Fires Per 1,000 Population**

Suffolk County had a rate of 6.9 structure fires per 1,000 people in 2009. The community with the highest rate of structure fires per 1,000 population was Revere, having 8.0 structure fires per 1,000 people. Boston had 7.0 structure fires per 1,000 people. Chelsea had 6.0 fires per 1,000 population. Winthrop had the lowest rate of structure fires with 2.5 per 1,000 population. The rate of structure fires per 1,000 people in Massachusetts in 2009 was 2.8. Boston, Chelsea and Revere all experienced a higher than statewide average number of structure fires per 1,000 population.

## **Vehicle Fires Per 1,000 Population**

Suffolk County had 0.69 motor vehicle fires per 1,000 population in 2009. Boston had the highest rate in the county at a rate of 0.72 motor vehicle fires per 1,000 people. Winthrop had the next highest rate at .60 motor vehicle fires per 1,000 people. Chelsea

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<sup>1</sup> Based upon available records.

experienced 0.51 motor vehicle fires per 1,000 population. Revere had the lowest rate of motor vehicle fires per 1,000 population at 0.21. The state's rate was 0.48 motor vehicle fires per 1,000 people in 2009.

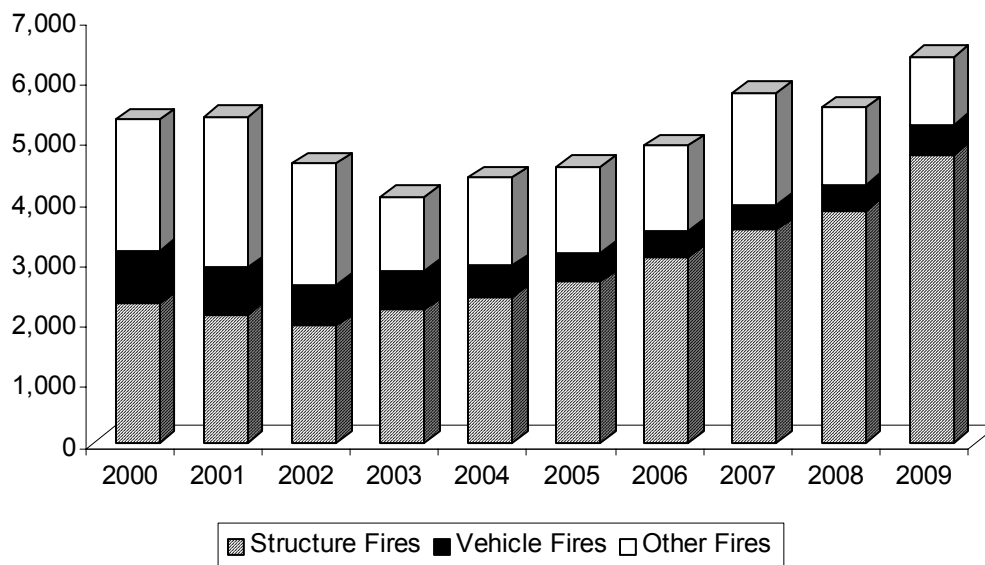
| <b>Town</b>           | <b>Total Fires<br/>Per 1,000 Pop.</b> | <b>Structure Fires<br/>Per 1,000 Pop.</b> | <b>MV Fires<br/>Per 1,000 Pop.</b> | <b>Other Fires<br/>Per 1,000 Pop.</b> |
|-----------------------|---------------------------------------|---|------------------------------------|---------------------------------------|
| <b>Boston</b>         | 9.42                                  | 7.00                                      | 0.72                               | 1.69                                  |
| <b>Chelsea</b>        | 7.73                                  | 5.93                                      | 0.51                               | 1.25                                  |
| <b>Revere</b>         | 8.76                                  | 7.97                                      | 0.21                               | 0.57                                  |
| <b>Winthrop</b>       | 4.86                                  | 2.46                                      | 0.60                               | 1.80                                  |
| <b>Suffolk County</b> | 9.26                                  | 6.91                                      | 0.69                               | 1.66                                  |
| <b>Massachusetts</b>  | 4.50                                  | 2.80                                      | 0.48                               | 1.83                                  |

## STRUCTURE FIRES

### Structure & Motor Vehicle Fires Up in 2009

The total number of reported fires in Suffolk County increased by 850, or 15%, from the 5,536 reported in 2008. Reported structure fires increased 934, or 24%, from 3,834 the previous year. Motor vehicle fires increased by 47, or 11%, from 428 the year before. The total number of reported outside and other fires decreased by 131, or 10%, from 1,274 in 2008.

## Suffolk County Fires by Incident Type



**SUFFOLK COUNTY FIRES FROM 2000 TO 2009**

| <b>Year</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> | <b>Total<br/>Arsons</b> | <b>Structure<br/>Arsons</b> | <b>Vehicle<br/>Arsons</b> | <b>Other<br/>Arsons</b> |
|-------------|------------------------|----------------------------|--------------------------|------------------------|-------------------------|-----------------------------|---------------------------|-------------------------|
| 2000        | 5,341                  | 2,297                      | 866                      | 2,178                  | 384                     | 174                         | 177                       | 33                      |
| 2001        | 5,380                  | 2,115                      | 775                      | 2,490                  | 365                     | 161                         | 172                       | 32                      |
| 2002        | 4,613                  | 1,933                      | 683                      | 1,997                  | 292                     | 154                         | 122                       | 16                      |
| 2003        | 4,060                  | 2,195                      | 636                      | 1,229                  | 192                     | 78                          | 61                        | 53                      |
| 2004        | 4,376                  | 2,401                      | 524                      | 1,451                  | 165                     | 80                          | 54                        | 31                      |
| 2005        | 4,565                  | 2,655                      | 475                      | 1,435                  | 139                     | 70                          | 28                        | 41                      |
| 2006        | 4,911                  | 3,068                      | 445                      | 1,398                  | 154                     | 60                          | 27                        | 67                      |
| 2007        | 5,782                  | 3,517                      | 418                      | 1,857                  | 140                     | 71                          | 16                        | 53                      |
| 2008        | 5,535                  | 3,833                      | 428                      | 1,274                  | 124                     | 49                          | 50                        | 55                      |
| 2009        | 6,386                  | 4,768                      | 475                      | 1,143                  | 129                     | 36                          | 36                        | 57                      |

**BUILDING FIRES**

There were 4,748 building fires of different types in Suffolk County in 2009. These 4,748 building fires accounted for 99.6% of all structure fires in Suffolk County.

**83% of Building Fires in Homes**

The 4,748 building fires that occurred in Suffolk County in 2009 can be broken down by fixed property use as follows: 3,930, or 83% of all reported building fires in 2009, were in residential properties; 240 fires happened in institutional properties; 207 fires took place in mercantile and office properties; 196 fires occurred in public assembly properties; 91 fires occurred in educational properties; 43 fires took place in special properties; 19 fires were in storage properties; 10 occurred in industrial, utility, defense, agricultural or mining facilities; seven were reported in manufacturing properties; and five fires occurred in unclassified buildings.

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

**RESIDENTIAL FIRES****Unattended Cooking Caused 83% of Residential Building Fires**

In 2009, 3,930, or 83%, of the 4,748 building fires in Suffolk County occurred in residential properties. Since this is such a large percentage of the building fires, we focus in on these incidents. The leading cause of residential building fires in Suffolk County was cooking, accounting for 83% of these fires.

Heating fires were the second leading cause of residential building fires in Suffolk County, causing 6% of these fires. Indoor rubbish fires caused 3% of these fires. Electrical problems were responsible for 2% of these fires. Smoking, arson and candles each accounted for 1% of these fires. Juvenile-set fires were responsible for less than 1% of the fires in people's homes in Suffolk County in 2009.

### **91% of Residential Building Fires Are Confined to Non-Combustible Containers<sup>2</sup>**

Three thousand five hundred and sixty-nine (3,569), or 91% of all residential building fires, were reported as confined to non-combustible containers in 2009. Three thousand two hundred and twenty-six (3,226) of the reported fires were cooking fires contained to a non-combustible container accounting for 82% of residential building fires. Two hundred and five (205), or 5%, were fires confined to a fuel burner or boiler malfunction. There were 111 confined indoor rubbish fires, accounting for 3% of the residential building fires in 2009. Twenty-three (23), or 1% of all residential fires, were confined to chimneys or flues. Three (3), or 0.1%, of the residential building fires in Suffolk County, was a confined incinerator overload or malfunction. One (1), or 0.03%, of the residential building fires in Suffolk County, was a confined commercial compactor fire. The number of contained fires increased by 850, or 31%, from the 2,719 reported in 2008.

### **Detectors Alerted Occupants in 80% of Fires**

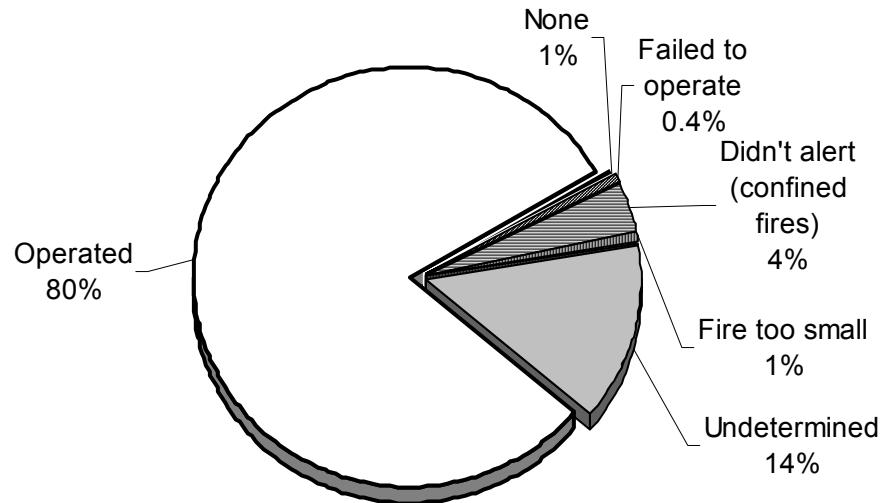
Smoke or heat detectors operated and alerted the occupants in 3,162, or 80%, of the residential building fires. In 4% of these fires<sup>3</sup>, the detectors did not alert the occupants. Detectors were present but did not operate in less than 1% of these incidents. In 1% of these fires, no detectors were present at all. The fire was too small to trigger the detector in another 1% of the residential fires. Smoke detector performance was undetermined in 535 incidents, or 14% of Suffolk County's residential building fires.

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

<sup>3</sup> These represent confined fires where it was reported that the detector did not alert the occupants.

## Detector Status in Suffolk County's Residential Structure Fires 2009



### 1/4 of Failed Detectors Had Dead Batteries

Of the 16 fires where smoke detectors were present but failed to operate, four, or 25%, failed because of dead batteries. Two (2), or 13%, did not operate because of missing or disconnected batteries. Another two detectors, or 13%, failed because from a power failure, shut-off or disconnect; and one detector, or 6%, failed because of a lack of maintenance. For seven cases, or 44%, the reason the detector failed was not determined or classified.

## JUVENILE-SET FIRES

### 15 Juvenile-set Fires

There were 15 reported juvenile-set fires in Suffolk County in 2009. The 10 structure fires, one motor vehicle fire, and four brush fires caused \$142,525 in estimated damages.

## ARSONS

### 129 Arsons<sup>4</sup> —36 Structure Arsons, 36 Vehicle Arsons & 57 Other Arsons

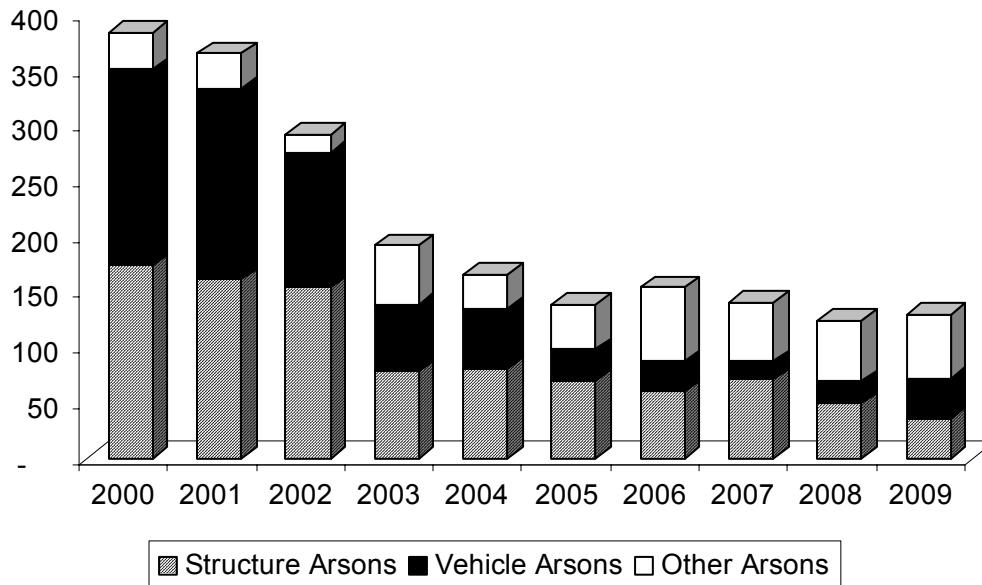
One hundred and twenty-nine (129), or 2%, of Suffolk County's 6,386 fires were considered intentionally set, or for purposes of analysis, arson. The 36 structure arsons,

<sup>4</sup> 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.



36 motor vehicle arsons and 57 outside and other arsons caused an estimated dollar loss of \$2.9 million.

### Suffolk County Arsons by Incident Type



#### Motor Vehicle Arson Increases

The total number of reported arson fires increased by five, or 4%, from the 124 reported in 2008. Structure arson decreased by 13 from the 49 reported a year earlier. Motor vehicle arsons increased by 16 from 20 the previous year. Identified outside and other arson increased by two from 55 the year before. Structure arsons represented 28% of the total arson problem while motor vehicle arson also accounted for 28% of all the 2009 arsons in Suffolk County.

#### Arson Rates Per Population

The community in Suffolk County with the highest rate of arson per population in 2009 was Winthrop with 0.44 arsons per 1,000 people. All of the communities, Suffolk County and the state in general had less than one arson per 1,000 population. For all of Suffolk County, the arson rate was 0.18 per 1,000 population; for the entire Commonwealth it was slightly higher at 0.19 per 1,000 population. Chelsea had the highest rate for structure arsons per 1,000 population with 0.20. Boston, had the highest rate for motor vehicle arsons per 1,000 population of 0.06.

## ALL INCIDENTS

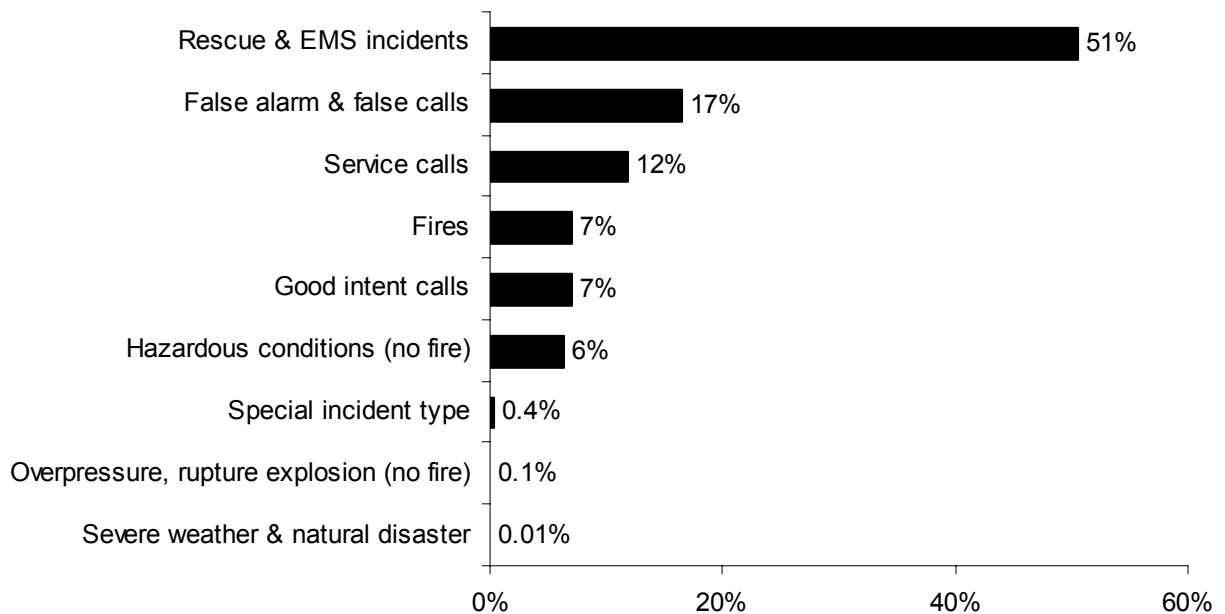
### Rescue & EMS Calls Are Over 1/2 of All Reported Responses

In 2009, fire departments in Suffolk County reported 90,441 total responses to MFIRS. Of these 90,441 incidents, 84,038 non-fire calls were voluntarily reported.

Of these 84,038 non-fire calls, 45,706, or 51% of all the responses reported in 2009, were reported rescue and emergency medical services (EMS) calls<sup>5</sup>; 14,992, or 17%, were reported false alarm or false calls; 10,757, or 12%, were reported service calls such as lock-outs, water or smoke problem, unauthorized burning or public service assistance; 6,330, or 7%, were reported good intent calls; 5,788, or 6%, reported hazardous condition calls with no fire; 356, or 0.4%, were special incident type calls such as citizen complaints; 98, or 0.1%, were reported overpressure, rupture, explosion or overheat calls with no fire; and 11, or 0.01%, were severe weather calls.

Six thousand four hundred and three (6,403), or 7%, of the total responses submitted by Suffolk County fire departments were fires<sup>6</sup>.

### 2009 Responses by Incident Type



<sup>5</sup> The Boston Fire Department does not run any ambulances. Instead they dispatch their companies as first responders to all EMS calls.

<sup>6</sup> This figure includes responses in which Suffolk County fire departments gave mutual aid to another fire department at a fire.

**Suffolk County Fire Departments Reported Giving Mutual Aid 202 Times**

In 2009, Suffolk County fire departments reported coming to the aid of other fire departments 228 times. Of these 202 responses, 149, or 74%, were for service calls such as cover assignments; 17, or 8%, were for fires; 14, or 7%, were for false alarms or false calls; eight, or 4%, were for rescue or EMS incidents; seven, or 3%, were for hazardous condition calls with no fire; six, or 3%, were for good intent calls; and one, or 0.5%, of the mutual aid given calls was for an overpressure, rupture explosion with no ensuing fire.

**Suffolk County Fire Departments Reported Receiving Mutual Aid in 84 Incidents**

In 2009, Suffolk County fire departments reported receiving aid from surrounding departments in 84 incidents. Of these 84 incidents, 43, or 51%, were hazardous conditions calls with no fire; 22, or 26%, were for fires; nine, or 11%, were false alarms or false calls; eight, or 10%, were rescue and emergency medical services calls; one, or 1% was a good intent call; and another incident, or 1%, was a service call.

## The City of Boston

### **5,547 Fires — 4,126 Structure Fires, 426 Vehicle Fires & 995 Other Fires**

The Boston Fire Department reported 4,126 structure fires, 426 motor vehicle fires, 586 outside rubbish fires, 312 grass, tree or brush fires, 95 special outside fires, and two unclassified fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2009. These 5,547 incidents caused eight civilian injuries, 12 fire service injuries and an estimated dollar loss of \$27 million. There were 9.4 fires for every 1,000 citizens in 2009.

### **Structure & Motor Vehicle Fires Up**

The total number of Boston fires reported to the Massachusetts Fire Incident Reporting System increased by 869 from the 4,678 reported in 2008 to 5,547 in 2009. Structure fires increased by 932, motor vehicle fires increased by 39, and outside and other fires decreased by 102. For the seventh year in a row the number of structure fires increased significantly. Motor vehicle fires have been on a downward trend since 1986; however 2009 is the second year of an increase since 1994. Outside and other fires restarted the trend of decreasing since 1996 that was only briefly interrupted in 2001, 2004 and now in 2008. Although fewer than 10% of the state's residents live in the City of Boston, the Boston Fire Department reported 18% of the 28,595 fire incidents reported statewide in 2009.

### **104 Arsons — 25 Structure Arsons, 34 Vehicle Arsons & 45 Other Arsons**

One hundred and four (104), or 2%, of the 5,547 Boston fires were considered intentionally set<sup>7</sup>, or, for purposes of this analysis, arson. The 25 structure arsons, 34 motor vehicle arsons and 45 outside and other arsons caused an estimated dollar loss of \$2.8 million

### **Unattended Cooking Caused 84% of Boston's Residential Fires**

Cooking was the leading cause of the 2,876 fires in Boston residential buildings, accounting for 84% of these fires. Heating equipment was the cause of 5% of these fires. Indoor rubbish fires caused 3% of these fires. Electrical problems accounted for 2% of these fires. Smoking and candles each caused 1% of residential building fires in Boston. Arson and juvenile-set fires each accounted for less than 1% of the fires in Boston residences in 2009.

### **Detectors Alerted Occupants in 87% of Fires**

Smoke or heat detectors operated and alerted the occupants in 2,968, or 87%, of the residential building fires. In 4% of these fires<sup>8</sup>, the detectors did not alert the occupants. Detectors were present but did not operate in less than 1% of these incidents. In 1% of these fires, no detectors were present at all. The fire was too small to trigger the detector

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<sup>7</sup> 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.

<sup>8</sup> These represent confined fires where it was reported that the detector did not alert the occupants.

in another 1% of the residential fires. Smoke detector performance was undetermined in 238 incidents, or 7% of Boston's residential building fires.

### **Largest Loss Fires**

The Boston Fire Department reported three fires with over \$1 million in estimated damages. These three fires totaled \$4 million in damages.

- On July 11, 2009, at 1:11 a.m., the Boston Fire Department was called to an undetermined fire at a seafood warehouse at 400 Dorchester Ave. It was undetermined if detectors or sprinklers were present. The fire originated on the first floor and spread to the second floor. There were no injuries associated with this fire and damages were estimated to be \$2 million.

## **The City of Chelsea**

### **271 Fires — 209 Structure Fires, 18 Vehicle Fires and 44 Other Fires**

The City of Chelsea reported 271 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2009. The 209 structure fires, 18 motor vehicle fires, eight outside rubbish fires, four grass, tree or brush fires, four special outside fires, and 28 unclassified fires caused two civilian injuries, 28 fire service injuries and an estimated dollar loss of \$1.7 million. There were 7.7 fires for every 1,000 citizens in 2009.

### **Structure & Motor Vehicle Fires Increase Slightly**

Total fires increased by four, or 1%, from the 267 fires reported in 2008. Structure fires increased by 18 from the 191 reported in 2008. Motor vehicle fires increased by five, from 13 the previous year. Outside and other fires decreased by 19 from the 63 reported in 2008.

### **11 Arsons — 7 Structure Arsons 1 MV Arson & 3 Other Arsons**

Eleven (11), or 4%, of the 271 Chelsea fires were considered intentionally set, or, for purposes of this analysis, arson<sup>9</sup>. The seven structure arsons, one motor vehicle arson and three outside and other arsons caused an estimated dollar loss of \$14,650.

### **Unsafe Cooking Practices Caused Almost 3/4 of Residential Fires**

Cooking was the leading cause of fires in Chelsea's residential properties in 2009, accounting for 72% of these fires. Heating fires were the second leading cause, accounting for 11% of the fires in people's homes in Chelsea in 2009. Arson caused 3% of residential building fires in Chelsea. Electrical problems accounted for 2% of these fires. Indoor rubbish fires, juvenile-set fires, smoking and candles each caused 1% of the fires in Chelsea residences in 2009.

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<sup>9</sup> 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.

**Detectors Alerted Occupants in Only 29% of Fires**

Smoke or heat detectors operated and alerted the occupants in 51, or 29%, of the residential building fires. In 3% of these fires<sup>10</sup>, the detectors did not alert the occupants. Detectors were present but did not operate in 1% of residential fires. There were no detectors in 1% of these fires. The fire was too small to trigger the detector in 3% of these fires. Smoke detector performance was undetermined in 110 incidents, or 63% of Chelsea's residential building fires.

**Largest Loss Fire in Chelsea**

On January 23, 2009, at 1:05 a.m., the Chelsea Fire Department was dispatched to a fire in a three-unit apartment building of undetermined cause. The fire started on the first floor. There were five firefighter injuries at this fire. It was undetermined if detectors were present. The building was not sprinklered and damages were estimated to be \$380,000.

**The City of Revere****414 Fires — 377 Structure Fires, 10 Vehicle Fires and 27 Other Fires**

The City of Revere reported 414 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2009. The 377 structure fires, 10 motor vehicle fires, 23 outside rubbish fires, and one unclassified fire, caused two civilian injuries, two firefighter injuries and an estimated dollar loss of \$417,650. There were 8.8 fires for every 1,000 citizens in 2009.

**All Fires Down**

The total number of reported fires decreased by 29 from the 443 reported in 2008. Structure fires decreased by 22 from the 399 reported during the previous year. Motor vehicle fires remained the same with 10 reported in both in 2008 and 2009. Reported outside and other fires decreased by seven from 34 the year before.

**3 Arson — 3 Structure Arsons**

Three (3), or 1%, of Revere's 414 reported fires were considered intentionally set, or for purposes of this analysis, arson<sup>11</sup>. There were three reported structure arsons in 2009.

**Unsafe Cooking Causes Almost 83% of Residential Fires**

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<sup>10</sup> These represent confined fires where it was reported that the detector did not alert the occupants.

<sup>11</sup> In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

Cooking was the leading cause of fires in Revere's residential properties in 2009, accounting for 83% of these fires. Heating equipment caused 10% of residential building fires in 2009. Indoor rubbish fires were responsible for 2% of these fires. Arson, electrical problems and smoking each caused 1% of these fires. Candles accounted for less than 1% of the residential building fires in Revere in 2009.

#### **Detectors Alerted Occupants in 46% of Fires**

Smoke or heat detectors operated and alerted the occupants in 141, or 46%, of the residential building fires. In 3% of these fires<sup>12</sup>, the detectors did not alert the occupants. Detectors were present but did not operate in 0.3% of these incidents. In 2% of these fires, no detectors were present at all. There were no fires reported where the fire was too small to trigger a detector. Smoke detector performance was undetermined in 154 incidents, or 49% of Revere's residential building fires.

#### **Largest Loss Fire In Revere**

- At 10:22 a.m., on February 17, 2009, the Revere Fire Department was called to a smoking fire in an apartment building. Someone discarded a cigarette into a waste basket. One firefighter was injured at this fire. Smoke detectors were present and alerted the occupants and the building was not sprinklered. Damages from this blaze were estimated to be \$90,000.

## **The Town of Winthrop**

#### **89 Fires — 45 Structure Fires, 11 Vehicle Fires and 33 Other Fires**

The Town of Winthrop reported 89 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2009. The 45 structure fires, 11 motor vehicle fires, 13 outside rubbish fires, seven brush and grass fires, six special outside fires; and seven unclassified fires caused one civilian injury and an estimated dollar loss of \$382,937. There were 4.9 fires for every 1,000 citizens in 2009.

#### **All Fires Up**

The total number of fires reported in Winthrop increased by 21 from 68 in 2008. Structure fires increased nine from the 36 reported in 2008. Motor vehicle fires increased by seven from four in 2008. Outside and other fires increased five from 28 in 2008.

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<sup>12</sup> These represent confined fires where it was reported that the detector did not alert the occupants.

**8 Arsons – 1 Structure Arson 1 MV Arson & 6 Outside & Other Arsons**

Eight (8), or 9%, of the 89 Winthrop fires were considered intentionally set, or, for purposes of this analysis, arson<sup>13</sup>. The one structure arson, one motor vehicle arson and six outside and other arsons caused \$31,400.

**Unsafe Cooking Practices Caused Over 1/2 of Winthrop's Residential Fires**

Cooking was the leading cause of fires in Winthrop residential properties in 2009 accounting for 54%. Heating equipment fires were the second leading cause, accounting for 23% of the fires in Winthrop's homes 2009.

**Detectors Alerted Occupants in Only 5% of Fires**

Smoke or heat detectors operated and alerted the occupants in two, or 5%, of the residential building fires. There were no reported fires<sup>14</sup>, where the detectors did not alert the occupants. Detectors were present but did not operate in 3% of these fires. In another 3% of these fires, no detectors were present at all. In 5% of reported fires the fire was too small to trigger the detector. Smoke detector performance was undetermined in 33 incidents, or 84% of Winthrop's residential building fires.

**Largest Loss Fire in Winthrop**

- On July 4, 2009, at 1:46 a.m., the Winthrop Fire Department was called to a fire at a two-family home. The fire began in the ceiling and floor assembly between the second and third floors. There were no injuries associated with this fire. Detectors were present and alerted the occupants. The building was not sprinklered. Damages from this fire were estimated to be \$65,000.

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<sup>13</sup> 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.

<sup>14</sup> These represent confined fires where it was reported that the detector did not alert the occupants.



**Suffolk County****Population: 689,807****9.3 Fires/1,000 Population****Total Fires: 6,386 \$29,517,460**

| <b>Situation</b> | <b>Fires</b> | <b>% of Fires</b> | <b>Dollar Loss</b> |
|------------------|--------------|-------------------|--------------------|
| Structure Fires  | 4,768        | 75%               | \$26,151,537       |
| Vehicle Fires    | 475          | 7%                | 3,274,486          |
| Other Fires      | 1,143        | 18%               | 91,437             |

No Fire Deaths

13 Civilian Injuries 41 Fire Service Injuries

**Building Fires: 4,748****Residential Building Fires: 3,930****Residential Building Fires Confined to Non-Combustible Containers: 3,569****Unconfined Residential Building Fires: 361**

11 Civilian Injuries 33 Fire Service Injuries

| <b>Occupancy</b>         | <b>Fires</b> | <b>%</b> | <b>Detector Status</b>  | <b>Fires</b> | <b>%</b> |
|--------------------------|--------------|----------|-------------------------|--------------|----------|
| Apartments               | 2,690        | 68%      | Operated                | 3,162        | 80%      |
| 1- & 2-Family homes      | 608          | 15%      | Didn't operate          | 16           | 0.4%     |
| Dormitories              | 183          | 5%       | None                    | 31           | 1%       |
| Rooming houses           | 109          | 3%       | Fire too small          | 30           | 1%       |
| Residential board & care | 42           | 1%       | Didn't Alert (confined) | 156          | 4%       |
| Hotel/motel              | 39           | 1%       | Undetermined            | 535          | 14%      |

| <b>Area of Origin<sup>15</sup></b> | <b>%</b> | <b>Heat Source</b>           | <b>%</b> | <b>%Unconfined<sup>16</sup></b> |
|------------------------------------|----------|------------------------------|----------|---------------------------------|
| Kitchen                            | 85%      | Radiated heat from oper. eq. | 2%       | 20%                             |
| Heating room or area               | 5%       | Heat from operating equip.   | 1%       | 14%                             |
| Bedroom                            | 1%       | Arcing                       | 1%       | 9%                              |
| Chimney or flue                    | 1%       | Hot or smoldering object     | 1%       | 6%                              |
| Function room, other               | 0.4%     | Cigarette                    | 1%       | 6%                              |
| Bathroom                           | 0.4%     | Candle                       | 1%       | 6%                              |

<sup>15</sup> This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

<sup>16</sup> These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Heat Source from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires, but is sometimes voluntarily reported.

| <b>Item First Ignited<sup>17</sup></b> | <b>%</b> | <b>Factor Contrib. to Ignit.</b> | <b>%</b> | <b>%Unconfined<sup>18</sup></b> |
|--|----------|----------------------------------|----------|---------------------------------|
| Food, cooking materials                | 83%      | Too close to combustibles        | 1%       | 13%                             |
| Flammable, combustible liquid          | 5%       | Abandoned materials              | 1%       | 12%                             |
| Rubbish, trash, waste                  | 3%       | Equipment unattended             | 1%       | 10%                             |
| Electrical wire, cable insulation      | 1%       | Misuse of materials              | 1%       | 9%                              |
| Structural member, framing             | 1%       | Unspecified short-circuit arc    | 1%       | 6%                              |

| <b>Equipment<sup>19</sup></b>    | <b>%</b> | <b>Cause of Ignition</b>      | <b>%</b> | <b>%Unconfined<sup>20</sup></b> |
|----------------------------------|----------|-------------------------------|----------|---------------------------------|
| Cooking equipment                | 82%      | Unintentional                 | 6%       | 62%                             |
| None                             | 9%       | Failure of eq. or heat source | 1%       | 14%                             |
| Boiler, furnace, cent. heat unit | 5%       | Intentional                   | 1%       | 6%                              |
| Chimney or flue                  | 1%       | Act of nature                 | 0.1%     | 1%                              |
| Fan                              | 0.05%    | Undetermined                  | 1%       | 7%                              |
|                                  |          | Cause under investigation     | 1%       | 8%                              |

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

|                        |     |
|------------------------|-----|
| Alerted Occupants      | 83% |
| Didn't Alert Occupants | 4%  |
| Undetermined           | 13% |

<sup>17</sup> This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

<sup>18</sup> Some fields in version 5 allow for multiple entries. Therefore the number of entries may be greater than the actual number of incidents being analyzed. These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Factors Contributing to Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

<sup>19</sup> This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

<sup>20</sup> These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Cause of Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

| <b>Month</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|--------------|------------------------|----------------------------|--------------------------|------------------------|
| January      | 393                    | 333                        | 33                       | 27                     |
| February     | 417                    | 343                        | 35                       | 39                     |
| March        | 520                    | 394                        | 41                       | 85                     |
| April        | 542                    | 348                        | 34                       | 160                    |
| May          | 513                    | 336                        | 29                       | 148                    |
| June         | 434                    | 324                        | 38                       | 72                     |
| July         | 440                    | 287                        | 43                       | 110                    |
| August       | 369                    | 243                        | 43                       | 83                     |
| September    | 468                    | 322                        | 45                       | 101                    |
| October      | 508                    | 424                        | 29                       | 55                     |
| November     | 464                    | 367                        | 23                       | 74                     |
| December     | 479                    | 405                        | 33                       | 41                     |

| <b>Day</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|------------|------------------------|----------------------------|--------------------------|------------------------|
| Sunday     | 855                    | 643                        | 49                       | 163                    |
| Monday     | 736                    | 532                        | 67                       | 137                    |
| Tuesday    | 726                    | 547                        | 58                       | 121                    |
| Wednesday  | 763                    | 578                        | 61                       | 124                    |
| Thursday   | 800                    | 588                        | 81                       | 131                    |
| Friday     | 802                    | 589                        | 59                       | 154                    |
| Saturday   | 865                    | 649                        | 51                       | 165                    |

| <b>Time</b>   | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|---------------|------------------------|----------------------------|--------------------------|------------------------|
| 00:01 - 04:00 | 482                    | 298                        | 59                       | 125                    |
| 04:01 - 08:00 | 347                    | 262                        | 39                       | 46                     |
| 08:01 - 12:00 | 865                    | 702                        | 73                       | 90                     |
| 12:01 - 16:00 | 1,221                  | 913                        | 75                       | 233                    |
| 16:01 - 20:00 | 1,492                  | 1,164                      | 93                       | 235                    |
| 20:01 - 00:00 | 1,140                  | 787                        | 87                       | 266                    |

### **Motor Vehicle Fires**

Total: 475

Automobiles: 428 (90%)

34 (8%) of the automobile fires considered intentionally set.

**Arson Fires****Total Arsons: 129****Dollar loss: \$2,884,950****0.19 Arson Fires/1,000 Population**

| <b>Situation</b> | <b>Arsons</b> | <b>% Situation</b> | <b>% Arson</b> | <b>Dollar Loss</b> |
|------------------|---------------|--------------------|----------------|--------------------|
| Structure Arsons | 36            | 1%                 | 28%            | \$2,114,000        |
| Vehicle Arsons   | 36            | 8%                 | 28%            | 764,400            |
| Other Arsons     | 57            | 5%                 | 44%            | 6,550              |

0.05 Structure arsons/1,000 population

0.05 Vehicle arsons /1,000 population

0.08 Other arsons/1,000 population

No Injuries

**Peak Times of Day for:**

| <b>Structure Arsons</b> | <b>#</b> | <b>%</b> | <b>Vehicle Arsons</b> | <b>#</b> | <b>%</b> |
|-------------------------|----------|----------|-----------------------|----------|----------|
| 20:01 - 00:00           | 11       | 31%      | 04:01 - 08:00         | 11       | 31%      |
| 00:01 - 04:00           | 7        | 19%      | 00:01 - 04:00         | 10       | 28%      |
| 04:01 - 08:00           | 5        | 14%      | 20:01 - 00:00         | 7        | 19%      |
| 12:01 - 16:00           | 5        | 14%      |                       |          |          |
| 16:01 - 20:00           | 5        | 14%      |                       |          |          |

| <b>Other Arsons</b> | <b>#</b> | <b>%</b> |
|---------------------|----------|----------|
| 20:01 - 00:00       | 21       | 37%      |
| 16:01 - 20:00       | 14       | 25%      |
| 12:01 - 16:00       | 11       | 37%      |

| <b>Peak Fixed Property Uses for Structure Arsons</b> | <b>#</b> | <b>%</b> |
|--|----------|----------|
| 1- & 2-Family homes                                  | 11       | 31%      |
| Apartments   | 9        | 25%      |
| Outside or special property, other                   | 4        | 6%       |

**BOSTON FIRES FROM 2005 TO 2009****POPULATION: 589,141**

|      | <b>Total</b> | <b>Structure</b> | <b>Vehicle</b> | <b>Other</b> | <b>Total</b> | <b>Structure</b> | <b>Vehicle</b> | <b>Other</b> |
|------|--------------|------------------|----------------|--------------|--------------|------------------|----------------|--------------|
| 2005 | 3,874        | 2,238            | 397            | 1,239        | 118          | 62               | 24             | 32           |
| 2006 | 3,971        | 2,432            | 379            | 1,160        | 94           | 46               | 22             | 26           |
| 2007 | 4,768        | 2,910            | 347            | 1,097        | 107          | 53               | 14             | 40           |
| 2008 | 4,678        | 3,194            | 387            | 1,097        | 109          | 45               | 20             | 44           |
| 2009 | 5,547        | 4,126            | 426            | 995          | 104          | 25               | 34             | 45           |

**CHELSEA FIRES FROM 2005 TO 2009****POPULATION: 35,080**

| <b>Year</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> | <b>Total<br/>Arsons</b> | <b>Structure<br/>Arsons</b> | <b>Vehicle<br/>Arsons</b> | <b>Other<br/>Arsons</b> |
|-------------|------------------------|----------------------------|--------------------------|------------------------|-------------------------|-----------------------------|---------------------------|-------------------------|
| 2005        | 181                    | 141                        | 14                       | 26                     | 1                       | 0                           | 0                         | 1                       |
| 2006        | 268                    | 187                        | 25                       | 56                     | 16                      | 6                           | 1                         | 9                       |
| 2007        | 326                    | 212                        | 23                       | 91                     | 16                      | 11                          | 0                         | 5                       |
| 2008        | 266                    | 190                        | 13                       | 63                     | 7                       | 2                           | 0                         | 5                       |
| 2009        | 271                    | 209                        | 18                       | 44                     | 11                      | 7                           | 1                         | 3                       |

**REVERE FIRES FROM 2005 TO 2009****POPULATION: 47,283**

| <b>Year</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> | <b>Total<br/>Arsons</b> | <b>Structure<br/>Arsons</b> | <b>Vehicle<br/>Arsons</b> | <b>Other<br/>Arsons</b> |
|-------------|------------------------|----------------------------|--------------------------|------------------------|-------------------------|-----------------------------|---------------------------|-------------------------|
| 2005        | 339                    | 195                        | 40                       | 104                    | 13                      | 7                           | 4                         | 2                       |
| 2006        | 536                    | 385                        | 29                       | 122                    | 31                      | 6                           | 4                         | 21                      |
| 2007        | 486                    | 327                        | 26                       | 133                    | 6                       | 4                           | 2                         | 0                       |
| 2008        | 443                    | 399                        | 10                       | 34                     | 1                       | 1                           | 0                         | 0                       |
| 2009        | 414                    | 377                        | 10                       | 27                     | 3                       | 3                           | 0                         | 0                       |

**WINTHROP FIRES FROM 2005 TO 2009****POPULATION: 18,303**

| <b>Year</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> | <b>Total<br/>Arsons</b> | <b>Structure<br/>Arsons</b> | <b>Vehicle<br/>Arsons</b> | <b>Other<br/>Arsons</b> |
|-------------|------------------------|----------------------------|--------------------------|------------------------|-------------------------|-----------------------------|---------------------------|-------------------------|
| 2005        | 108                    | 69                         | 8                        | 31                     | 7                       | 1                           | 0                         | 6                       |
| 2006        | 96                     | 54                         | 2                        | 40                     | 13                      | 2                           | 0                         | 11                      |
| 2007        | 102                    | 54                         | 5                        | 43                     | 11                      | 3                           | 0                         | 8                       |
| 2008        | 68                     | 36                         | 4                        | 28                     | 7                       | 1                           | 0                         | 6                       |
| 2009        | 89                     | 45                         | 11                       | 33                     | 8                       | 1                           | 1                         | 6                       |

## Suffolk County Fire Experience By Community For 2009

|                                      | Boston       | Chelsea    | Revere     | Winthrop  | Suffolk<br>County* | State         |
|--------------------------------------|--------------|------------|------------|-----------|--------------------|---------------|
| <b>Total Fires</b>                   | <b>5,547</b> | <b>271</b> | <b>414</b> | <b>89</b> | <b>6,386</b>       | <b>28,595</b> |
| Population                           | 589,141      | 35,080     | 47,283     | 18,303    | 689,807            | 6,349,097     |
| Rate/1K Pop.                         | 9.4          | 7.7        | 8.8        | 4.9       | 9.3                | 4.5           |
| Civilian Deaths                      | 0            | 0          | 0          | 0         | 0                  | 36            |
| Civ. Deaths/10K Pop.                 | 0            | 0          | 0          | 0         | 0                  | 0.06          |
| Fire Service Deaths                  | 0            | 0          | 0          | 0         | 0                  | 0             |
| Civilian Injuries                    | 8            | 2          | 2          | 1         | 41                 | 332           |
| Civ. Inj./1K Pop.                    | 0.01         | 0.06       | 0.04       | 0.05      | 0.05               | 0.02          |
| Fire Service Injuries                | 12           | 28         | 2          | 0         | 70                 | 460           |
| Est. \$ Loss                         | \$27,024,722 | 1,687,151  | 417,650    | 382,937   | 29,517,460         | 183,095,805   |
| <b>Structure Fires</b>               | <b>4,126</b> | <b>209</b> | <b>377</b> | <b>45</b> | <b>4,768</b>       | <b>17,773</b> |
| Structure Fires/<br>1,000 Population | 7.0          | 6.0        | 8.0        | 2.5       | 6.9                | 0.9           |
| Structure Fires<br>Dollar Loss       | \$23,890,426 | 1,565,051  | 417,650    | 382,937   | 26,151,537         | 166,915,445   |
| Residential<br>Building Fires        | 3,407        | 175        | 309        | 39        | 3,172              | 14,668        |
| Confined Fires                       | 3,110        | 144        | 287        | 28        | 2,719              | 11,931        |
| <b>Vehicle Fires</b>                 | <b>426</b>   | <b>18</b>  | <b>10</b>  | <b>11</b> | <b>475</b>         | <b>3,069</b>  |
| Vehicle Fires<br>1,000 Population    | 0.7          | 0.5        | 0.2        | 0.6       | 0.7                | 0.5           |
| Vehicle Fire<br>Dollar Loss          | \$3,076,786  | 111,950    | 10,750     | 75,000    | 3,274,486          | 13,255,428    |
| <b>Other Fires</b>                   | <b>995</b>   | <b>44</b>  | <b>27</b>  | <b>33</b> | <b>1,143</b>       | <b>7,753</b>  |
| Other Fires<br>Dollar Loss           | \$57,510     | 10,150     | 9,100      | 14,677    | 91,437             | 2,924,932     |

\*This figure includes 65 incidents reported by Massport Fire-Rescue. There were 11 structure fires, 10 vehicle fires and 44 outside and other fires.

## Suffolk County Arson Experience By Community For 2009

|  | Boston      | Chelsea    | Revere   | Winthrop | Suffolk<br>County* | State        |
|--|-------------|------------|----------|----------|--------------------|--------------|
| <b>Total Arsons</b>                                | <b>104</b>  | <b>117</b> | <b>3</b> | <b>8</b> | <b>129</b>         | <b>1,184</b> |
| Population   | 574,283     | 28,710     | 42,786   | 18,127   | 663,906            | 6,349,097    |
| Rate/1,000 Population                              | 0.18        | 0.31       | 0.06     | 0.44     | 0.18               | 0.19         |
| Civilian Deaths                                    | 0           | 0          | 0        | 0        | 0                  | 8            |
| Fire Service Deaths                                | 0           | 0          | 0        | 0        | 0                  | 0            |
| Civilian Injuries                                  | 0           | 0          | 0        | 0        | 0                  | 19           |
| Fire Service Injuries                              | 0           | 0          | 0        | 0        | 0                  | 19           |
| Est. \$ Loss                                       | \$2,838,400 | 14,650     | 500      | 31,400   | 2,884,950          | 11,935,530   |
| <b>Structure Arsons</b>                            | <b>25</b>   | <b>7</b>   | <b>3</b> | <b>1</b> | <b>36</b>          | <b>291</b>   |
| Structure Arsons/<br>1,000 Population              | 0.04        | 0.20       | 0.06     | 0.05     | 0.05               | 0.05         |
| Structure Arson<br>Dollar Loss                     | \$2,103,700 | 9,600      | 500      | 200      | 2,114,000          | 10,308,805   |
| % of Structure Fires Caused<br>by Arson            | 1%          | 3%         | 1%       | 2%       | 1%                 | 2%           |
| % of Structure Fire Dollar Loss<br>Caused by Arson | 9%          | 1%         | 0.1%     | 0.1%     | 8%                 | 6%           |
| Residential<br>Building Arsons                     | 15          | 5          | 3        | 0        | 23                 | 186          |
| <b>Vehicle Arsons</b>                              | <b>34</b>   | <b>1</b>   | <b>0</b> | <b>1</b> | <b>36</b>          | <b>188</b>   |
| Vehicle Arsons/<br>1,000 Population                | 0.06        | 0.03       | 0        | 0.05     | 0.05               | 0.03         |
| Vehicle Arson<br>Dollar Loss                       | \$729,400   | 5,000      | 0        | 30,000   | 764,400            | 1,549,295    |
| % of Vehicle Fires<br>Caused by Arson              | 8%          | 6%         | 0%       | 9%       | 8%                 | 6%           |
| % of Vehicle Fire Dollar Loss<br>Caused by Arson   | 24%         | 4%         | 0%       | 40%      | 23%                | 12%          |
| <b>Other Arsons</b>                                | <b>45</b>   | <b>3</b>   | <b>0</b> | <b>6</b> | <b>57</b>          | <b>705</b>   |
| Other Arson<br>Dollar Loss                         | \$5,300     | 50         | 0        | 1,200    | 6,550              | 77,430       |

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

## 2009 Suffolk County Structure Fires By Property Use<sup>21</sup>

| Property Use                        | Boston     | Chelsea  | Revere    | Winthrop | Suffolk County |
|-------------------------------------|------------|----------|-----------|----------|----------------|
| <b>Assembly</b>                     | <b>158</b> | <b>6</b> | <b>24</b> | <b>2</b> | <b>197</b>     |
| Assembly, other                     | 7          | 0        | 0         | 0        | 7              |
| Fixed use recreation places, other  | 3          | 0        | 0         | 0        | 3              |
| Electronic amusement center         | 2          | 0        | 0         | 0        | 2              |
| Variable use amusement, rec. places | 1          | 0        | 0         | 0        | 1              |
| Ballroom, gymnasium                 | 2          | 0        | 1         | 0        | 3              |
| Convention center, exhibition hall  | 1          | 0        | 0         | 0        | 1              |
| Stadium, arena                      | 3          | 0        | 0         | 0        | 3              |
| Playground                          | 0          | 1        | 0         | 0        | 1              |
| Places of worship, funeral parlors  | 1          | 0        | 0         | 0        | 1              |
| Church, mosque, synagogue, temple,  | 11         | 2        | 2         | 0        | 15             |
| Funeral parlor                      | 1          | 0        | 0         | 0        | 1              |
| Clubs, other                        | 0          | 0        | 1         | 0        | 1              |
| Athletic/health club                | 1          | 0        | 0         | 0        | 1              |
| Clubhouse                           | 3          | 0        | 1         | 0        | 4              |
| Yacht Club                          | 4          | 0        | 0         | 0        | 4              |
| Casino, gambling clubs              | 0          | 0        | 1         | 0        | 1              |
| Public or government, other         | 2          | 0        | 0         | 0        | 2              |
| Museum                              | 2          | 0        | 0         | 0        | 2              |
| Courthouse                          | 2          | 0        | 0         | 0        | 2              |
| Eating, drinking places             | 22         | 0        | 0         | 2        | 24             |
| Restaurant or cafeteria             | 65         | 3        | 14        | 0        | 82             |
| Bar or nightclub                    | 7          | 0        | 3         | 0        | 10             |
| Airport passenger terminal          | 0          | 0        | 0         | 0        | 7              |
| Bus station                         | 1          | 0        | 0         | 0        | 1              |
| Rapid transit station               | 15         | 0        | 1         | 0        | 16             |
| Studio/theater, other               | 1          | 0        | 0         | 0        | 1              |
| Movie theater                       | 1          | 0        | 0         | 0        | 1              |
| <b>Educational</b>                  | <b>88</b>  | <b>0</b> | <b>2</b>  | <b>1</b> | <b>91</b>      |
| Educational, other                  | 21         | 0        | 0         | 0        | 21             |
| Schools, non-adult                  | 3          | 0        | 2         | 0        | 5              |
| Preschool                           | 10         | 0        | 0         | 0        | 10             |
| Elementary school                   | 12         | 0        | 0         | 0        | 12             |
| High/junior high/middle school      | 13         | 0        | 0         | 1        | 14             |
| Adult education, college classroom  | 18         | 0        | 0         | 0        | 18             |
| Day care, in commercial property    | 11         | 0        | 0         | 0        | 11             |

<sup>21</sup> The Suffolk County figures include 11 Massport fires: 9 Assembly properties, 1 Mercantile or Business property & 1 Storage facility.



## 2009 Suffolk County Structure Fires By Property Use

| Property Use                             | Boston       | Chelsea    | Revere     | Winthrop  | Suffolk<br>County |
|--|--------------|------------|------------|-----------|-------------------|
| <b>Institutional</b>                     | <b>219</b>   | <b>9</b>   | <b>13</b>  | <b>0</b>  | <b>241</b>        |
| Health care, detention, & corr., other   | 33           | 0          | 0          | 0         | 33                |
| Nursing homes, 4+ persons                | 31           | 6          | 12         | 0         | 49                |
| Mental retard./dev. disability facility  | 17           | 1          | 0          | 0         | 18                |
| Alcohol/substance abuse recov.ctr.       | 41           | 1          | 0          | 0         | 42                |
| Hospital - medical or psychiatric        | 73           | 0          | 0          | 0         | 73                |
| Hospices                                 | 2            | 0          | 0          | 0         | 2                 |
| Clinics, Dr. offices, hemodialysis ctrs. | 5            | 0          | 0          | 0         | 5                 |
| Clinic, clinic-type infirmary            | 1            | 1          | 0          | 0         | 2                 |
| Doctor, dentist or oral surgeon's office | 5            | 0          | 1          | 0         | 6                 |
| Jail, prison (not juvenile)              | 4            | 0          | 0          | 0         | 4                 |
| Reformatory, juvenile detention center   | 3            | 0          | 0          | 0         | 3                 |
| Police station                           | 4            | 0          | 0          | 0         | 4                 |
| <b>Residential</b>                       | <b>3,412</b> | <b>176</b> | <b>309</b> | <b>40</b> | <b>3,937</b>      |
| Residential, other                       | 256          | 3          | 0          | 0         | 259               |
| 1 or 2 family dwelling                   | 451          | 21         | 117        | 21        | 610               |
| Multifamily dwellings                    | 2,351        | 140        | 185        | 19        | 2,695             |
| Boarding/rooming house,                  | 101          | 8          | 0          | 0         | 109               |
| Hotel/motel, commercial                  | 32           | 0          | 7          | 0         | 39                |
| Residential board and care               | 38           | 4          | 0          | 0         | 42                |
| Dormitory type residence, other          | 169          | 0          | 0          | 0         | 169               |
| Sorority house, fraternity house         | 14           | 0          | 0          | 0         | 14                |
| <b>Mercantile, business</b>              | <b>185</b>   | <b>8</b>   | <b>14</b>  | <b>1</b>  | <b>208</b>        |
| Mercantile, business, other              | 62           | 0          | 0          | 1         | 63                |
| Convenience store                        | 8            | 0          | 2          | 0         | 10                |
| Food & beverage sales, grocery store     | 40           | 2          | 2          | 0         | 44                |
| Textile, wearing apparel sales           | 4            | 0          | 0          | 0         | 4                 |
| Specialty shop                           | 7            | 0          | 0          | 0         | 7                 |
| Pers. Serv., incl. Barber, beauty shops  | 6            | 0          | 1          | 0         | 7                 |
| Laundry, dry cleaning                    | 5            | 1          | 0          | 0         | 6                 |
| Professional supplies, services          | 6            | 0          | 0          | 0         | 6                 |
| Service station, gas station             | 0            | 1          | 1          | 0         | 2                 |
| MV or boat sales, services, repair       | 2            | 0          | 0          | 0         | 2                 |
| General retail, other                    | 0            | 0          | 3          | 0         | 3                 |
| Department or discount store             | 2            | 0          | 0          | 0         | 2                 |
| Bank                                     | 5            | 0          | 1          | 0         | 6                 |
| Office: veterinary or research           |              | 1          | 0          | 0         | 0                 |
| 1  |              |            |            |           |                   |
| Post office or mailing firms             | 1            | 0          | 0          | 0         | 1                 |
| Business office                          | 36           | 4          | 4          | 0         | 44                |

## 2009 Suffolk County Structure Fires By Property Use<sup>22</sup>

| Property Use                                 | Boston       | Chelsea    | Revere     | Winthrop  | Suffolk County |
|--|--------------|------------|------------|-----------|----------------|
| <b>Utility, defense, agriculture, mining</b> | <b>9</b>     | <b>1</b>   | <b>0</b>   | <b>0</b>  | <b>10</b>      |
| Electric generating plant                    | 1            | 0          | 0          | 0         | 1              |
| Laboratory or science laboratory             | 4            | 0          | 0          | 0         | 4              |
| Communications center                        | 2            | 0          | 0          | 0         | 2              |
| Electrical distribution                      | 2            | 0          | 0          | 0         | 2              |
| Sanitation utility                           | 0            | 1          | 0          | 0         | 1              |
| <b>Manufacturing, processing</b>             | <b>7</b>     | <b>0</b>   | <b>0</b>   | <b>0</b>  | <b>7</b>       |
| <b>Storage</b>                               | <b>12</b>    | <b>3</b>   | <b>1</b>   | <b>1</b>  | <b>21</b>      |
| Storage, other                               | 1            | 0          | 0          | 1         | 2              |
| Outside material storage area                | 1            | 0          | 0          | 0         | 1              |
| Vehicle storage, other                       | 1            | 0          | 0          | 0         | 4              |
| Parking garage (det. res. garage)            | 5            | 0          | 0          | 0         | 5              |
| Fire station                                 | 0            | 0          | 1          | 0         | 2              |
| Warehouse                                    | 2            | 3          | 0          | 0         | 5              |
| Residential or self storage units            | 2            | 0          | 0          | 0         | 2              |
| <b>Outside or special property</b>           | <b>28</b>    | <b>5</b>   | <b>14</b>  | <b>0</b>  | <b>47</b>      |
| <b>Property Use, other</b>                   | <b>8</b>     | <b>1</b>   | <b>0</b>   | <b>0</b>  | <b>9</b>       |
| <b>Total Structure Fires</b>                 | <b>4,126</b> | <b>209</b> | <b>377</b> | <b>45</b> | <b>4,768</b>   |

## 2009 Suffolk County Responses<sup>23</sup> by Incident Type

| Incident Type                              | Boston | Chelsea | Revere | Winthrop | Massport Fire Rescue | Suffolk County |
|--|--------|---------|--------|----------|----------------------|----------------|
| Fires                                      | 5,548  | 271     | 417    | 89       | 78                   | 6,403          |
| Overpressure, rupture, explosion (no fire) | 62     | 15      | 2      | 3        | 16                   | 98             |
| Rescue & EMS calls                         | 30,981 | 5,472   | 5,472  | 1,691    | 2,090                | 45,706         |
| Hazardous conditions (no fire)             | 4,806  | 340     | 175    | 172      | 295                  | 5,788          |
| Service calls                              | 9,050  | 605     | 640    | 396      | 66                   | 10,757         |
| Good intent calls                          | 5,341  | 336     | 412    | 171      | 70                   | 6,330          |
| False alarm & false calls                  | 12,860 | 837     | 805    | 269      | 221                  | 14,992         |
| Severe weather & natural disaster          | 9      | 1       | 0      | 1        | 0                    | 11             |

<sup>22</sup> The Suffolk County figures include 10 Massport fires: 7 Terminals, 2 Vehicle storage, & 1 Fire station.

<sup>23</sup> These figures include mutual or automatic aid given calls.

|                       |     |    |    |   |   |     |
|-----------------------|-----|----|----|---|---|-----|
| Special incident type | 297 | 27 | 15 | 9 | 8 | 356 |
|-----------------------|-----|----|----|---|---|-----|

# Boston Fires in 2009

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## **5,547 Fires — 4,126 Structure Fires, 426 Vehicle Fires & 995 Other Fires**

The Boston Fire Department reported 4,126 structure fires, 426 motor vehicle fires, 526 outside rubbish fires, 312 grass, tree or brush fires, 95 special outside fires, and two unclassified fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2009. These 5,547 incidents caused eight civilian injuries, 12 fire service injuries and an estimated dollar loss of \$27 million. There were 9.4 fires for every 1,000 citizens in 2009. The statewide rate was 4.5 fires for every 1,000 people.

## **No Fire Deaths in 2009**

In 2009, for the first time since World War II, the City of Boston did not have any fire-related deaths.<sup>24</sup>

## **Structure & Motor Vehicle Fires Up**

The total number of Boston fires reported to the Massachusetts Fire Incident Reporting System increased by 869 from the 4,678 reported in 2008 to 5,547 in 2009. Structure fires increased by 932, motor vehicle fires increased by 39, and outside and other fires decreased by 102. For the seventh year in a row the number of structure fires increased significantly. Motor vehicle fires have been on a downward trend since 1986, but in 2009 they rose by 10%. Outside and other fires continued the trend of decreasing since 1996 that was only briefly interrupted in 2001, 2004 and in 2007. Although fewer than 10% of the state's residents live in the City of Boston, the Boston Fire Department reported 18% of the 28,595 fire incidents reported statewide in 2009.

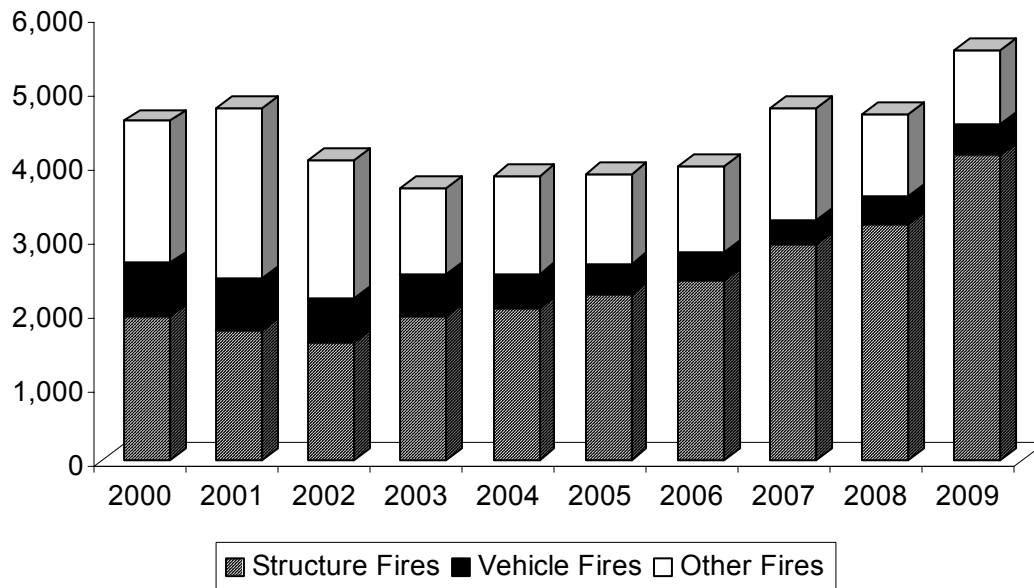
## **BOSTON FIRES FROM 2000 TO 2009**

| Year | Total<br>Fires | Structure<br>Fires | Vehicle<br>Fires | Other<br>Fires | Total<br>Arsons | Structure<br>Arsons | Vehicle<br>Arsons | Other<br>Arsons |
|------|----------------|--------------------|------------------|----------------|-----------------|---------------------|-------------------|-----------------|
| 2000 | 4,588          | 1,944              | 717              | 1,927          | 318             | 150                 | 154               | 14              |
| 2001 | 4,769          | 1,757              | 692              | 2,320          | 327             | 153                 | 159               | 15              |
| 2002 | 4,051          | 1,593              | 595              | 1,863          | 275             | 151                 | 113               | 11              |
| 2003 | 3,676          | 1,938              | 570              | 1,168          | 163             | 73                  | 58                | 32              |
| 2004 | 3,833          | 2,030              | 452              | 1,321          | 141             | 75                  | 43                | 23              |
| 2005 | 3,874          | 2,238              | 397              | 1,239          | 118             | 62                  | 24                | 32              |
| 2006 | 3,971          | 2,432              | 379              | 1,160          | 94              | 46                  | 22                | 26              |
| 2007 | 4,768          | 2,910              | 347              | 1,511          | 107             | 53                  | 14                | 40              |
| 2008 | 4,678          | 3,194              | 387              | 1,097          | 109             | 45                  | 20                | 44              |
| 2009 | 5,547          | 4,126              | 426              | 995            | 104             | 25                  | 34                | 45              |

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<sup>24</sup> Based upon available records.

### Boston Fires by Incident Type

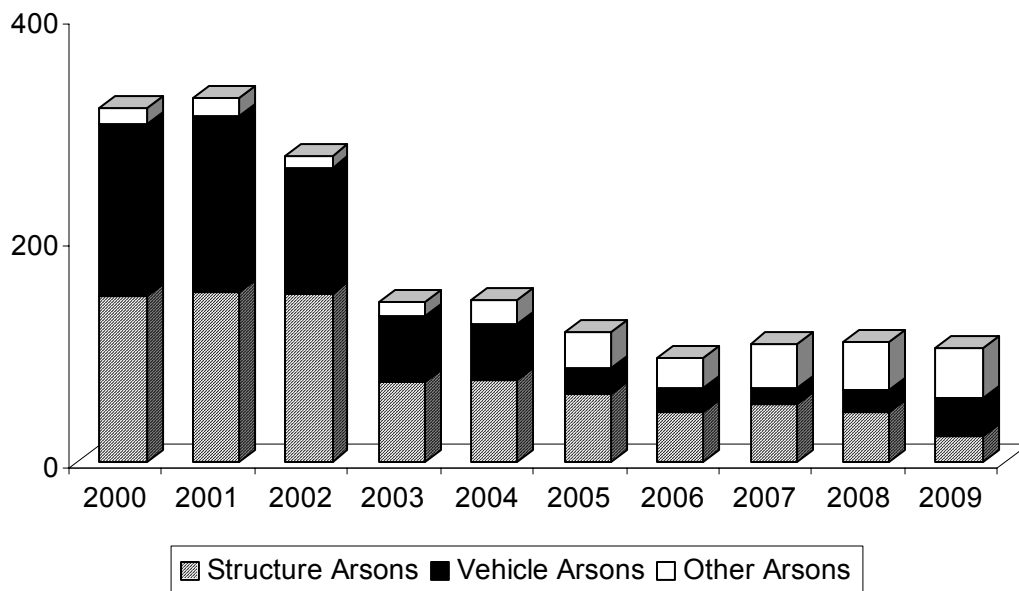


#### 104 Arsons — 25 Structure Arsons, 34 Vehicle Arsons & 45 Other Arsons

One hundred and four (104), or 2%, of the 5,547 Boston fires were considered intentionally set<sup>25</sup>, or, for purposes of this analysis, arson. The 25 structure arsons, 34 motor vehicle arsons and 45 outside and other arsons caused an estimated dollar loss of \$2,838,400

<sup>25</sup> 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.

## Boston Arsons by Incident Type



### STRUCTURE FIRES

#### Reported Structure Fires Up

The 4,126 structure fires caused seven civilian injuries, 11 fire service injuries and an estimated dollar loss of \$23.9 million. These incidents represented 74% of Boston's reported fires in 2009. The average estimated dollar loss per structure fire was \$5,790. The total number of reported structure fires increased by 932, or 29%, from the 3,194 reported in 2008.

#### Arson Caused of 1% of Structure Fires

The 25 structure arsons caused an estimated dollar loss of \$2.1 million. Arson was indicated as the cause of 1% of the structure fires and 9% of Boston's structure fire dollar loss. The 25 structure arsons accounted for 24% of the Boston arson fires reported in 2009. The total number of reported structure arsons decreased by 20, or 44%, from 45 in 2008.

#### 64% of Structure Arsons Occurred in Residences

Sixty-four percent (64%) of Boston's 25 structure arsons occurred in residential occupancies; 16% occurred in educational buildings; 12% occurred in mercantile or business properties; 8% each occurred in public assembly properties and storage facilities; and 1% each occurred in educational facilities and special properties.

## **BUILDING FIRES**

There were 4,110 building fires of different types in Boston in 2009. These 4,110 building fires accounted for 99.6% of all structure fires in Boston.

### **83% of Building Fires in Homes**

The 4,110 building fires that occurred in Boston in 2009 can be broken down by fixed property use as follows: 3,407, or 83%, of all the building fires reported in 2009, were in residential properties; 218 fires happened in institutional facilities; 184 fires took place in mercantile and office properties; 157 fires occurred in public assembly properties; 88 fires occurred in educational properties; 24 took place in special properties; 11 fires were in storage facilities; nine happened in industrial, utility, defense, agricultural or mining facilities; and seven were reported in manufacturing properties. Five (5) fires occurred in buildings where the property use was unclassified or not reported.

## **RESIDENTIAL FIRES**

### **Residential Building Fires Caused \$16 Million in Damages**

In 2009, 3,407 or 83%, of Boston's 4,110 reported building fires occurred in residences. Fires in or on residential buildings caused seven civilian injuries, five fire service injuries and an estimated dollar loss of \$16 million. The total number of residential building fires increased by 739, or 28%, from the 2,668 reported in 2008.

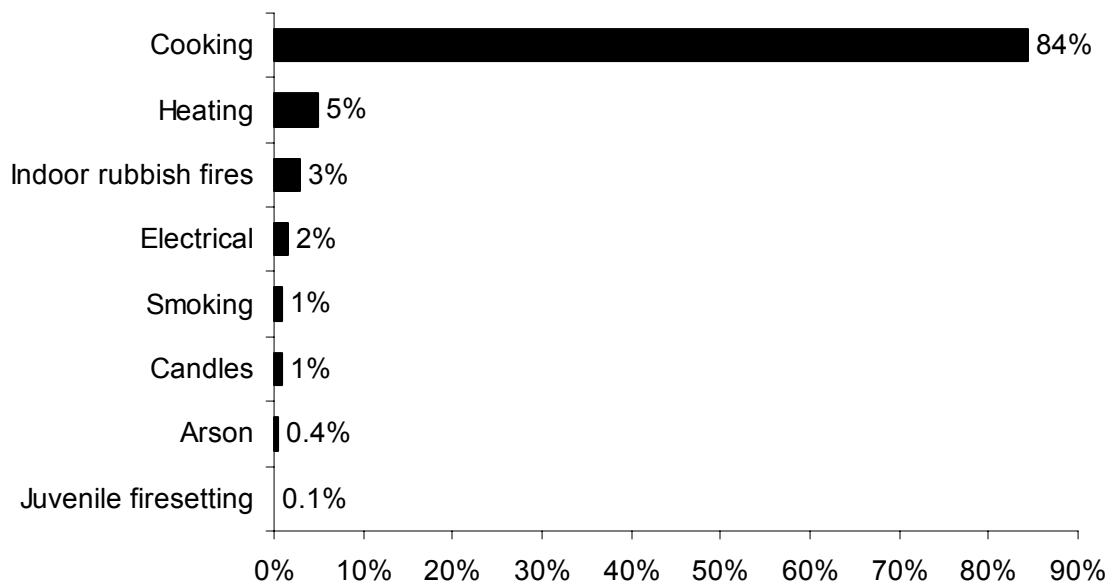
### **Apartments Accounted for 69% of Residential Building Fires**

The peak fixed property uses for residential building fires were apartments, accounting for 69% of the residential building fires in Boston; 13% occurred in 1- or 2-family homes; 5% occurred in dormitories, 3% happened in rooming houses, 1% each occurred in residential board and care facilities and in hotels or motels, and 8% happened in unclassified residential occupancies.

### **Unattended Cooking Caused 84% of Boston's Residential Fires**

Cooking was the leading cause of the 3,407 fires in Boston residential buildings, accounting for 84% of these fires. Heating equipment was the cause of 5% of these fires. Indoor rubbish fires caused 3% of residential building fires in Boston. Electrical problems caused 2% of these fires. Smoking and candles each caused 1% of these fires. Arson and juvenile-set fires each accounted for less than 1% of the fires in Boston residences in 2009.

## Causes of Residential Structure Fires



### 87% of Residential Building Fires Are Confined to Non-Combustible Containers<sup>26</sup>

Three thousand one hundred and ten (3,110), or 87% of all residential building fires, were reported as confined to non-combustible containers in 2009. Two thousand eight hundred and thirty-seven (2,837) of the reported fires were cooking fires contained to a non-combustible container accounting for 83% of residential building fires. One hundred and forty-five (145), or 4%, were fires confined to a fuel burner or boiler malfunction. One hundred and one (101), or 3%, of these fires were contained rubbish fires. Twenty-three (23), or 1% of all residential building fires reported in 2009, were fires confined to a chimney. Three (3) incinerator overloads or malfunctions caused less than 1% of residential building fires in Boston in 2009. One (1), or less than 1%, were confined commercial compactor fires.

### Detectors Alerted Occupants in 87% of Home Fires

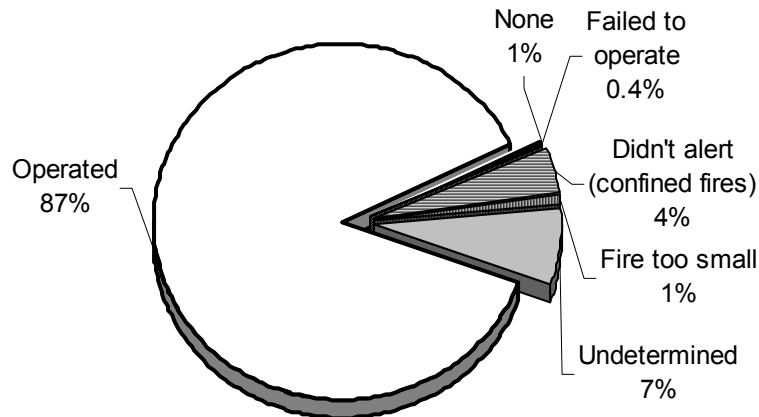
Smoke or heat detectors operated and alerted the occupants in 2,968, or 87%, of the residential building fires. In 4% of these fires<sup>27</sup>, the detectors did not alert the occupants. Detectors were present but did not operate in less than 1% of these incidents. In 1% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 1% of the residential fires. Smoke detector performance was undetermined in 238 incidents, or 7% of Boston's residential building fires.

<sup>26</sup> In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

<sup>27</sup> These represent confined fires where it was reported that the detector did not alert the occupants.



## Detector Status in Boston's Residential Structure Fires 2009



### Over 1/4 Failed Detectors Had Dead Batteries

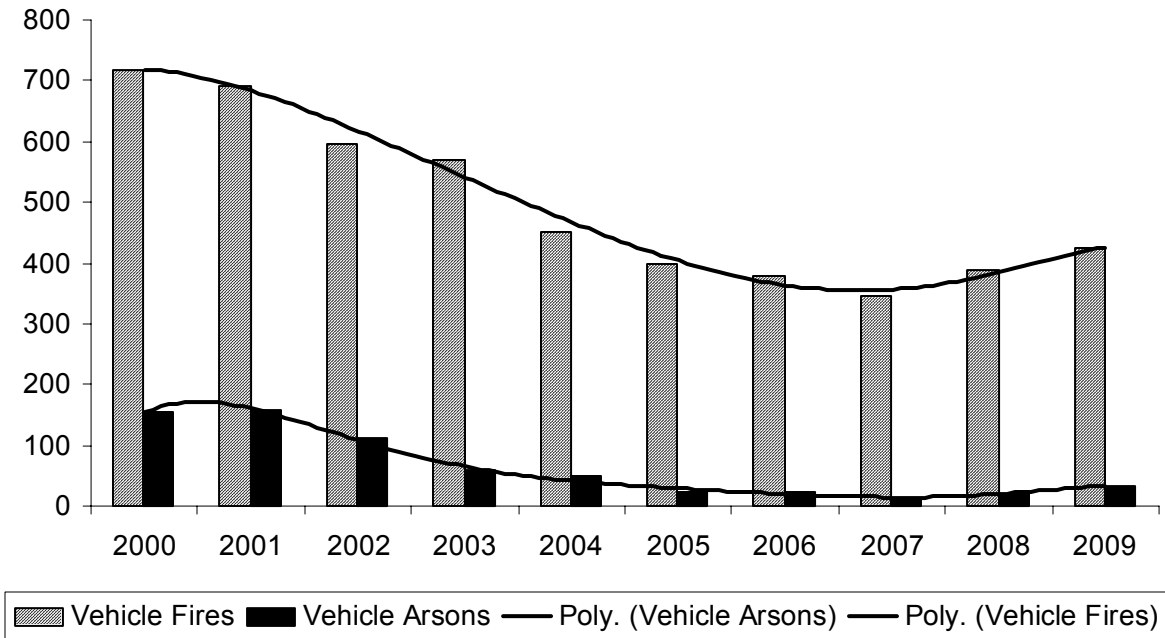
Of the 11 fires where smoke detectors were present but failed to operate, three, or 27%, did not operate because of dead batteries. Another detector, or 9%, failed because of missing or disconnected batteries; and another one, or 9%, failed because of power failure, shut-off or disconnect. For six cases, or 55%, the reason the detector failed was not determined or classified.

## MOTOR VEHICLE FIRES

### Motor Vehicle Fires Increase for the Second Year in a Row.

The 426 motor vehicle fires caused one civilian injury and an estimated dollar loss of \$3.1 million. Motor vehicle fires comprised 8% of Boston's reported fires in 2009. The total number of motor vehicle fires increased 39 from the 387 reported in 2008. This is only the second year since 2000 that motor vehicle fires have increased. Since 2000, motor vehicle fires have decreased 41% and motor vehicle arsons have decreased 78%.

## Motor Vehicle Fires & Arsons in Boston 2000 - 2009



### 8% of Motor Vehicle Fires Considered Arson

Thirty-four (34), or 8%, of Boston's 426 motor vehicle fires were considered intentionally set, or for purposes of this report, arson. These 34 motor vehicle arsons caused one civilian injury and an estimated dollar loss of \$729,400. The total number of reported motor vehicle arsons increased 14, or 70% from the 20 reported in 2008. For the second year in a row, vehicle arson went against the downward trend since 1986. The only time since then that motor vehicle arsons increased were minor increases from 1993 to 1994 and 1998 to 1999.

### Boston Fire Department Instrumental in Getting MV Fire Legislation Passed

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

### Boston Fire Department Brought Vehicle Arson Down 99% Since 1986

The total number of motor vehicle fires reported annually has plunged 3,214 from a high of 3,601 in 1983 to 426 in 2009, an 88% decrease. The drop in vehicle arson was even

more dramatic. Vehicle arson fell 3,027 from the 1986 high of 3,061 incidents to 34 in 2009 for a 99% decline.

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

For the first time in eight years, there were more motor vehicle arsons than structure arsons in Boston. Motor vehicle arson represents 33% of the total arson problem while structure arson accounts for 24% of the all 2009 arsons in Boston.

## **OUTSIDE AND OTHER FIRES**

### **Dumpster Fires Account for 11% of Boston's Fires**

The 586 outside rubbish fires, 312 grass, tree or brush fires, 95 special outside fires, and two unclassified fires are grouped together as 'outside or other fires.' These 995 outside and other fires caused one fire service injury and an estimated dollar loss of \$57,510. Outside and other fires comprised 18% of the 5,547 Boston fires reported in 2009. Eleven percent (11%) of Boston's fires were rubbish or dumpster fires and 6% were brush, tree, or grass fires. The total number of outside and other fires decreased by 102, or 9%, from the 1,097 reported in 2008.

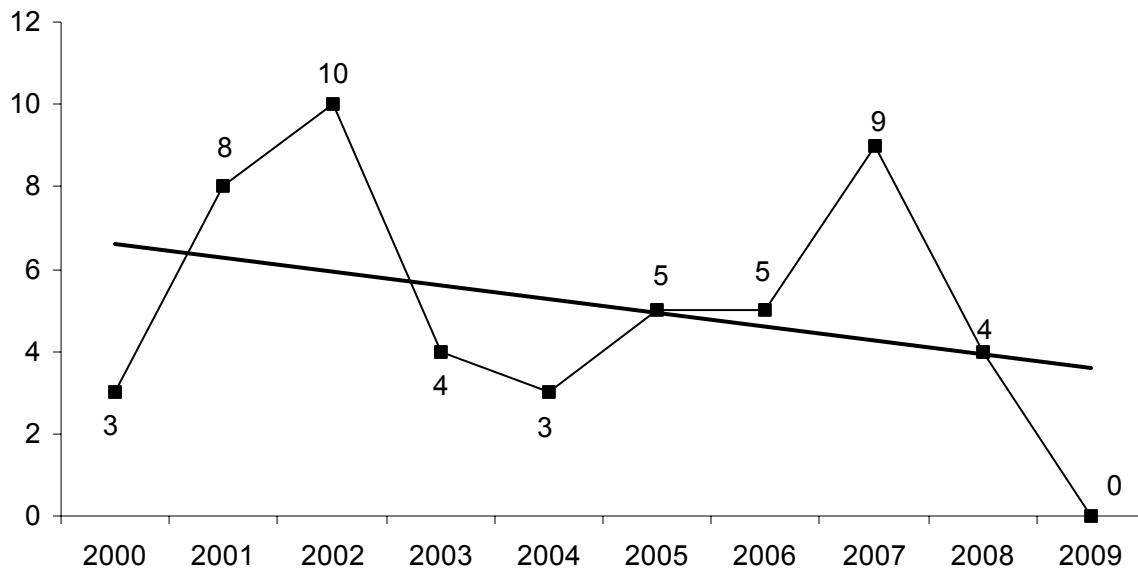
### **45 Outside and Other Fires Considered Arson**

The 45 identified outside and other arsons caused an estimated dollar loss of \$5,300. Twenty-three (23) were special outside fires. Nineteen (19) were grass, tree or brush fires; two were outside rubbish fires, and one was an unclassified fires. Outside and other arsons accounted for 5% of Boston's outside and other fires, and 43% of Boston's total arson fires.

## **FATAL FIRES**

In 2009 there were no fatal fires in Boston.

## Fire Deaths in Boston 2000 - 2009



## JUVENILE-SET FIRES

### 12 Juvenile-set Fires

There were 12 reported juvenile-set fires in Boston in 2009. The eight structure fires, one motor vehicle fire and three brush fires caused one fire service injury and \$127,025 in estimated damages.

## ALL CALLS

### Rescue & EMS Calls Are 45% of All Reported Responses

In 2009, the Boston Fire Department reported 68,954 total responses to MFIRS. Of these 68,594 responses, 63,406 non-fire calls were voluntarily reported.

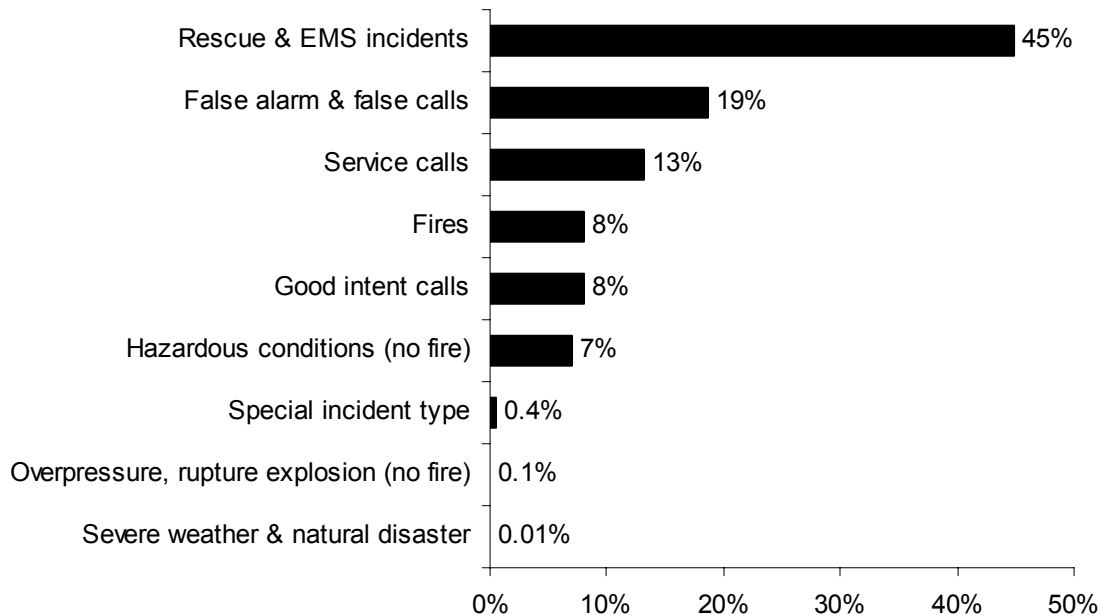
Of these 63,406 non-fire calls, 30,981, or 45% of all the responses reported in 2009, were reported rescue and emergency medical services (EMS) calls<sup>28</sup>; 12,860, or 19%, were reported false alarm or false calls; 9,050, or 13%, were reported service calls such as lock-outs, water or smoke problem, unauthorized burning or public service assistance; 5,341, or 8%, were reported good intent calls; 4,806, or 7%, were reported hazardous condition calls with no fire; 297, or 0.4%, were special incident type calls such as citizen

<sup>28</sup> The Boston Fire Department does not run any ambulances. Instead they dispatch their companies as first responders to all EMS calls.

complaints; 62, or 0.1%, were reported overpressure, rupture, explosion or overheat calls with no fire; and nine, or 0.01%, were severe weather calls.

Five thousand five hundred and forty-eight (5,548), or 8%, of the total responses submitted by the Boston Fire Department were fires<sup>29</sup>.

### 2009 Boston Calls by Incident Type



### CONCLUSIONS

- **No Civilians Died in Boston in 2009**

There were no fire deaths in Boston in 2009.

- **No Fire-Related Line of Duty Deaths**

There were no fire-related line of duty deaths in Boston in 2009.

- **Structure and Motor Vehicle Fires Increase**

Structure fires increased for the seventh straight year. Motor vehicle fires increased for the second consecutive year. For the first time in eight years, there were more motor vehicle arsons than structure arsons in Boston. Motor vehicle arson represents 33% of the total arson problem while structure arson accounts for 24% of the all 2009 arsons in Boston.

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<sup>29</sup> This includes the fires that Boston responded to outside of their jurisdiction as mutual aid given.

- **Cooking Caused 84% of Residential Fires**

Cooking was the leading cause of the 3,407 fires in Boston's residential buildings, accounting for 84%.

- **Smoke Detectors Operated in 87% of Residential Fires**

Smoke or heat detectors operated in 87% of residential building fires.

- **There Were No Working Detectors in 1% of Residential Building Fires**

There were no working detectors in 1% of Boston's residential building fires. Of these detectors that did not work, less than 1% detectors failed to operate and in 1% of these fires detectors were not present.

- **Apartments Accounted for 69% of Residential Building Fires**

The peak fixed property uses for building fires were apartments, accounting for 69% of the building fires in Boston; 13% occurred in 1- or 2-family homes; 5% occurred in dormitories, 3% happened in rooming houses, 1% occurred in residential board and care facilities; and another 1% occurred in hotels or motels.

**Boston****FDID: 25035****Population: 589,141****Total Fires 5,547 \$27,024,722**

9.4 Fires/1,000 Population

| <b>Situation Found</b> | <b>Fires</b> | <b>% of Fires</b> | <b>Dollar Loss</b> |
|------------------------|--------------|-------------------|--------------------|
| Structure Fires        | 4,126        | 74%               | \$23,890,426       |
| Vehicle Fires          | 426          | 8%                | 3,076,786          |
| Other Fires            | 995          | 18%               | 57,510             |

8 Civilian Injuries

12 Fire Service Injuries

7.00 Structure fires/1,000 population

0.72 Vehicle fires /1,000 population

1.69 Other fires/1,000 population

**Building Fires: 4,110****Residential Building Fires: 3,407****Residential Building Fires Confined to Non-Combustible Containers: 3,110****Unconfined Residential Building Fires: 297**

7 Civilian Injuries

5 Fire Service Injuries

| <b>Occupancy</b>         | <b>Fires</b> | <b>%</b> | <b>Detector Status</b>  | <b>Fires</b> | <b>%</b> |
|--------------------------|--------------|----------|-------------------------|--------------|----------|
| Apartments               | 2,347        | 69%      | Operated                | 2,968        | 87%      |
| 1- & 2-Family homes      | 450          | 13%      | Didn't operate          | 12           | 0.4%     |
| Dormitories              | 183          | 5%       | None                    | 24           | 1%       |
| Rooming houses           | 101          | 3%       | Fire too small          | 23           | 1%       |
| Residential board & care | 38           | 1%       | Didn't alert (confined) | 142          | 4%       |
| Hotel/motel              | 32           | 1%       | Undetermined            | 238          | 7%       |

| <b>Area of Origin<sup>30</sup></b> | <b>%</b> | <b>Heat Source</b>           | <b>%</b> | <b>%Unconfined<sup>31</sup></b> |
|------------------------------------|----------|------------------------------|----------|---------------------------------|
| Kitchen                            | 86%      | Radiated heat from oper. eq. | 2%       | 23%                             |
| Heating room or area               | 4%       | Heat from operating eq.      | 1%       | 12%                             |
| Bedroom                            | 1%       | Arcing                       | 1%       | 10%                             |
| Chimney or flue                    | 1%       | Hot or smoldering object     | 1%       | 7%                              |
|                                    |          | Cigarettes                   | 1%       | 6%                              |

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

<sup>31</sup> These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Heat Source from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires, but is sometimes voluntarily reported.

| <b>Item First Ignited<sup>32</sup></b> | <b>%</b> | <b>Factor Contrib. to Ignit.</b> | <b>%</b> | <b>%Unconfined<sup>33</sup></b> |
|--|----------|----------------------------------|----------|---------------------------------|
| Food, cooking materials                | 84%      | Too close to combustibles        | 1%       | 14%                             |
| Flammable, combustible liquid          | 4%       | Abandoned materials              | 1%       | 13%                             |
| Rubbish, trash, waste products         | 3%       | Equipment unattended             | 1%       | 12%                             |
| Film, residue (creosote)               | 1%       | Misuse of material or prod.      | 1%       | 10%                             |
| Structural member, framing             | 1%       | Unspecified short-circuit arc    | 1%       | 7%                              |
| Electrical wire, cable insulation      | 1%       | Elec. failure, malf., other      | 1%       | 6%                              |

| <b>Equipment<sup>34</sup></b>     | <b>%</b> | <b>Cause of Ignition</b>      | <b>%</b> | <b>%Unconfined<sup>35</sup></b> |
|-----------------------------------|----------|-------------------------------|----------|---------------------------------|
| Cooking equipment                 | 83%      | Unintentional                 | 6%       | 65%                             |
| None                              | 9%       | Failure of eq. or heat source | 1%       | 14%                             |
| Boiler, furnace, cent. heat. unit | 4%       | Intentional                   | 0.4%     | 4%                              |
| Chimney, flue                     | 1%       | Undetermined                  | 0.4%     | 5%                              |
| Fan                               | 0.03%    | Cause under investigation     | 1%       | 9%                              |
|                                   |          | Act of nature                 | 0.03%    | 0.2%                            |

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

|                        |     |
|------------------------|-----|
| Alerted occupants      | 90% |
| Didn't alert occupants | 5%  |
| Undetermined           | 6%  |

<sup>32</sup> This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

<sup>33</sup> Some fields in version 5 allow for multiple entries. Therefore the number of entries may be greater than the actual number of incidents being analyzed. These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Factors Contributing to Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

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

<sup>35</sup> These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Cause of Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.



| <b>Month</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|--------------|------------------------|----------------------------|--------------------------|------------------------|
| January      | 393                    | 333                        | 33                       | 27                     |
| February     | 417                    | 343                        | 35                       | 39                     |
| March        | 520                    | 394                        | 41                       | 85                     |
| April        | 542                    | 348                        | 34                       | 160                    |
| May          | 513                    | 336                        | 29                       | 148                    |
| June         | 434                    | 324                        | 38                       | 72                     |
| July         | 440                    | 287                        | 43                       | 110                    |
| August       | 369                    | 243                        | 43                       | 83                     |
| September    | 468                    | 322                        | 45                       | 101                    |
| October      | 508                    | 424                        | 29                       | 55                     |
| November     | 464                    | 367                        | 23                       | 74                     |
| December     | 479                    | 405                        | 33                       | 41                     |

| <b>Day</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|------------|------------------------|----------------------------|--------------------------|------------------------|
| Sunday     | 855                    | 643                        | 49                       | 163                    |
| Monday     | 736                    | 532                        | 67                       | 137                    |
| Tuesday    | 726                    | 547                        | 58                       | 121                    |
| Wednesday  | 763                    | 578                        | 61                       | 124                    |
| Thursday   | 800                    | 588                        | 81                       | 131                    |
| Friday     | 802                    | 589                        | 59                       | 154                    |
| Saturday   | 865                    | 649                        | 51                       | 165                    |

| <b>Time</b>   | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|---------------|------------------------|----------------------------|--------------------------|------------------------|
| 00:01 - 04:00 | 482                    | 298                        | 59                       | 125                    |
| 04:01 - 08:00 | 347                    | 262                        | 39                       | 46                     |
| 08:01 - 12:00 | 865                    | 702                        | 73                       | 90                     |
| 12:01 - 16:00 | 1,221                  | 913                        | 75                       | 233                    |
| 16:01 - 20:00 | 1,492                  | 1,164                      | 93                       | 235                    |
| 20:01 - 00:00 | 1,140                  | 787                        | 87                       | 266                    |

### **Motor Vehicle Fires**

Total: 426

Automobiles: 393 (92%)

33 (8%) of the automobile fires considered intentionally set.

**Arson Fires****Total Arsons: 104****\$2,838,400**

|                  | <b>Arsons</b> | <b>% of Situation</b> | <b>% of Arson</b> | <b>Dollar Loss</b> |
|------------------|---------------|-----------------------|-------------------|--------------------|
| Structure Arsons | 25            | 1%                    | 24%               | \$2,103,700        |
| Vehicle Arsons   | 34            | 8%                    | 33%               | 729,400            |
| Other Arsons     | 45            | 5%                    | 43%               | 5,300              |

No Injuries

0.19 Arson fires/1,000 population

0.04 Structure arsons/1,000 population

0.06 Vehicle arsons /1,000 population

0.08 Other arsons/1,000 population

**Peak Times of Day for Arson Fires**

| <b>Structure Arsons</b> | <b>#</b> | <b>%</b> | <b>Vehicle Arsons</b> | <b>#</b> | <b>%</b> |
|-------------------------|----------|----------|-----------------------|----------|----------|
| 20:01 - 00:00           | 9        | 36%      | 04:01 - 08:00         | 11       | 32%      |
| 00:01 - 04:00           | 5        | 20%      | 00:01 - 04:00         | 9        | 26%      |
| 16:01 - 20:00           | 5        | 20%      | 20:01 - 00:00         | 7        | 21%      |

| <b>Other Arsons</b> | <b>#</b> | <b>%</b> |
|---------------------|----------|----------|
| 20:01 - 00:00       | 19       | 42%      |
| 16:01 - 20:00       | 11       | 24%      |
| 12:01 - 16:00       | 6        | 13%      |

**Peak Fixed Property Uses for Structure Arsons**

| <b>Occupancy</b>                      | <b>#</b> | <b>%</b> |
|---------------------------------------|----------|----------|
| Apartments                            | 10       | 40%      |
| 1- & 2-Family homes                   | 6        | 24%      |
| Parking garage (detached residential) | 2        | 8%       |

# Chelsea Fires in 2009

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## **271 Fires — 209 Structure Fires, 18 Vehicle Fires and 44 Other Fires**

The City of Chelsea reported 271 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2009. The 209 structure fires, 18 motor vehicle fires, eight outside rubbish fires, four grass, tree or brush fires, four special outside fires, and 28 unclassified fires caused two civilian injuries, 28 fire service injuries and an estimated dollar loss of \$1.7 million. There were 7.7 fires for every 1,000 citizens in 2009. The statewide rate was 4.5 fires for every 1,000 people.

## **No Fire Deaths in 2009**

In 2009, the City of Chelsea did not have any fire-related deaths.

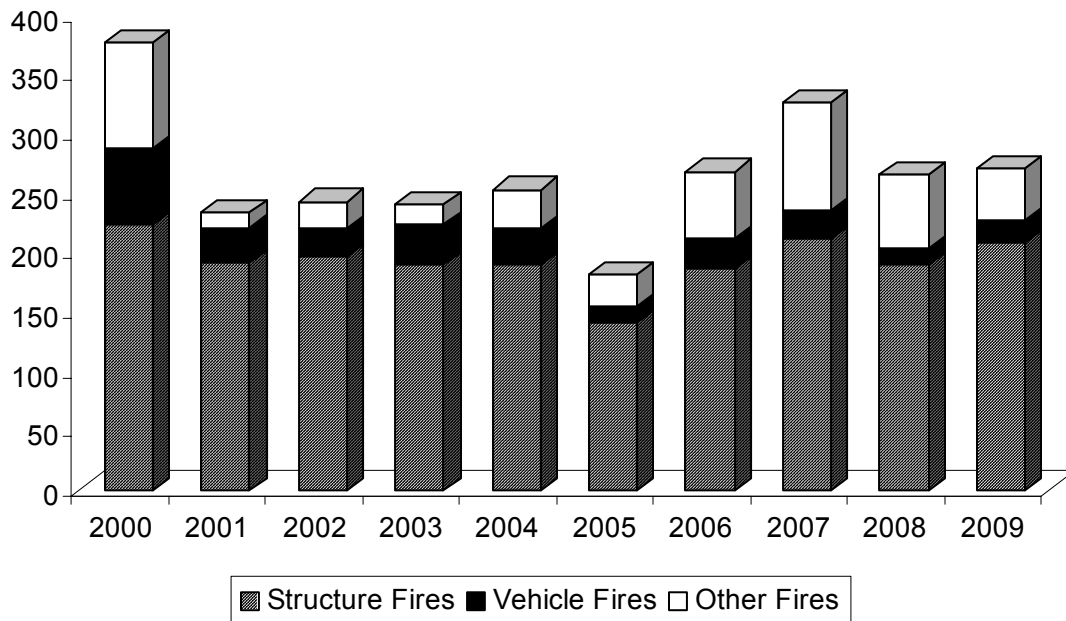
## **Structure & MV Fires Up**

The total number of fires reported to the Massachusetts Fire Incident Reporting System increased by four, from the 267 fires reported in 2008. Structure fires increased by 18 from the 191 reported in 2008. Motor vehicle fires increased by five, from 13 the previous year. Outside and other fires decreased by 19 from the 63 reported in 2008.

## **CHELSEA FIRES FROM 2000 TO 2009**

| <b>Year</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> | <b>Total<br/>Arsons</b> | <b>Structure<br/>Arsons</b> | <b>Vehicle<br/>Arsons</b> | <b>Other<br/>Arsons</b> |
|-------------|------------------------|----------------------------|--------------------------|------------------------|-------------------------|-----------------------------|---------------------------|-------------------------|
| 2000        | 377                    | 223                        | 64                       | 90                     | 31                      | 15                          | 12                        | 4                       |
| 2001        | 234                    | 191                        | 30                       | 13                     | 7                       | 2                           | 4                         | 1                       |
| 2002        | 243                    | 197                        | 23                       | 23                     | 4                       | 2                           | 1                         | 1                       |
| 2003        | 240                    | 190                        | 34                       | 16                     | 2                       | 2                           | 0                         | 0                       |
| 2004        | 253                    | 190                        | 30                       | 33                     | 2                       | 1                           | 0                         | 1                       |
| 2005        | 181                    | 141                        | 14                       | 26                     | 1                       | 0                           | 0                         | 1                       |
| 2006        | 268                    | 187                        | 25                       | 56                     | 16                      | 6                           | 1                         | 9                       |
| 2007        | 326                    | 212                        | 23                       | 91                     | 16                      | 11                          | 0                         | 5                       |
| 2008        | 267                    | 191                        | 13                       | 63                     | 7                       | 2                           | 0                         | 5                       |
| 2009        | 271                    | 209                        | 18                       | 44                     | 11                      | 7                           | 1                         | 3                       |

## Chelsea Fires by Incident Type

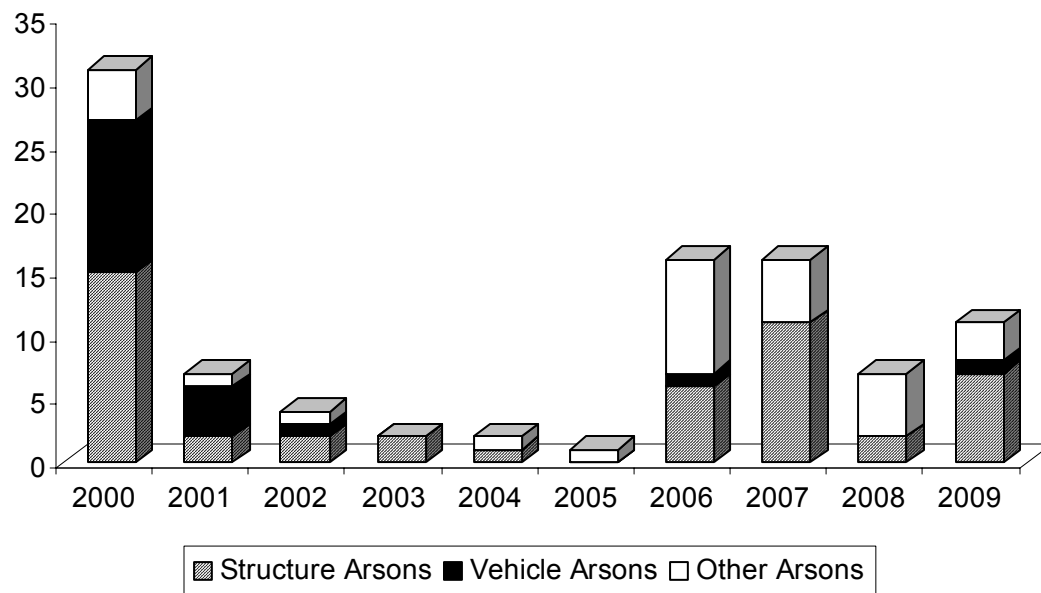


### 11 Arsons — 7 Structure Arsons, 1 MV Arson & 3 Other Arsons

Eleven (11), or 4%, of the 271 Chelsea fires were considered intentionally set, or, for purposes of this analysis, arson<sup>36</sup>. The seven structure arsons, one motor vehicle arson and three outside and other arsons caused an estimated dollar loss of \$14,650.

<sup>36</sup> In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

## Chelsea Arsons by Incident Type



### All Arsons Up Slightly

The total number of arson fires increased by four, or 57%, from the seven arsons reported in 2008. Structure arsons increased by five from the two reported in 2008. Motor vehicle arsons increased by one from the none reported 2008. Outside and other arsons decreased by two from the five reported in 2008.

## STRUCTURE FIRES

### Structure Fires Rise

The 209 structure fires caused two civilian injuries, 28 fire service injuries and an estimated dollar loss of \$1.6 million. These fires represented 77% of Chelsea's reported fires in 2009. The total number of structure fires increased by 18, or 9%, from the 191 structure fires reported in 2008.

### Arson Caused of 1% of Structure Fires

The seven structure arsons caused an estimated dollar loss of \$9,600. Arson was indicated as the cause of 3% of the structure fires and accounted for 1% of Chelsea's structure fire dollar loss. The two structure arsons represented 64% of the Chelsea's arson fires reported in 2009. The total number of reported structure arsons increased by five from two reported in 2008.

## BUILDING FIRES

There were 207 building fires of different types in Chelsea in 2009. These 207 building fires accounted for 99% of all structure fires in Chelsea.

### 85% of Building Fires in Homes

The 207 building fires that occurred in Chelsea in 2009 can be broken down by fixed property use as follows: 175 fires were in residential properties accounting for 85% of all building fires; nine fires occurred at institutional facilities; eight fires happened in mercantile or office properties; six fires occurred in public assembly properties; five fires occurred at special properties; three fires occurred at storage facilities; and one fire happened at an industrial facility.

## RESIDENTIAL BUILDING FIRES

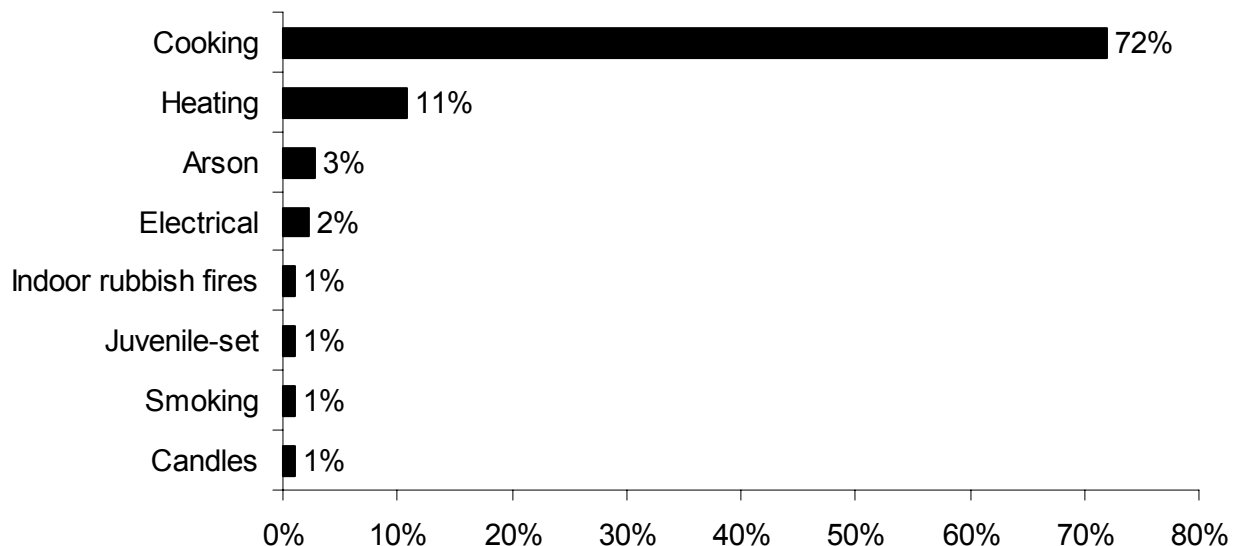
### Residential Building Fires Increase

One hundred and seventy-five (175), or 85%, of Chelsea's 185 building fires occurred in residential occupancies. This is an increase of 19 over the 156 reported residential fires in 2008. The peak fixed property uses for residential building fires were apartments, accounting for 79% of the residential building fires in Chelsea; 12% occurred in one- or two-family homes; 5% occurred in rooming houses; 2% happened at residential board and care facilities; and another 2% occurred in unclassified residential properties.

### Unsafe Cooking Practices Caused Almost 3/4 of Residential Fires

Cooking was the leading cause of fires in Chelsea's residential properties in 2009 accounting for 72% of these fires. Heating fires were the second leading cause, accounting for 11% of the fires in people's homes in Chelsea in 2009. Arson caused 3%

## Causes of Residential Fires



of residential building fires in Chelsea. Electrical problems caused 2% of these fires. Indoor rubbish fires, juvenile-set fires, smoking and candles each caused 1% of the fires in Chelsea residences in 2009.

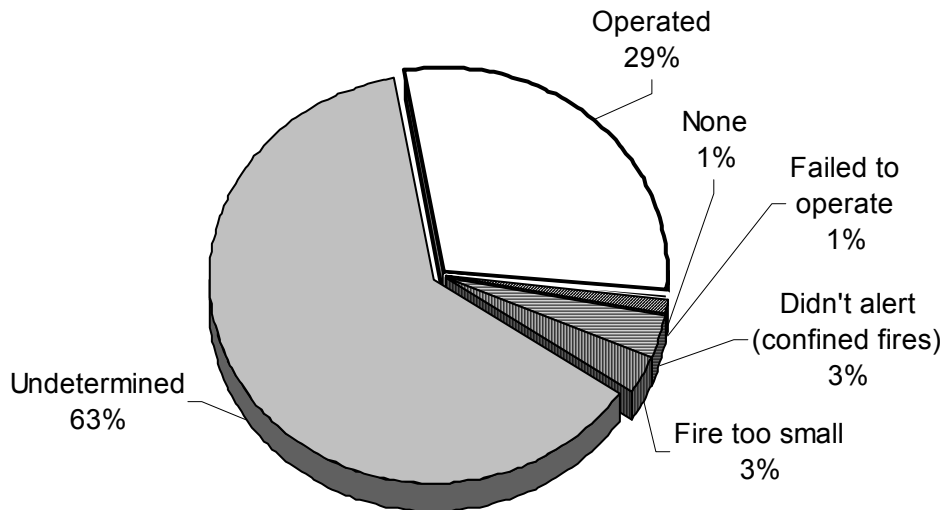
### **82% of Residential Building Fires Are Confined to Non-Combustible Containers<sup>2</sup>**

One hundred and forty-four (144), or 82%, of all residential building fires, were reported as confined to non-combustible containers in 2009. Nearly all of the confined fires were cooking fires contained to a non-combustible container like a pot or a pan, and accounted for 121, or 69%, of all residential building fires. Nineteen (19), or 11%, were fires confined to a fuel burner or boiler malfunction. Four (4), or 2%, of these fires were contained rubbish fires.

### **Detectors Alerted Occupants in Only 29% of Fires**

Smoke or heat detectors operated and alerted the occupants in 37, or 29%, of the residential building fires. In 3% of these fires<sup>37</sup>, the detectors did not alert the occupants. Detectors were not present in 1% of these fires and were present but failed to operate in 1%. The fire was too small to trigger the detector in 3% of these fires. Smoke detector performance was undetermined in 110 incidents, or 63% of Chelsea's residential building fires.

**Detector Status in Chelsea's Residential Structure Fires 2009**



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

<sup>37</sup> These represent confined fires where it was reported that the detector did not alert the occupants.

## MOTOR VEHICLE FIRES

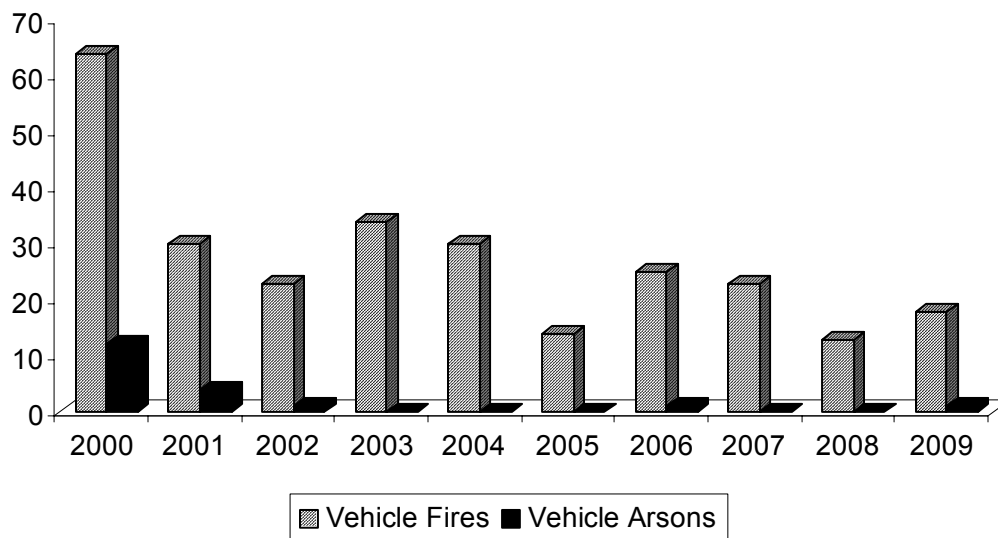
### Vehicle Fires Up

The 18 motor vehicle fires caused one fire service injury and an estimated dollar loss of \$111,950. Motor vehicle fires comprised 7% of Chelsea's 271 reported fires in 2009. The total number of motor vehicle fires increased by five from the 13 reported in 2008.

### 1 Motor Vehicle Fires Considered Arson

For the first time since 2003, Chelsea had a reported motor vehicle arson. The single motor vehicle arson caused an estimated dollar loss of \$5,000.

### Motor Vehicle Fires & Arsons in Chelsea 2000 - 2009



## OUTSIDE AND OTHER FIRES

### Reported Outside and Other Fires Down

The 44 outside and other fires caused an estimated dollar loss of \$10,150. Outside and other fires comprised 16% of the 271 fires Chelsea reported in 2009. The 44 outside and other fires included eight outside rubbish fires, four grass, tree or brush fires, four special outside fires, and 28 unclassified fires. The total number of outside and other fires decreased by 19, from the 63 reported in 2008.

### 3 Outside and Other Fires Considered Arson

There were three identified outside and other arsons. All three were unclassified fires. Outside and other arsons accounted for 7% of Chelsea's outside and other fires, and 27% of Chelsea's total arson fires.



## FATAL FIRES

There were no fatal fires in Chelsea in 2009.

## JUVENILE-SET FIRES

### 2 Juvenile-set Fires

There were two reported juvenile-set fires in Chelsea in 2009. Both were structure fires and caused an estimated dollar loss of \$15,000.

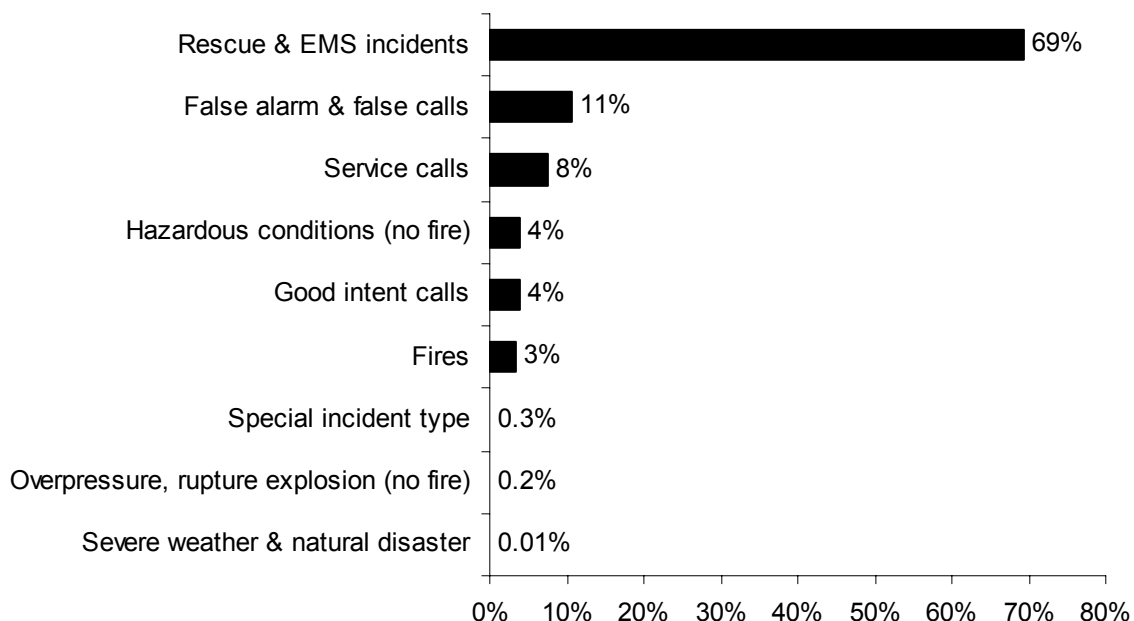
## ALL CALLS

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

In 2009, the Chelsea Fire Department reported 7,904 total responses to MFIRS. Of these 7,904 responses, 7,633 non-fire calls were voluntarily reported.

Of these 7,633 non-fire calls, 5,472, or 69% of all the responses reported in 2009, were reported rescue and emergency medical services (EMS) calls; 837, or 11%, were reported false alarm or false calls; 605, or 8%, were reported service calls such as lock-outs, water or smoke problems, unauthorized burning or public service assistance; 340, or 4%, were reported hazardous condition calls with no fire; 336, or 4%, were reported good intent calls; 27, or 0.3%, were special incident type calls such as citizen complaints; 15, or 0.2%, were reported overpressure, rupture, explosion or overheat calls with no fire; and one, or 0.01%, was a severe weather call.

### 2009 Chelsea Calls by Incident Type



Two hundred and seventy-one (271), or 3%, of the total responses submitted by the Chelsea Fire Department were fires.

#### **Chelsea Reported Giving Mutual Aid 1 Time**

In 2009, the Chelsea Fire Department reported coming to the aid of other fire departments one time. This was for a service call, most likely a station coverage.

#### **Chelsea Received Mutual Aid in 14 Incidents**

In 2009, the Chelsea Fire Department reported receiving aid from surrounding departments in 14 incidents. Of these 14 incidents, nine, or 64%, were for fires; three, or 21%, were false alarms or false calls; and two, or 14%, were rescue and emergency medical services calls.

### **CONCLUSIONS**

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

Almost three-fourths, or 72%, of Chelsea's residential building fires were caused by unattended cooking or other unsafe cooking practices. Prevention and education of community members may help this issue.

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

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

- **Reported Arsons Increase**

Reported arsons increased seven, with 11 arsons reported in 2009. For the first time since 2003, Chelsea reported a motor vehicle arson.

- **Confined Fires Account for 82% of All Residential Building Fires in Chelsea**

Residential building fires contained to non-combustible containers accounted for 144, or 82%, of the 175 residential building fires in Chelsea in 2009. Of these 144 fires, 121, or 69%, were confined cooking fires.

- **Undetermined if Smoke Detectors Operated in Over 63% of Residential Fires**

Smoke alarm performance was unreported in a significant number of fires. It was undetermined in 63%, of Chelsea homes where fires occurred were protected by smoke detectors. Detectors sounded the alarm in only 29% of the residential fires. The majority of these were confined fires. Data collection in this area has improved in the past few years, but there is still room for improvement.

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

**Total Fires**                      **271**                      **\$1,687,151**

7.7 Fires/1,000 Population

| <b>Situation Found</b> | <b>Fires</b> | <b>% of Fires</b> | <b>Dollar Loss</b> |
|------------------------|--------------|-------------------|--------------------|
| Structure Fires        | 209          | 77%               | \$1,565,051        |
| Vehicle Fires          | 18           | 7%                | 111,950            |
| Other Fires            | 44           | 16%               | 10,150             |

2 Civilian Injuries                      28 Fire Service Injuries

5.96 Structure fires/1,000 population

0.51 Vehicle fires /1,000 population

1.25 Other fires/1,000 population

**Building Fires: 207**

**Residential Building Fires: 175**

**Residential Building Fires Confined to Non-Combustible Containers: 144**

**Unconfined Residential Building Fires: 31**

2 Civilian Injuries                      26 Fire Service Injuries

| <b>Occupancy</b>         | <b>Fires</b> | <b>%</b> | <b>Detector Status</b>  | <b>Fires</b> | <b>%</b> |
|--------------------------|--------------|----------|-------------------------|--------------|----------|
| Apartments               | 139          | 79%      | Operated                | 51           | 29%      |
| 1- & 2-Family homes      | 21           | 12%      | Didn't operate          | 2            | 1%       |
| Rooming houses           | 8            | 5%       | None                    | 1            | 1%       |
| Residential board & care | 4            | 2%       | Fire too small          | 5            | 3%       |
| Residential, other       | 3            | 3%       | Didn't alert (confined) | 6            | 3%       |
|                          |              |          | Undetermined            | 110          | 53%      |

| <b>Area of Origin<sup>38</sup></b> | <b>%</b> | <b>Heat Source</b>      | <b>%</b> | <b>%Unconfined<sup>39</sup></b> |
|------------------------------------|----------|-------------------------|----------|---------------------------------|
| Kitchen                            | 75%      | Heat from operating eq. | 4%       | 23%                             |
| Heat equipment room                | 11%      | Lighter                 | 1%       | 6%                              |
| Bathroom                           | 2%       | Sunlight                | 1%       | 3%                              |
| Living room                        | 2%       | Candle                  | 1%       | 3%                              |

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

<sup>39</sup> These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Heat Source from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires, but is sometimes voluntarily reported.

| <b>Item First Ignited<sup>40</sup></b> | <b>%</b> | <b>Factor Contrib. to Ignit.</b> | <b>%</b> | <b>%Unconfined<sup>41</sup></b> |
|--|----------|----------------------------------|----------|---------------------------------|
| Food, cooking materials                | 72%      | Misuse of mater. or product      | 2%       | 13%                             |
| Flammable or combustible. liq.         | 11%      | Abandoned materials              | 2%       | 10%                             |
| Rubbish, trash, waste                  | 5%       | Too close to combustibles        | 1%       | 6%                              |
| Ext. sidewall covering                 | 2%       |                                  |          |                                 |
| Thermal, acoustical insulation         | 1%       |                                  |          |                                 |
| Electrical wire, cable insulation      | 1%       |                                  |          |                                 |

| <b>Equipment<sup>42</sup></b>     | <b>%</b> | <b>Cause of Ignition</b>      | <b>%</b> | <b>%Unconfined<sup>43</sup></b> |
|-----------------------------------|----------|-------------------------------|----------|---------------------------------|
| Kitchen & cooking equipment       | 69%      | Unintentional                 | 11%      | 59%                             |
| None                              | 17%      | Fail of equip. or heat source | 2%       | 9%                              |
| Boiler, furnace, cent. heat. unit | 11%      | Intentional                   | 3%       | 19%                             |
| Refrigerator                      | 1%       | Undetermined                  | 2%       | 9%                              |
| Power sander                      | 1%       | Cause under investigation     | 1%       | 3%                              |

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

|                        |     |
|------------------------|-----|
| Alerted occupants      | 26% |
| Didn't alert occupants | 4%  |
| Undetermined           | 70% |

**Mutual Aid Given**

**# of Incidents**

Revere

1

<sup>40</sup> This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

<sup>41</sup> Some fields in version 5 allow for multiple entries. Therefore the number of entries may be greater than the actual number of incidents being analyzed. These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Factors Contributing to Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

<sup>42</sup> This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

<sup>43</sup> These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Cause of Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

| <b>Month</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|--------------|------------------------|----------------------------|--------------------------|------------------------|
| January      | 16                     | 11                         | 2                        | 3                      |
| February     | 16                     | 14                         | 1                        | 1                      |
| March        | 31                     | 26                         | 1                        | 4                      |
| April        | 24                     | 18                         | 1                        | 5                      |
| May          | 23                     | 17                         | 0                        | 6                      |
| June         | 15                     | 7                          | 1                        | 7                      |
| July         | 18                     | 12                         | 2                        | 4                      |
| August       | 28                     | 18                         | 4                        | 6                      |
| September    | 26                     | 22                         | 1                        | 3                      |
| October      | 27                     | 22                         | 3                        | 2                      |
| November     | 27                     | 25                         | 0                        | 2                      |
| December     | 20                     | 17                         | 2                        | 1                      |

| <b>Day</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|------------|------------------------|----------------------------|--------------------------|------------------------|
| Sunday     | 35                     | 27                         | 2                        | 6                      |
| Monday     | 55                     | 46                         | 3                        | 6                      |
| Tuesday    | 41                     | 32                         | 2                        | 7                      |
| Wednesday  | 33                     | 25                         | 2                        | 6                      |
| Thursday   | 29                     | 21                         | 3                        | 5                      |
| Friday     | 36                     | 27                         | 1                        | 8                      |
| Saturday   | 42                     | 31                         | 5                        | 6                      |

| <b>Time</b>   | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|---------------|------------------------|----------------------------|--------------------------|------------------------|
| 00:01 - 04:00 | 28                     | 21                         | 5                        | 2                      |
| 04:01 - 08:00 | 21                     | 16                         | 2                        | 3                      |
| 08:01 - 12:00 | 50                     | 39                         | 2                        | 9                      |
| 12:01 - 16:00 | 54                     | 39                         | 3                        | 12                     |
| 16:01 - 20:00 | 66                     | 53                         | 2                        | 11                     |
| 20:01 - 00:00 | 52                     | 41                         | 4                        | 7                      |

### **Motor Vehicle Fires**

Total: 18

Automobiles: 15 (83%)

None of the automobile fires considered intentionally set.

## Arson Fires

**Total Arsons: 11**

**\$14,650**

| <b>Situation</b> | <b>Arsons</b> | <b>% of Situation</b> | <b>% of Arson</b> | <b>Dollar Loss</b> |
|------------------|---------------|-----------------------|-------------------|--------------------|
| Structure Arsons | 7             | 3%                    | 64%               | \$9,600            |
| Vehicle Arsons   | 1             | 6%                    | 9%                | 5,000              |
| Other Arsons     | 3             | 7%                    | 27%               | 50                 |

No Injuries

0.31 Arson fires/1,000 population

0.20 Structure arsons/1,000 population

0.03 Vehicle arsons /1,000 population

0.09 Other arsons/1,000 population

### Peak Times of Day for Arson Fires

| <b>Structure Arsons</b> | <b>#</b> | <b>%</b> | <b>Vehicle Arsons</b> | <b>#</b> | <b>%</b> |
|-------------------------|----------|----------|-----------------------|----------|----------|
| 08:01 - 12:00           | 2        | 29%      | 00:00 – 04:00         | 1        | 100%     |
| 12:01 - 16:00           | 2        | 29%      |                       |          |          |
| 20:01 - 00:00           | 2        | 29%      |                       |          |          |

| <b>Other Arsons</b> | <b>#</b> | <b>%</b> |
|---------------------|----------|----------|
| 12:01 - 16:00       | 1        | 67%      |
| 16:01 - 20:00       | 1        | 33%      |

### Peak Fixed Property Uses for Structure Arsons

|                         |   |     |
|-------------------------|---|-----|
| Apartments              | 4 | 57% |
| Restaurant or cafeteria | 2 | 29% |
| 1- or 2-Family homes    | 1 | 14% |

# Revere Fires in 2009

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## **414 Fires — 377 Structure Fires, 10 Vehicle Fires and 27 Other Fires**

The City of Revere reported 414 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2009. The 377 structure fires, 10 motor vehicle fires, 23 outside rubbish fires, and four unclassified fires caused two civilian injuries, two firefighter injuries and an estimated dollar loss of \$417,650. There were 8.76 fires for every 1,000 citizens in 2009. The statewide rate was 4.5 fires for every 1,000 people.

## **No Fire Deaths in 2009**

In 2009, the City of Revere did not have any fire-related deaths.

## **All Fires Down**

The total number of reported fires decreased by 29 from the 443 reported in 2008. Structure fires decreased by 22 from the 399 reported during the previous year. Motor vehicle fires remained the same with 10 reported in both 2008 and 2009. Reported outside and other fires decreased by seven from 34 the year before.

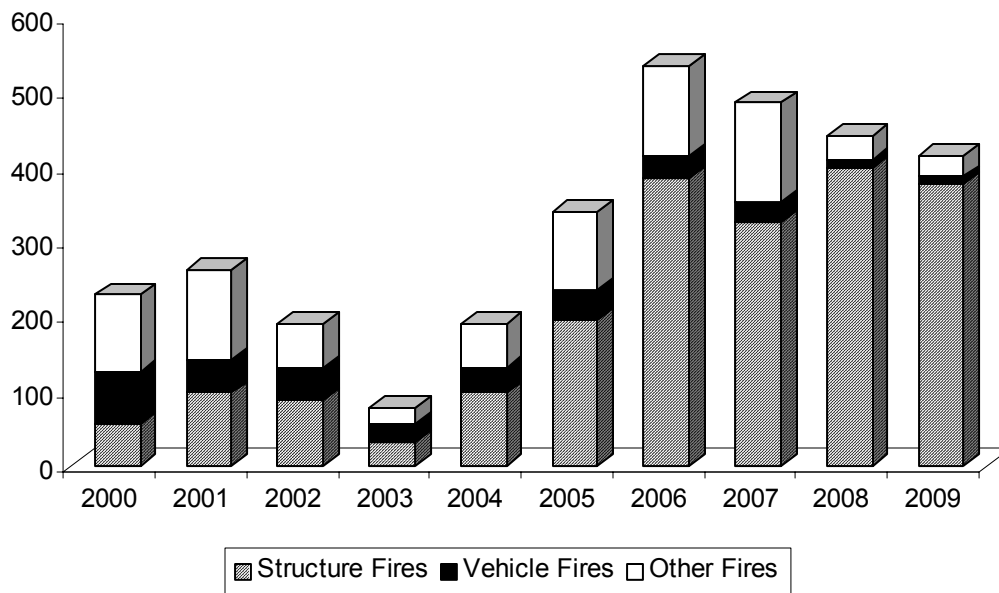
## **REVERE FIRES FROM 2000 TO 2009**

| <b>Year</b>        | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> | <b>Total<br/>Arsons</b> | <b>Structure<br/>Arsons</b> | <b>Vehicle<br/>Arsons</b> | <b>Other<br/>Arsons</b> |
|--------------------|------------------------|----------------------------|--------------------------|------------------------|-------------------------|-----------------------------|---------------------------|-------------------------|
| 2000               | 229                    | 57                         | 70                       | 102                    | 21                      | 7                           | 10                        | 4                       |
| 2001               | 262                    | 98                         | 44                       | 120                    | 18                      | 5                           | 8                         | 5                       |
| 2002               | 191                    | 88                         | 43                       | 60                     | 4                       | 0                           | 3                         | 1                       |
| 2003               | 80                     | 34                         | 23                       | 23                     | 2                       | 0                           | 2                         | 0                       |
| 2004               | 188                    | 96                         | 34                       | 58                     | 6                       | 1                           | 4                         | 1                       |
| 2005               | 339                    | 195                        | 40                       | 104                    | 13                      | 7                           | 4                         | 2                       |
| 2006 <sup>44</sup> | 536                    | 395                        | 29                       | 122                    | 31                      | 6                           | 4                         | 21                      |
| 2007               | 486                    | 327                        | 26                       | 133                    | 6                       | 4                           | 2                         | 0                       |
| 2008               | 443                    | 399                        | 10                       | 34                     | 1                       | 1                           | 0                         | 0                       |
| 2009               | 414                    | 377                        | 10                       | 27                     | 3                       | 3                           | 0                         | 0                       |

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<sup>44</sup> The majority of this increase in reported fires was a dramatic increase in the reporting of the number of confined structure fires. In 2005 Revere reported 133 confined structure fires; and in 2006 they reported 319 of these types of fires for an increase of 140%. This increase of 186 confined fires represents 94% of the increase in all reported fires from 2005 to 2006.

## Revere Fires by Incident Type



### 3 Arsons — 3 Structure Arsons

Three (3), or 1%, of Revere's 414 reported fires was considered intentionally set, or for purposes of this analysis, arson<sup>45</sup>. All three arson were reported structure arson in 2009.

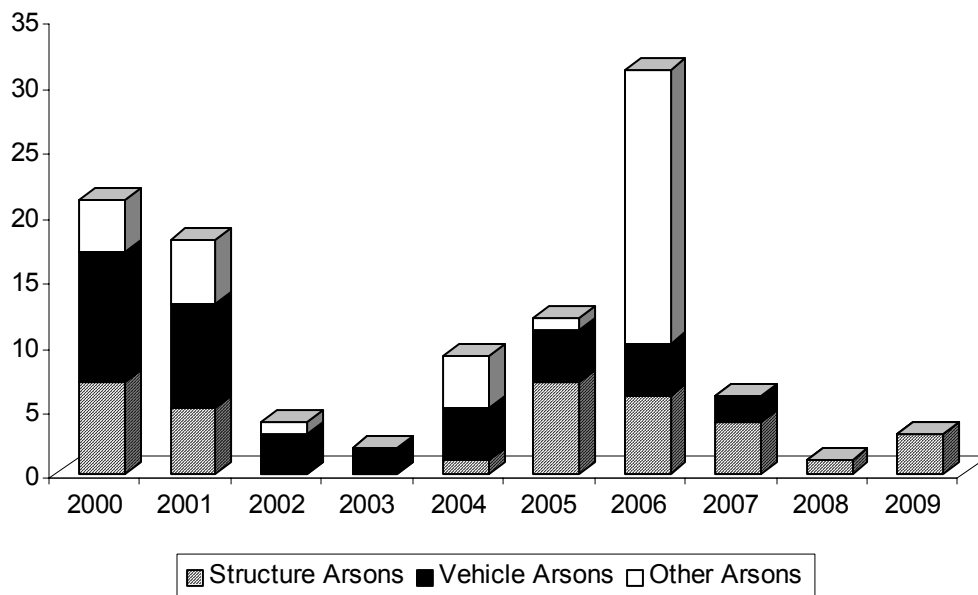
### All Arson Up Slightly

The total number of reported arson fires increased by two from the one reported in 2008. All three 2009 arsons were structure arsons. Reported motor vehicle arsons and outside arsons remained the same with no reported arsons in 2008 and in 2009.

<sup>45</sup> In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.



## Revere Arsons by Incident Type



## STRUCTURE FIRES

### Structure Fires Down

The 377 structure fires caused one civilian injury, two fire service injuries and an estimated dollar loss of \$397,800. These fires accounted for 91% of the fires Revere reported in 2009. Structure fires decreased by 22 from the 399 reported during 2008.

### 3 Structure Arsons in 2009

There were three reported structure arsons in Revere. Arson was indicated as the cause of less than 1% of the structure fires and accounted for 0.1% of Revere's structure fire dollar loss. The three structure arsons accounted for 100% of the Revere arson fires reported in 2009. The total number of reported structure arsons increased by two from one in 2008.

## BUILDING FIRES

There were 377 building fires of different types in Revere in 2009. These 377 building fires accounted for all structure fires in Revere.

### 82% of Building Fires in Homes

The 377 building fires that occurred in Revere in 2009 can be broken down by fixed property use as follows: 309, or 82%, of all the building fires, were in residential properties; 24 fires occurred in public assembly properties; 14 fires took place in mercantile and office properties; another 14 fires occurred in special properties; 13 fires

happened in institutional facilities; two fires occurred at educational facilities; and one fire was in storage facility.

## **RESIDENTIAL BUILDING FIRES**

### **82% of Building Fires Occurred in Residences**

Three hundred and nine (309), or 82%, of the 377 building fires occurred in residences. The 309 residential building fires reported in 2009 caused one civilian injury, two fire service injuries and an estimated dollar loss of \$388,800.

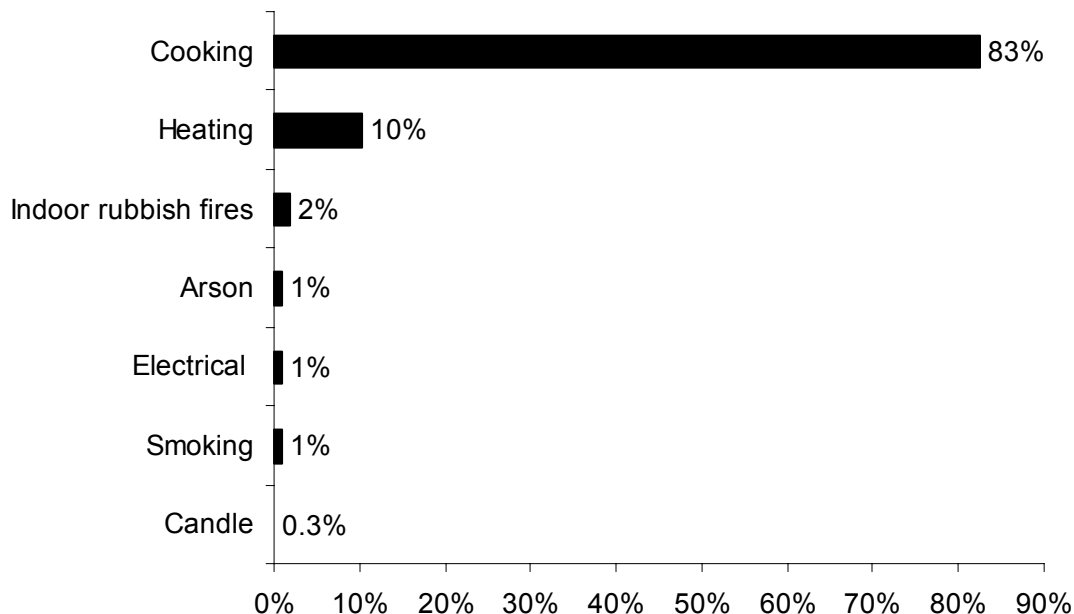
### **Apartments Accounted for 60% of Residential Building Fires**

The peak fixed property uses for residential building fires were apartments accounting for 60% of the residential building fires in Revere; 38% occurred in 1- or 2-family homes; 2% took place in hotels or motels; and less than 1% occurred in residential board and care facilities.

### **Unsafe Cooking Causes 83% of Residential Fires**

Cooking was the leading cause of fires in Revere's residential properties in 2009, accounting for 83% of these fires. Heating equipment caused 10% of residential building fires in 2009. Indoor rubbish fires were responsible for 2% of these fires. Arson, electrical problems, and smoking caused 1% of these fires. Candles accounted for less than 1% of the residential building fires in Revere in 2009.

## **Causes of Residential Fires**



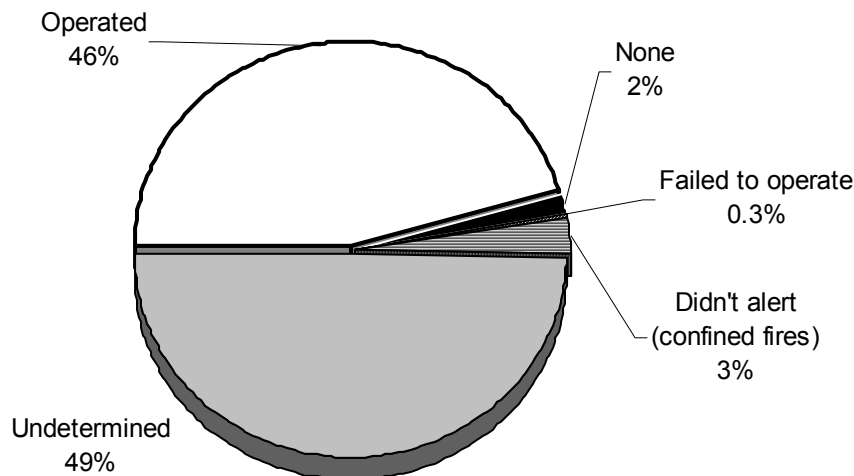
### 93% of Residential Building Fires Are Confined to Non-Combustible Containers<sup>2</sup>

Two hundred and eighty-seven (287), or 93% of all residential building fires, were reported as confined to non-combustible containers in 2009. Two hundred and forty-nine (249) of the confined fires were cooking fires contained to a non-combustible container and accounted for 81% of residential building fires. Thirty-two (32), or 10%, of the confined fires were fires confined to a fuel burner or boiler malfunction. Six (6), or 2%, were confined indoor rubbish fires.

### Detectors Alerted Occupants in 46% of Fires

Smoke or heat detectors operated and alerted the occupants in 144, or 46%, of the residential building fires. In 3% of these fires<sup>46</sup>, the detectors did not alert the occupants. Detectors were present but did not operate in less than 1% of these incidents. In 2% of these fires, no detectors were present at all. There were no reported fires where the fire was too small to trigger the detector. Smoke detector performance was undetermined in 154 incidents, or 49% of Revere's residential building fires.

### Detector Status in Revere's Residential Structure Fires 2009



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

<sup>46</sup> These represent confined fires where it was reported that the detector did not alert the occupants.

## MOTOR VEHICLE FIRES

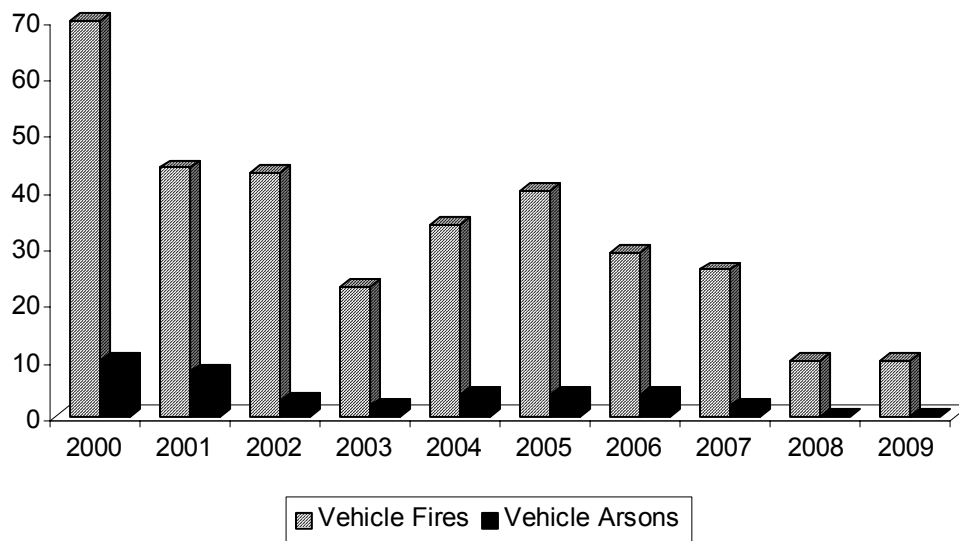
### Motor Vehicle Fires Remain the Same

There were 10 motor vehicle fires in Revere in 2009 that caused an estimated \$10,750 in damages. Motor vehicle fires comprised 2% of Revere's reported fires in 2009. The total number of motor vehicle fires remained the same with 10 reported in both 2008 and 2009.

### No Motor Vehicles Arsons

For the second year in a row there were no reported motor vehicle fires that were considered intentionally set.

## Motor Vehicle Fires & Arsons in Revere 2000 - 2009



## OUTSIDE AND OTHER FIRES

### Outside and Other Fires Down

There were 27 outside and other fires reported to MFIRS in 2009. These 27 fires included 23 outside rubbish fires and four unclassified fires. Outside and other fires comprised 7% of the 414 Revere fires reported in 2009. These 27 incidents are a 21% decrease in the number of outside and other fires in Revere from the 34 reported in 2008.

### No Outside and Other Arsons

For the third year in a row, Revere did not report any outside or other arsons.

## FATAL FIRES

There were no fatal fires in Revere in 2009.

## JUVENILE-SET FIRES

### No Juvenile-set Fires

In 2009, Revere did not report any juvenile-set fires.

## ALL CALLS

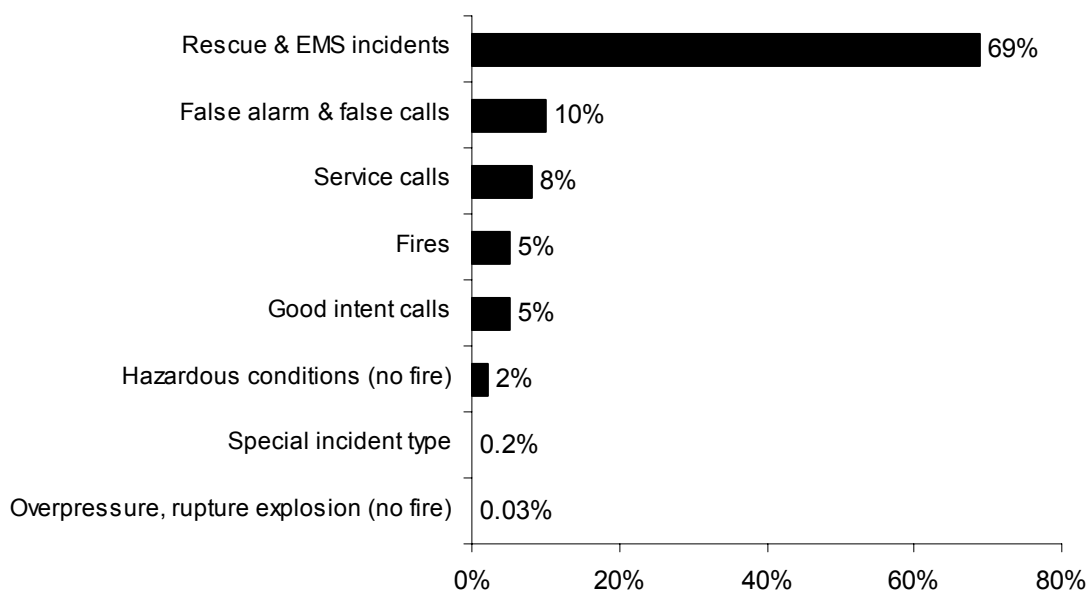
### Rescue & EMS Calls Are Over 2/3 of All Reported Responses

In 2009, the Revere Fire Department reported 7,938 total responses to MFIRS. Of these 7,938 responses, 7,521 non-fire calls were voluntarily reported.

Of these 7,521 non-fire calls, 5,472, or 69% of all the responses reported in 2009, were reported rescue and emergency medical services (EMS) calls; 805, or 10%, were reported false alarm or false calls; 640, or 8%, were reported service calls such as lock-outs, water or smoke problems, unauthorized burning or public service assistance; 412, or 5%, were reported good intent calls; 175, or 2%, were reported hazardous condition calls with no fire; 15, or 0.2%, were special incident type calls such as citizen complaints; and two, or 0.03%, were reported overpressure, rupture, explosion or overheat calls with no fire.

Four hundred and seventeen (417), or 5%, of the total responses submitted by the Revere Fire Department were fires.

### 2009 Revere Calls by Incident Type



**Revere Reported Giving Mutual Aid 156 Times**

In 2009, the Revere Fire Department reported coming to the aid of other fire departments 156 times. Of these 156 responses, 145, or 93%, were for service calls such as cover assignments; four, or 3%, were for a good intent calls; three, or 2%, were for fires; another three, or 2%, were for false alarms; and one, or 1%, was for a rescue or EMS incident.

**Revere Received Mutual Aid in 9 Incidents**

In 2009, the Revere Fire Department reported receiving aid from surrounding departments in nine incidents. Of these nine incidents, seven, or 78%, were for fires; one, or 11%, was for a hazardous condition call with no fire; and one, or 10%, was for a rescue or EMS call.

**CONCLUSIONS**

- **Structure Fires Were Down**

Structure fires decreased 22, or 6%, from the 399 reported in 2008. Motor vehicle fires remained the same and outside and other fires were down seven in 2009.

- **Cooking Caused 83% of Residential Fires**

The leading cause of Revere's residential building fires was unattended cooking and other unsafe cooking practices. This is where the department should focus its education and other prevention efforts. Two hundred and fifty-five (255), or 83%, of Revere's residential building fires were attributed to cooking. Two hundred and forty-nine (249) of these were confined cooking fires.

- **Heating Equipment Fires Second Leading Cause**

The second leading cause of residential fires in Revere was heating equipment fires accounting for 10% of the residential fires. This is the sixth year in a row that heating equipment was the second leading cause of residential fires in Revere.

- **93% of Residential Building Fires Were Confined Fires**

The majority were residential fires in 2009 were confined fires. Two hundred and eighty-seven (287), or 93%, of the 309 residential building fires in Revere in 2009 were confined to their non-combustible containers.

- **Only 3 Arsons in Revere in 2009**

In 2009, Revere reported three structure arsons and no motor vehicle or outside and other arsons.

- **Smoke Detectors Operated in Just 46% Residential Fires**

Smoke or heat detectors operated in 141, or 46%, of the 309 residential fires. Unfortunately in 154 incidents, or 49% of residential fires, it was undetermined if smoke detectors were present or if they operated. Improved data collection would be helpful in order to better understand the relationship between fire casualties and smoke detector performance.

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

**Total Fires** **414** **\$417,650**

8.8 Fires/1,000 Population

| <b>Situation Found</b> | <b>Fires</b> | <b>% of Fires</b> | <b>Dollar Loss</b> |
|------------------------|--------------|-------------------|--------------------|
| Structure Fires        | 377          | 91%               | \$397,800          |
| Vehicle Fires          | 10           | 2%                | 10,750             |
| Other Fires            | 27           | 7%                | 9,100              |

2 Civilian Injuries      2 Fire Service Injuries

7.97 Structure fires/1,000 population

0.21 Vehicle fires /1,000 population

0.57 Other fires/1,000 population

**Building Fires: 377**

**Residential Building Fires: 309**

**Residential Building Fires Confined to Non-Combustible Containers: 287**

**Unconfined Residential Building Fires: 22**

1 Civilian Injury      2 Fire Service Injuries

| <b>Occupancy</b>    | <b>Fires</b> | <b>%</b> | <b>Detector Status</b>  | <b>Fires</b> | <b>%</b> |
|---------------------|--------------|----------|-------------------------|--------------|----------|
| Apartments          | 185          | 60%      | Operated                | 141          | 46%      |
| 1- & 2-Family homes | 117          | 38%      | Didn't operate          | 1            | 0.3%     |
| Hotels/motels       | 7            | 2%       | None                    | 5            | 2%       |
|                     |              |          | Fire too small          | 0            | 0%       |
|                     |              |          | Didn't alert (confined) | 8            | 3%       |
|                     |              |          | Undetermined            | 154          | 49%      |

| <b>Area of Origin<sup>47</sup></b> | <b>%</b> | <b>Heat Source</b>          | <b>%</b> | <b>%Unconfined<sup>48</sup></b> |
|------------------------------------|----------|-----------------------------|----------|---------------------------------|
| Kitchen                            | 83%      | Radiated heat from op. eq.  | 1%       | 1%                              |
| Heating room or area               | 10%      | Spark, ember, flame op. eq. | 1%       | 1%                              |
| Bedroom                            | 1%       | Arcing                      | 1%       | 1%                              |
| Wall surface, exterior             | 1%       | Cigarettes                  | 1%       | 1%                              |

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

<sup>48</sup> These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Heat Source from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires, but is sometimes voluntarily reported.

| <b>Item First Ignited<sup>49</sup></b> | <b>%</b> | <b>Factor Contrib. to Ignit.</b> | <b>%</b> | <b>%Unconfined<sup>50</sup></b> |
|--|----------|----------------------------------|----------|---------------------------------|
| Food, cooking materials                | 82%      | Abandoned materials              | 1%       | 9%                              |
| Flammable, combustible liquid          | 10%      | Too close to combustibles        | 1%       | 9%                              |
| Rubbish, trash, waste                  | 2%       | Elec. fail., malfunc., other     | 0.3%     | 5%                              |
| Electrical wire/cable insulation       | 1%       | Eq. not used for purpose         | 0.3%     | 5%                              |
|  |          | Storm                            | 0.3%     | 5%                              |

| <b>Equipment<sup>51</sup></b>     | <b>%</b> | <b>Cause of Ignition</b>   | <b>%</b> | <b>%Unconfined<sup>52</sup></b> |
|-----------------------------------|----------|----------------------------|----------|---------------------------------|
| Cooking equipment                 | 81%      | Unintentional              | 3%       | 41%                             |
| Boiler, furnace, cent. heat. unit | 10%      | Failure of eq./heat source | 1%       | 14%                             |
| None                              | 6%       | Intentional                | 1%       | 14%                             |
|                                   |          | Undetermined               | 1%       | 18%                             |
|                                   |          | Cause under investigation  | 9%       | 9%                              |

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

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

| <b>Mutual Aid Given</b> | <b># of Incidents</b> |
|-------------------------|-----------------------|
| Chelsea                 | 78                    |
| Malden                  | 11                    |
| Winthrop                | 5                     |
| Everett                 | 5                     |
| Melrose                 | 1                     |

<sup>49</sup> This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

<sup>50</sup> Some fields in version 5 allow for multiple entries. Therefore the number of entries may be greater than the actual number of incidents being analyzed. These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Factors Contributing to Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

<sup>51</sup> This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

<sup>52</sup> These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Cause of Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.



| <b>Month</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|--------------|------------------------|----------------------------|--------------------------|------------------------|
| January      | 37                     | 36                         | 1                        | 0                      |
| February     | 36                     | 31                         | 2                        | 3                      |
| March        | 26                     | 24                         | 0                        | 2                      |
| April        | 37                     | 33                         | 0                        | 4                      |
| May          | 22                     | 18                         | 1                        | 3                      |
| June         | 28                     | 26                         | 2                        | 0                      |
| July         | 39                     | 36                         | 0                        | 3                      |
| August       | 34                     | 26                         | 3                        | 5                      |
| September    | 47                     | 44                         | 0                        | 3                      |
| October      | 23                     | 21                         | 0                        | 2                      |
| November     | 46                     | 45                         | 0                        | 1                      |
| December     | 39                     | 37                         | 1                        | 1                      |

| <b>Day</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|------------|------------------------|----------------------------|--------------------------|------------------------|
| Sunday     | 65                     | 62                         | 0                        | 3                      |
| Monday     | 65                     | 59                         | 2                        | 4                      |
| Tuesday    | 56                     | 52                         | 1                        | 3                      |
| Wednesday  | 67                     | 59                         | 3                        | 5                      |
| Thursday   | 52                     | 47                         | 3                        | 2                      |
| Friday     | 43                     | 38                         | 0                        | 5                      |
| Saturday   | 66                     | 60                         | 1                        | 5                      |

| <b>Time</b>   | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|---------------|------------------------|----------------------------|--------------------------|------------------------|
| 00:01 - 04:00 | 22                     | 20                         | 0                        | 2                      |
| 04:01 - 08:00 | 28                     | 26                         | 0                        | 2                      |
| 08:01 - 12:00 | 87                     | 80                         | 3                        | 4                      |
| 12:01 - 16:00 | 77                     | 74                         | 2                        | 1                      |
| 16:01 - 20:00 | 140                    | 126                        | 4                        | 10                     |
| 20:01 - 00:00 | 60                     | 51                         | 1                        | 8                      |

### **Motor Vehicle Fires**

Total: 10

Automobiles: 10 (100%)

None of the automobile fires considered intentionally set.

## Arson Fires

**Total Arsons: 3** **\$500**

| <b>Situation</b> | <b>Arsons</b> | <b>% of Situation</b> | <b>% of Arson</b> | <b>Dollar Loss</b> |
|------------------|---------------|-----------------------|-------------------|--------------------|
| Structure Arsons | 3             | 1%                    | 100%              | \$500              |
| Vehicle Arsons   | 0             | 0%                    | 0%                | 0                  |
| Other Arsons     | 0             | 0%                    | 0%                | 0                  |

No Injuries

0.06 Arson fires/1,000 population

0.06 Structure arsons/1,000 population

0.00 Vehicle arsons /1,000 population

0.00 Other arsons/1,000 population

### Peak Times of Day for Arson Fires

| <b>Structure Arsons</b> | <b>#</b> | <b>%</b> | <b>Vehicle Arsons</b> | <b>#</b> | <b>%</b> |
|-------------------------|----------|----------|-----------------------|----------|----------|
| 04:01 - 08:00           | 2        | 67%      |                       |          |          |
| 00:01 - 04:00           | 1        | 33%      |                       |          |          |

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

| <b>Occupancy</b>     | <b>#</b> | <b>%</b> |
|----------------------|----------|----------|
| 1- or 2-Family homes | 3        | 100%     |

# Winthrop Fires in 2009

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## **89 Fires — 36 Structure Fires, 2 Vehicle Fires and 28 Other Fires**

The Town of Winthrop reported 89 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2009. The 45 structure fires, 11 motor vehicle fires, 13 outside rubbish fires, seven brush and grass fires, six special outside fires and seven unclassified fires caused one civilian injury and an estimated loss of \$382,937. There were 4.9 fires for every 1,000 citizens in 2009. The statewide rate was 4.5 fires for every 1,000 people.

## **No Fire Deaths in 2009**

In 2009, the Town of Winthrop did not have any fire-related deaths.

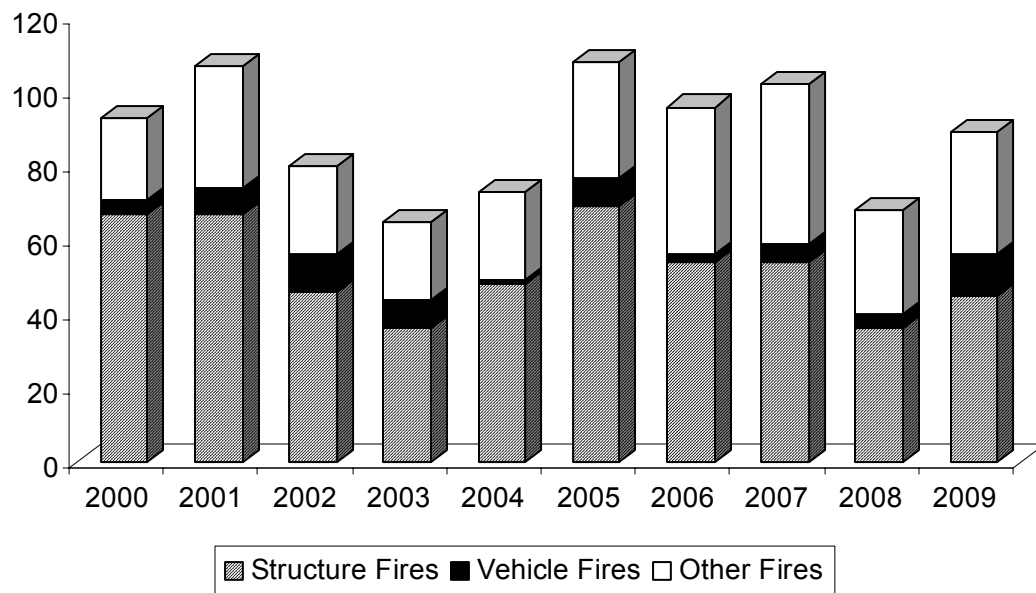
## **All Fires Up**

The total number of fires reported in Winthrop increased by 21 from 68 in 2008. Structure fires increased by nine from 36 reported in 2008. Motor vehicle fires increased by seven from four in 2008. Outside and other fires increased by five from 28 in 2008.

## **WINTHROP FIRES FROM 2000 TO 2009**

| <b>Year</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> | <b>Total<br/>Arsons</b> | <b>Structure<br/>Arsons</b> | <b>Vehicle<br/>Arsons</b> | <b>Other<br/>Arsons</b> |
|-------------|------------------------|----------------------------|--------------------------|------------------------|-------------------------|-----------------------------|---------------------------|-------------------------|
| 2000        | 93                     | 67                         | 4                        | 22                     | 11                      | 2                           | 1                         | 8                       |
| 2001        | 107                    | 67                         | 7                        | 33                     | 13                      | 1                           | 1                         | 11                      |
| 2002        | 80                     | 46                         | 10                       | 24                     | 9                       | 1                           | 5                         | 3                       |
| 2003        | 65                     | 36                         | 8                        | 21                     | 8                       | 2                           | 1                         | 5                       |
| 2004        | 73                     | 48                         | 1                        | 24                     | 11                      | 4                           | 1                         | 6                       |
| 2005        | 108                    | 69                         | 8                        | 31                     | 7                       | 1                           | 0                         | 6                       |
| 2006        | 96                     | 54                         | 2                        | 40                     | 13                      | 2                           | 0                         | 11                      |
| 2007        | 102                    | 54                         | 5                        | 43                     | 11                      | 3                           | 0                         | 8                       |
| 2008        | 68                     | 36                         | 4                        | 28                     | 7                       | 1                           | 0                         | 6                       |
| 2009        | 89                     | 45                         | 11                       | 33                     | 8                       | 1                           | 1                         | 6                       |

## Winthrop Fires by Incident Type

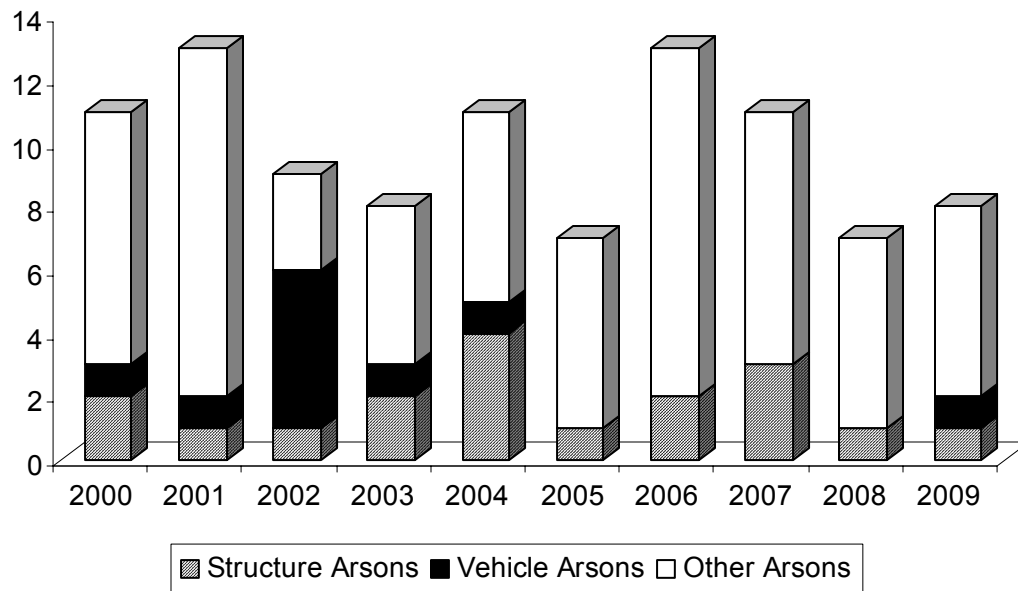


### 8 of Winthrop's Fires Considered Arson

Eight (8), or 9%, of the 89 Winthrop fires were considered intentionally set, or, for purposes of this analysis, arson<sup>53</sup>. The one structure arson, one motor vehicle arson and six outside and other arsons caused an estimated dollar loss of \$31,400.

<sup>53</sup> In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

## Winthrop Arsons by Incident Type



## STRUCTURE FIRES

### Structure Fires Up

The 45 structure fires caused one civilian injury and an estimated dollar loss of \$293,260. These incidents represented 51% of Winthrop's reported fires in 2009. This is an increase of nine structure fires from 2008.

### Arson Caused of 2% of Structure Fires

The one structure arson caused an estimated dollar loss of \$200. Arson was indicated as the cause of 2% of the structure fires. The structure arson accounted for 13% of the Winthrop arson fires reported in 2009. The total number of reported structure arsons remained the same with one reported in both 2008 and 2009.

## BUILDING FIRES

There were 43 building fires of different types in Winthrop in 2009. These 43 building fires accounted for 95.6% of the structure fires in Winthrop.

### 91% of Building Fires in Homes

The 43 building fires that occurred in Winthrop in 2009 can be broken down by fixed property use as follows: 39, or 91%, of all the building fires reported in 2009, were in residential properties; one occurred in a public assembly property; one fire happened at a mercantile or business property; one fire occurred in an educational facility; and one fire happened at a storage facility.

## RESIDENTIAL BUILDING FIRES

### 91% of Winthrop's Building Fires Occurred in Residences

Thirty-nine (39), or 81%, of Winthrop's 43 reported building fires occurred in residential occupancies. There was no reported residential building arson in 2009.

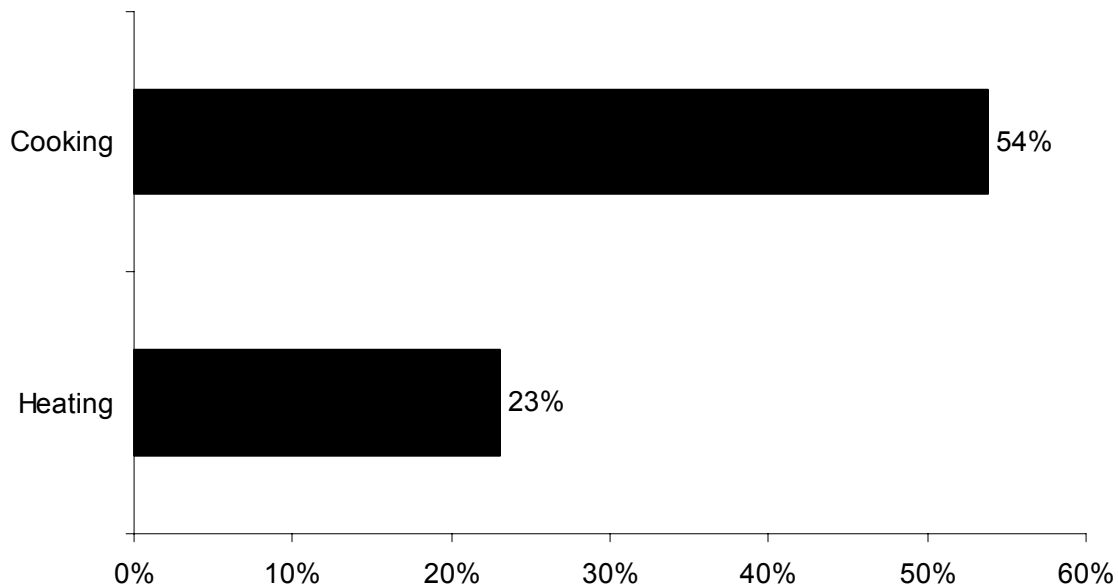
### 1- & 2-Family Homes Accounted for Over 1/2 of Residential Building Fires

The peak fixed property uses for residential building fires were one- and two-family homes, accounting for 51% of the residential building fires in Winthrop; and 49% occurred in apartments.

### Unsafe Cooking Practices Caused Over 1/2 of Winthrop's Residential Fires

Cooking was the leading cause of fires in Winthrop residential properties in 2009, accounting for 54%. Heating equipment fires were the second leading cause, accounting for 23% of the fires in Winthrop's homes in 2009.

## Causes of Residential Fires



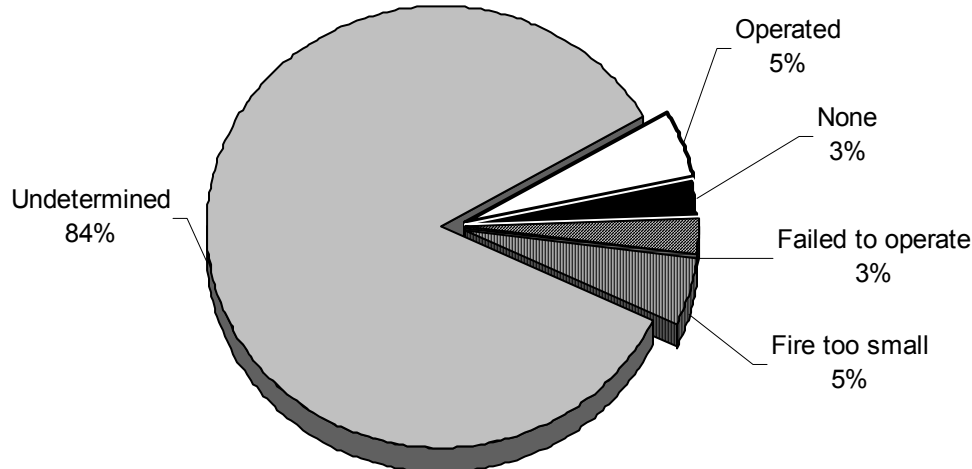
### 72% of Residential Building Fires Are Confined to Non-Combustible Containers<sup>54</sup>

Twenty-eight (28), or 72% of all residential building fires, were reported as confined to non-combustible containers in 2009. Nineteen (19) of the reported fires were cooking fires contained to a non-combustible container accounting for 49% of residential building fires. Nine (9), or 23%, were fires confined to a fuel burner or boiler malfunction.

### Detectors Alerted Occupants in Only 5% of Fires

Smoke or heat detectors operated and alerted the occupants in two, or 5%, of the residential building fires. Winthrop did not report any fires, where the detectors did not alert the occupants<sup>55</sup>. The detectors were present but did not operate in 3% of these fires. In another 3% of these fires, no detectors were present at all. In 5% of reported fires the fire was too small to trigger the detector. Smoke detector performance was undetermined in 33 incidents, or 84% of Winthrop's residential building fires.

### Detector Status in Winthrop's Residential Structure Fires 2009



<sup>54</sup> In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved in Ignition. These incidents are not included in the analysis of these fields.

<sup>55</sup> These represent confined fires where it was reported that the detector did not alert the occupants.

## MOTOR VEHICLE FIRES

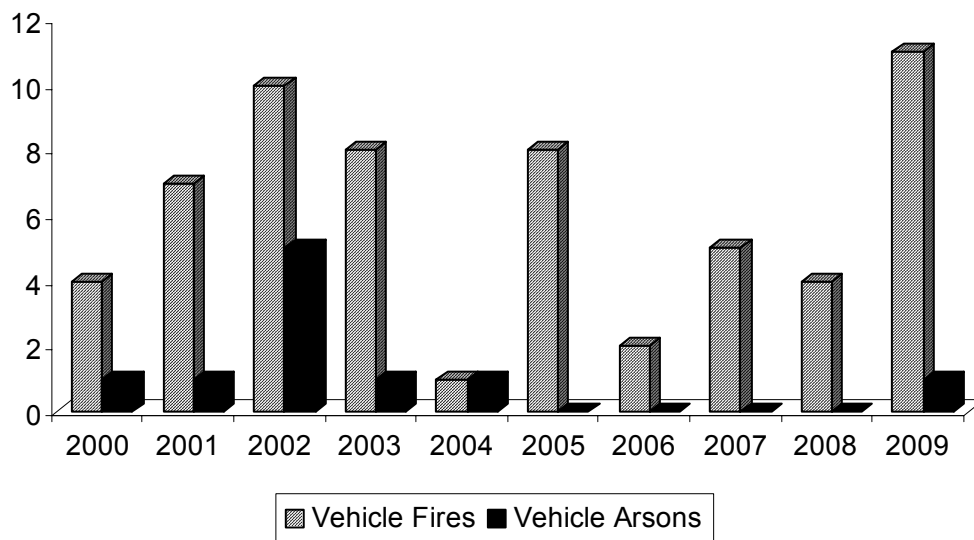
### 11 Motor Vehicle Fires Reported in 2009

The 11 motor vehicle fires caused an estimated dollar loss of \$75,000. Motor vehicle fires comprised 12% of Winthrop's 89 reported fires in 2009. Motor vehicle fires increased by seven, or 175%, from the four fires reported in 2008.

### 9% of Motor Vehicle Fires Considered Arson

One (1), or 9%, of Winthrop's 11 motor vehicle fires was determined to be intentionally set. This motor vehicle arson caused an estimated dollar loss of \$30,000. The total number of motor vehicle arsons increased by one, or 100%, from the none reported in 2008.

**Motor Vehicle Fires & Arsons  
in Winthrop 2000 - 2009**



## OUTSIDE AND OTHER FIRES

### Outside and Other Fires Account for 37% of Winthrop Fires

The Winthrop Fire Department reported 33 outside and other fires to the Massachusetts Fire Incident Reporting System in 2009, an increase of five from 28 in 2008. The 13 outside rubbish fires, seven brush and grass fires, six special outside fires, and seven unclassified fires caused an estimated dollar loss of \$1,200. Outside and other fires comprised 37%, of the 89 Winthrop fires reported in 2009.

### 18% of Outside & Other Fires considered Arson



Six (6), or 18%, of the 33 outside and other fires were considered intentionally set. There were four outside rubbish arsons, one special outside arson and one unclassified arson. This is a decrease of two, or 25%, from eight arsons reported in 2008. Outside and other arson comprised 86% of Winthrop's total seven arsons.

## JUVENILE-SET FIRES

### 1 Juvenile-set Fire

There was one reported juvenile-set fire in Winthrop in 2009, and it was a brush fire.

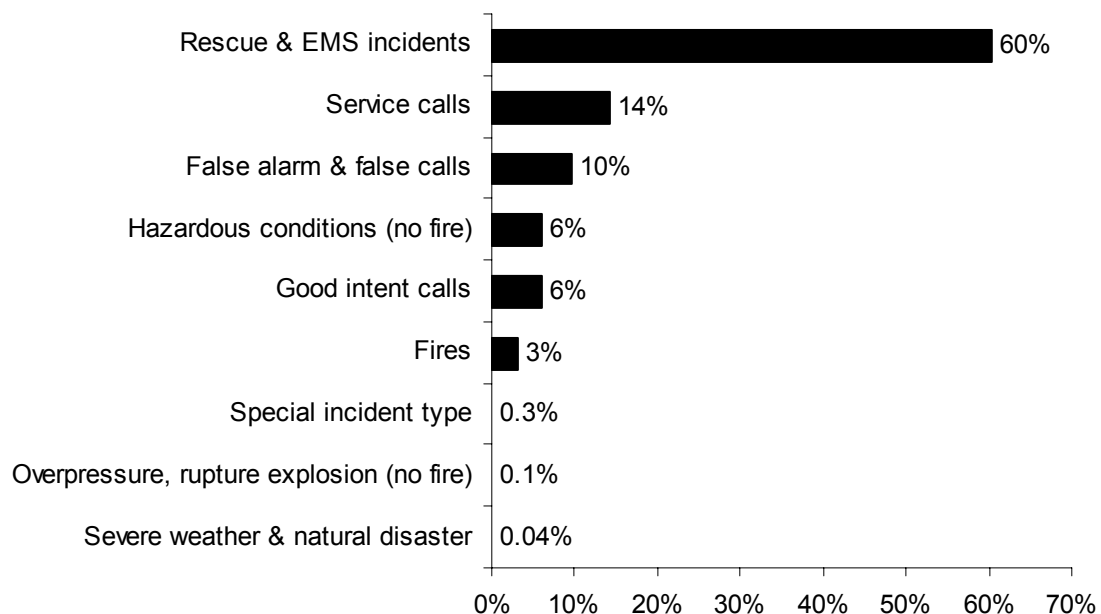
## ALL CALLS

### Rescue & EMS Calls Are 60% of All Reported Responses

In 2009, the Winthrop Fire Department reported 2,801 total responses to MFIRS. Of these 2,801 responses, 2,712 non-fire calls were voluntarily reported.

Of these 2,712 non-fire calls, 1,691, or 60% of all the responses reported in 2009, were reported rescue and emergency medical services (EMS) calls; 396, or 14%, were reported service calls such as lock-outs, water or smoke problem, unauthorized burning or public service assistance; 269, or 10%, were reported false alarm or false calls; 172, or 6%, were reported hazardous condition calls with no fire; 171, or 6%, were reported good intent calls; 9, or 0.3%, were special incident type calls such as citizen complaints; three, or 0.1%, were reported overpressure, rupture, explosion or overheat calls with no fire; and one, or 0.04%, was a severe weather call.

## 2009 Winthrop Calls by Incident Type



Eighty-nine (89), or 3%, of the total responses submitted by the Winthrop Fire Department were fires.

**Winthrop Reported Receiving Mutual Aid 4 Times**

In 2009, the Winthrop Fire Department reported receiving aid from surrounding departments four times. Three, or 75%, of the calls were for fires; one, or 25%, was a service call.

**Winthrop Did Not Report Giving Mutual Aid**

Winthrop did not report coming to the aid of any other fire departments in 2009.

**CONCLUSIONS**

- **Most Building Fires in Homes**

81% of building fires occurred in residences.

- **Cooking Caused 45% of Residential Fires**

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

- **Heating Caused 17% of Residential Fires**

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

- **Smoke Detectors Status Undetermined in 77% Residential Fires**

It was undetermined if smoke detectors sounded the alarm in 77% of the residential fires. This could be an area of focus for improved data collection and reporting. This would help to better understand the relationship between fire casualties and smoke detector performance. Detector performance was not collected in any of the 28 confined fires in 2009.

- **All Fires Decrease**

All types of reported fires, structure, motor vehicle and outside and other fires decreased from 2008 to 2009.

**Winthrop****FDID: 25346****Population: 18,303****Total Fires                      89                      \$382,987**

4.87 Fires/1,000 Population

| <b>Situation Found</b> | <b>Fires</b> | <b>% of Fires</b> | <b>Dollar Loss</b> |
|------------------------|--------------|-------------------|--------------------|
| Structure Fires        | 45           | 11%               | \$293,260          |
| Vehicle Fires          | 11           | 12%               | 75,000             |
| Other Fires            | 33           | 37%               | 14,677             |

1 Civilian Injury

2.5 Structure fires/1,000 population

0.6 Vehicle fires /1,000 population

1.8 Other fires/1,000 population

**Building Fires:              43****Residential Building Fires: 39****Residential Building Fires Confined to Non-Combustible Containers: 28****Unconfined Residential Building Fires: 11**

| <b>Occupancy</b>    | <b>Fires</b> | <b>%</b> | <b>Detector Status</b>  | <b>Fires</b> | <b>%</b> |
|---------------------|--------------|----------|-------------------------|--------------|----------|
| 1- & 2-Family homes | 20           | 51%      | Operated                | 2            | 5%       |
| Apartments          | 19           | 49%      | Didn't operate          | 1            | 3%       |
|                     |              |          | None                    | 1            | 3%       |
|                     |              |          | Fire too small          | 2            | 5%       |
|                     |              |          | Didn't alert (confined) | 0            | 0%       |
|                     |              |          | Undetermined            | 33           | 84%      |

| <b>Area of Origin<sup>56</sup></b> | <b>%</b> | <b>Heat Source</b>        | <b>%</b> | <b>%Unconfined<sup>57</sup></b> |
|------------------------------------|----------|---------------------------|----------|---------------------------------|
| Kitchen                            | 56%      | Heat operating equipment  | 18%      | 64%                             |
| Heating room or area               | 23%      | Spark/ember/flame op. eq. | 5%       | 18%                             |
| Bathroom                           | 8%       | Hot ember or ash          | 3%       | 9%                              |

| <b>Item First Ignited<sup>58</sup></b> | <b>%</b> | <b>Factor Contrib. to Ignit.</b> | <b>%</b> | <b>%Unconfined<sup>59</sup></b> |
|--|----------|----------------------------------|----------|---------------------------------|
|--|----------|----------------------------------|----------|---------------------------------|

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

<sup>57</sup> These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Heat Source from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires, but is sometimes voluntarily reported.

|                               |     |                           |    |    |
|-------------------------------|-----|---------------------------|----|----|
| Food, cooking materials       | 54% | Too close to combustibles | 3% | 9% |
| Flammable, combustible liquid | 23% | Mech. failure/malfunction | 3% | 9% |
| Structural member, framing    | 8%  | Failure to clean          | 3% | 9% |

| <b>Equipment<sup>60</sup></b>     | <b>%</b> | <b>Cause of Ignition</b>      | <b>%</b> | <b>%Unconfined<sup>61</sup></b> |
|-----------------------------------|----------|-------------------------------|----------|---------------------------------|
| Cooking equipment                 | 49%      | Unintentional                 | 8%       | 27%                             |
| None                              | 28%      | Failure of eq. or heat source | 10%      | 36%                             |
| Boiler, furnace, cent. heat. unit | 23%      | Intentional                   | 0%       | 0%                              |
| Knife Sharpener                   | 3%       | Cause under investigation     | 0%       | 0%                              |
|                                   |          | Undetermined                  | 8%       | 27%                             |

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

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

<sup>58</sup> This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

<sup>59</sup> Some fields in version 5 allow for multiple entries. Therefore the number of entries may be greater than the actual number of incidents being analyzed. These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Factors Contributing to Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

<sup>60</sup> This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

<sup>61</sup> These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Cause of Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

| <b>Month</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|--------------|------------------------|----------------------------|--------------------------|------------------------|
| January      | 3                      | 2                          | 0                        | 1                      |
| February     | 6                      | 5                          | 0                        | 1                      |
| March        | 3                      | 1                          | 1                        | 1                      |
| April        | 8                      | 4                          | 2                        | 2                      |
| May          | 12                     | 4                          | 1                        | 7                      |
| June         | 15                     | 6                          | 2                        | 7                      |
| July         | 13                     | 3                          | 3                        | 7                      |
| August       | 4                      | 3                          | 1                        | 0                      |
| September    | 8                      | 3                          | 1                        | 4                      |
| October      | 5                      | 5                          | 0                        | 0                      |
| November     | 8                      | 6                          | 0                        | 2                      |
| December     | 4                      | 3                          | 0                        | 1                      |

| <b>Day</b> | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|------------|------------------------|----------------------------|--------------------------|------------------------|
| Sunday     | 16                     | 5                          | 3                        | 8                      |
| Monday     | 12                     | 8                          | 2                        | 2                      |
| Tuesday    | 10                     | 4                          | 3                        | 3                      |
| Wednesday  | 9                      | 5                          | 0                        | 4                      |
| Thursday   | 16                     | 10                         | 2                        | 4                      |
| Friday     | 12                     | 7                          | 1                        | 4                      |
| Saturday   | 14                     | 6                          | 0                        | 8                      |

| <b>Time</b>   | <b>Total<br/>Fires</b> | <b>Structure<br/>Fires</b> | <b>Vehicle<br/>Fires</b> | <b>Other<br/>Fires</b> |
|---------------|------------------------|----------------------------|--------------------------|------------------------|
| 00:01 - 04:00 | 4                      | 2                          | 1                        | 1                      |
| 04:01 - 08:00 | 4                      | 3                          | 0                        | 1                      |
| 08:01 - 12:00 | 12                     | 11                         | 0                        | 1                      |
| 12:01 - 16:00 | 24                     | 11                         | 5                        | 8                      |
| 16:01 - 20:00 | 28                     | 15                         | 2                        | 11                     |
| 20:01 - 00:00 | 17                     | 3                          | 3                        | 11                     |

### **Motor Vehicle Fires**

Total: 11

Automobiles: 8 (73%)

1 (13%) of the automobile fires were considered to be intentionally set.

## Arson Fires

**Total Arsons: 11**

**\$31,400**

| <b>Situation</b> | <b>Arsons</b> | <b>% of Situation</b> | <b>% of Arson</b> | <b>Dollar Loss</b> |
|------------------|---------------|-----------------------|-------------------|--------------------|
| Structure Arsons | 1             | 3%                    | 13%               | \$200              |
| Vehicle Arsons   | 1             | 9%                    | 13%               | 30,000             |
| Other Arsons     | 6             | 18%                   | 75%               | 1,200              |

No Injuries

0.44 Arson fires/1,000 population

0.05 Structure arsons/1,000 population

0.05 Vehicle arsons /1,000 population

0.33 Other arsons/1,000 population

### Peak Times of Day for Arson Fires

| <b>Structure Arsons</b> | <b>#</b> | <b>%</b> | <b>Vehicle Arsons</b> | <b>#</b> | <b>%</b> |
|-------------------------|----------|----------|-----------------------|----------|----------|
| 12:01 - 16:00           | 1        | 100%     | 12:01 – 16:00         | 1        | 100%     |

| <b>Other Arsons</b> | <b>#</b> | <b>%</b> |
|---------------------|----------|----------|
| 16:01 - 20:00       | 2        | 33%      |
| 20:01 - 00:00       | 2        | 33%      |

### Peak Fixed Property Uses for Structure Arsons

| <b>Occupancy</b>               | <b>#</b> | <b>%</b> |
|--------------------------------|----------|----------|
| High/junior high/middle school | 1        | 100%     |

# Appendix

## 2009 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   | 883           | 454             | 140           | 289          | 0               | 35                | 0                   | 37                    | \$7,581,342          |
| Berkshire    | 668           | 412             | 60            | 196          | 1               | 2                 | 0                   | 5                     | 5,874,520            |
| Bristol      | 1,774         | 796             | 306           | 672          | 7               | 39                | 0                   | 29                    | 12,904,955           |
| Dukes        | 19            | 8               | 5             | 6            | 0               | 0                 | 0                   | 0                     | 5,000                |
| Essex        | 2,775         | 1,642           | 333           | 800          | 0               | 18                | 0                   | 26                    | 18,346,492           |
| Franklin     | 302           | 163             | 27            | 116          | 0               | 3                 | 0                   | 5                     | 2,017,050            |
| Hampden      | 2,032         | 1,146           | 255           | 631          | 5               | 42                | 0                   | 58                    | 12,467,359           |
| Hampshire    | 535           | 250             | 58            | 227          | 3               | 16                | 0                   | 8                     | 8,625,479            |
| Middlesex    | 5,150         | 3,381           | 503           | 1,266        | 4               | 58                | 0                   | 106                   | 44,543,999           |
| Nantucket    | 38            | 26              | 3             | 9            | 0               | 0                 | 0                   | 0                     | 3,500                |
| Norfolk      | 2,780         | 1,845           | 275           | 660          | 4               | 16                | 0                   | 59                    | 11,322,050           |
| Plymouth     | 1,444         | 699             | 248           | 497          | 7               | 45                | 0                   | 30                    | 11,452,952           |
| Suffolk      | 6,386         | 4,768           | 475           | 1,143        | 0               | 13                | 0                   | 41                    | 29,517,460           |
| Worcester    | 3,850         | 2,183           | 381           | 1,241        | 5               | 45                | 0                   | 56                    | 18,433,647           |
| <b>Total</b> | <b>28,595</b> | <b>17,773</b>   | <b>3,069</b>  | <b>7,753</b> | <b>36</b>       | <b>332</b>        | <b>0</b>            | <b>460</b>            | <b>\$183,095,805</b> |

## 2009 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   | 66           | 16               | 3              | 47           | 0               | 3                 | 0                   | 0                     | \$330,742           |
| Berkshire    | 44           | 18               | 6              | 20           | 1               | 1                 | 0                   | 1                     | 186,175             |
| Bristol      | 137          | 53               | 18             | 66           | 0               | 3                 | 0                   | 1                     | 1,270,653           |
| Dukes        | 0            | 0                | 0              | 0            | 0               | 0                 | 0                   | 0                     | 0                   |
| Essex        | 186          | 32               | 19             | 135          | 0               | 0                 | 0                   | 0                     | 1,418,397           |
| Franklin     | 17           | 2                | 1              | 14           | 0               | 1                 | 0                   | 0                     | 700                 |
| Hampden      | 70           | 16               | 12             | 42           | 2               | 0                 | 0                   | 4                     | 733,950             |
| Hampshire    | 45           | 7                | 8              | 30           | 2               | 0                 | 0                   | 0                     | 787,926             |
| Middlesex    | 173          | 41               | 29             | 103          | 2               | 4                 | 0                   | 4                     | 1,455,204           |
| Nantucket    | 1            | 0                | 0              | 1            | 0               | 0                 | 0                   | 0                     | 0                   |
| Norfolk      | 58           | 8                | 5              | 45           | 0               | 2                 | 0                   | 1                     | 277,015             |
| Plymouth     | 75           | 22               | 22             | 31           | 0               | 2                 | 0                   | 3                     | 1,831,912           |
| Suffolk      | 129          | 36               | 36             | 57           | 0               | 0                 | 0                   | 0                     | 2,884,950           |
| Worcester    | 183          | 40               | 29             | 114          | 1               | 3                 | 0                   | 4                     | 758,176             |
| <b>Total</b> | <b>1,184</b> | <b>291</b>       | <b>188</b>     | <b>705</b>   | <b>8</b>        | <b>19</b>         | <b>0</b>            | <b>18</b>             | <b>\$11,935,530</b> |

\*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.



## 2009 Fires, Arsons and Deaths By County and By Population\*

| County               | Population       | Total<br>Fires | Fires per<br>1,000 Pop. | Fire<br>Deaths | Deaths per<br>1,000 Fires | Deaths per<br>10,000 Pop. | Total<br>Arsons | Arsons per<br>1,000 Pop. |
|----------------------|------------------|----------------|-------------------------|----------------|---------------------------|---------------------------|-----------------|--------------------------|
| Barnstable           | 222,230          | 883            | 4.0                     | 0              | 0.0                       | 0.00                      | 66              | 0.3                      |
| Berkshire            | 134,953          | 668            | 4.9                     | 1              | 1.5                       | 0.07                      | 44              | 0.3                      |
| Bristol              | 534,678          | 1,774          | 3.3                     | 7              | 3.9                       | 0.13                      | 137             | 0.3                      |
| Dukes                | 14,987           | 19             | 1.3                     | 0              | 0.0                       | 0.00                      | 0               | 0.0                      |
| Essex                | 723,419          | 2,775          | 3.8                     | 0              | 0.0                       | 0.00                      | 186             | 0.3                      |
| Franklin             | 71,535           | 306            | 4.3                     | 0              | 0.0                       | 0.00                      | 17              | 0.2                      |
| Hampden              | 456,228          | 2,032          | 4.5                     | 5              | 2.5                       | 0.11                      | 70              | 0.2                      |
| Hampshire            | 152,251          | 535            | 3.5                     | 3              | 5.6                       | 0.20                      | 45              | 0.3                      |
| Middlesex            | 1,465,396        | 5,150          | 3.5                     | 4              | 0.8                       | 0.03                      | 173             | 0.1                      |
| Nantucket            | 9,520            | 38             | 4.0                     | 0              | 0.0                       | 0.00                      | 1               | 0.1                      |
| Norfolk              | 650,308          | 2,780          | 4.3                     | 4              | 1.4                       | 0.06                      | 58              | 0.1                      |
| Plymouth             | 472,822          | 1,444          | 3.1                     | 7              | 4.8                       | 0.15                      | 75              | 0.2                      |
| Suffolk              | 689,807          | 6,386          | 9.3                     | 0              | 0.0                       | 0.00                      | 129             | 0.2                      |
| Worcester            | 750,963          | 3,805          | 5.1                     | 5              | 1.3                       | 0.07                      | 183             | 0.2                      |
| <b>Massachusetts</b> | <b>6,349,097</b> | <b>28,595</b>  | <b>4.5</b>              | <b>36</b>      | <b>1.3</b>                | <b>0.06</b>               | <b>1,184</b>    | <b>0.2</b>               |

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

## 2009 Non-Fire Responses By County and By Incident Type

| County               | Total<br>Non-Fire<br>Responses | Overpressure<br>Rupt. & Explos.<br>(No-fire) | Rescue<br>EMS<br>Incidents | Hazardous<br>Conditions<br>(No-fire) | Service<br>Calls | Good<br>Intent<br>Calls | False<br>Alarm<br>Calls | Severe WX <sup>1</sup><br>& Natural<br>Disaster | Special<br>Incident<br>Type |
|----------------------|--------------------------------|--|----------------------------|--------------------------------------|------------------|-------------------------|-------------------------|---|-----------------------------|
| Barnstable           | 37,298                         | 47   | 27,129                     | 1,865                                | 2,582            | 1,343                   | 4,156                   | 23  | 153                         |
| Berkshire            | 10,372                         | 13   | 5,882                      | 868                                  | 1,240            | 508                     | 1,796                   | 25  | 40                          |
| Bristol              | 41,484                         | 68   | 24,192                     | 2,399                                | 3,233            | 2,955                   | 8,322                   | 30  | 285                         |
| Dukes                | 131                            | 1  | 7                          | 3                                    | 5                | 1                       | 114                     | 0   | 0                           |
| Essex                | 72,417                         | 123  | 41,287                     | 3,968                                | 8,628            | 4,906                   | 12,998                  | 73  | 434                         |
| Franklin             | 5,575                          | 11   | 2,767                      | 400                                  | 999              | 535                     | 834                     | 14  | 214                         |
| Hampden              | 38,507                         | 77   | 23,326                     | 1,690                                | 3,090            | 3,488                   | 6,686                   | 13  | 137                         |
| Hampshire            | 11,106                         | 40   | 6,760                      | 693                                  | 673              | 622                     | 2,182                   | 11  | 125                         |
| Middlesex            | 144,955                        | 137  | 82,751                     | 9,927                                | 14,009           | 8,279                   | 24,896                  | 84  | 4,872                       |
| Nantucket            | 2,154                          | 0  | 1,014                      | 136                                  | 362              | 86                      | 551                     | 0   | 5                           |
| Norfolk              | 74,078                         | 109  | 45,997                     | 5,054                                | 7,006            | 3,938                   | 11,000                  | 34  | 940                         |
| Plymouth             | 43,468                         | 94   | 27,200                     | 3,527                                | 4,107            | 2,734                   | 5,553                   | 46  | 207                         |
| Suffolk              | 83,847                         | 97   | 45,696                     | 5,780                                | 10,607           | 6,323                   | 14,977                  | 11  | 356                         |
| Worcester            | 75,927                         | 152  | 50,403                     | 4,167                                | 5,780            | 3,885                   | 10,641                  | 78  | 821                         |
| <b>Massachusetts</b> | <b>641,519</b>                 | <b>970</b>                                   | <b>384,411</b>             | <b>40,477</b>                        | <b>62,321</b>    | <b>39,603</b>           | <b>104,706</b>          | <b>442</b>                                      | <b>8,589</b>                |

<sup>1</sup> WX is the abbreviation for Weather.