

# Brockton Fires in 2011

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## 452 Total Fires — 224 Structures, 55 Vehicles & 173 Other Fires

The Brockton Fire Department reported 452 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2011. The 224 structure fires, 55 motor vehicle fires, 61 brush fires, 49 outside rubbish fires, 37 special outside fires; one cultivated crop or vegetation fire; and 25 unclassified fires caused two civilian deaths, 24 civilian injuries, 11 firefighter injuries and an estimated dollar loss of \$2.1 million.

## 2 Brockton Residents Killed in 2 Electrical Fires

- On March 17, 2011, at 2:17 a.m., the Brockton Fire Department was called to a fatal electrical fire at a three-unit apartment building. Arcing from electrical wiring in the kitchen started the fire. The victim, a 41-year old woman was most likely sleeping at the time of the fire. Four (4) other civilians and one firefighter were injured at this fire. Detectors were present and alerted the other occupants to the fire. Sprinklers were not present. Damages were estimated to be \$85,000.
- On May 6, 2011, at 11:00 p.m., the Brockton Fire Department was called to a fatal electrical fire at a two-family home. The victim, a 46-year old woman was unfamiliar with the exits in the basement apartment and unable to act at the time of the fire. No one else was injured at this fire. It was undetermined if detectors were present. Sprinklers were not present. Damages were estimated to be \$135,000.

## All Fires Up in 2011

Total fires increased by 77 from the 375 incidents reported in 2010. Reported structure fires were up 43 from the 181 reported during the previous year. Motor vehicle fires increased by 14 from 41 the year before. Outside and other fires increased by 20 from the 153 reported in 2010.

## BROCKTON FIRES FROM 2007 TO 2011

	<b>Total Fires</b>	<b>Structure Fires</b>	<b>Vehicle Fires</b>	<b>Other Fires</b>	<b>Total Arsons</b>	<b>Structure Arsons</b>	<b>Vehicle Arsons</b>	<b>Other Arsons</b>
2007	311	211	59	41	18	13	4	1
2008	197	142	36	19	12	9	1	2
2009 <sup>1</sup>	199	138	35	26	17	11	5	1
2010 <sup>2</sup>	375	181	41	153	23	8	3	12
2011	452	224	55	173	46	9	3	34

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<sup>1</sup> July 2009 fires not included.

<sup>2</sup> 2010 is the first year that Brockton reported all of their fire incidents electronically in the version 5 format. This included all fires not just the fires mandated by statute. This is the main reason for the large increase in outside fires and subsequently total fires.

## **BUILDING FIRES**

There were 221 building fires of different types in Brockton in 2011. These 221 building fires accounted for 98.7% of all the structure fires in Brockton.

### **89% of Building Fires in Homes**

The 221 building fires that occurred in Brockton in 2011 can be broken down by fixed property use as follows: 197, or 89% of all building fires, were in residential properties; nine happened in mercantile or business properties; four fires occurred in institutional facilities; three fires happened in storage facilities; another three fires happened in a public assembly buildings; two fire each happened at educational facilities and special properties; and one fire occurred at a manufacturing facility.

## **RESIDENTIAL FIRES**

### **Residential Building Fires Up**

There were 197 reported residential building fires in Brockton in 2011. These 197 fires are an increase of 41 from the 156 reported residential building fires reported in 2010.

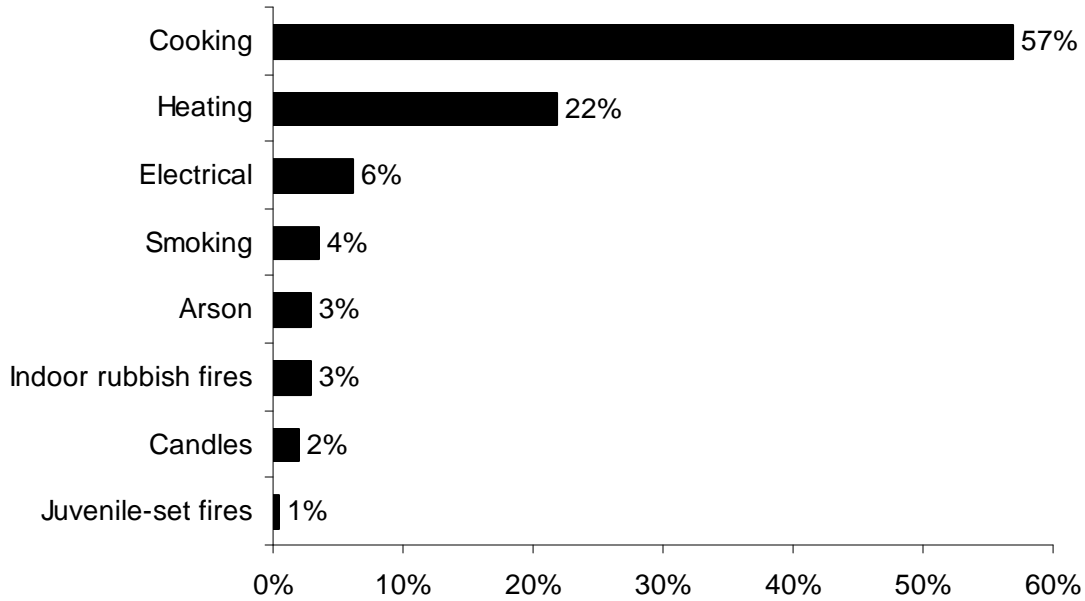
### **Apartments Accounted for 59% of Residential Building Fires**

The peak fixed property uses for residential building fires in Brockton were apartments, accounting for 59% of the building fires; 36% occurred in 1- or 2-family homes; 3% happened in residential board and care facilities; and 1% each happened in hotels or motels and dormitories. Another 1% occurred in unclassified residences.

### **Unattended Cooking Leading Cause of Residential Fires**

The leading cause of residential building fires in Brockton was unattended cooking and other unsafe cooking practices, accounting for 57% of these fires. Heating fires caused 22% of these fires. Electrical problems caused 6% of these fires. Smoking was the cause of 4% of Brockton's residential fires. Arsons and indoor rubbish fires each caused 3% of these fires. Candles caused 2% and juvenile-set fires caused 1% of the fires in Brockton's residential occupancies in 2011.

## 2011 Leading Causes of Fires in Brockton Homes



### 72% of Residential Building Fires Are Confined to Non-Combustible Containers<sup>3</sup>

One hundred and forty-two (142), or 72% of all residential building fires were confined to non-combustible containers in 2011. Ninety-seven (97), or 49%, of all residential building fires reported in 2011 were cooking fires contained to a non-combustible container. Thirty-nine (39), or 20%, were fires confined to a fuel burner or boiler malfunction. Five (5), or 3%, were confined indoor rubbish fires. One (1) fire, or 1%, was reported to have been contained to a chimney or flue.

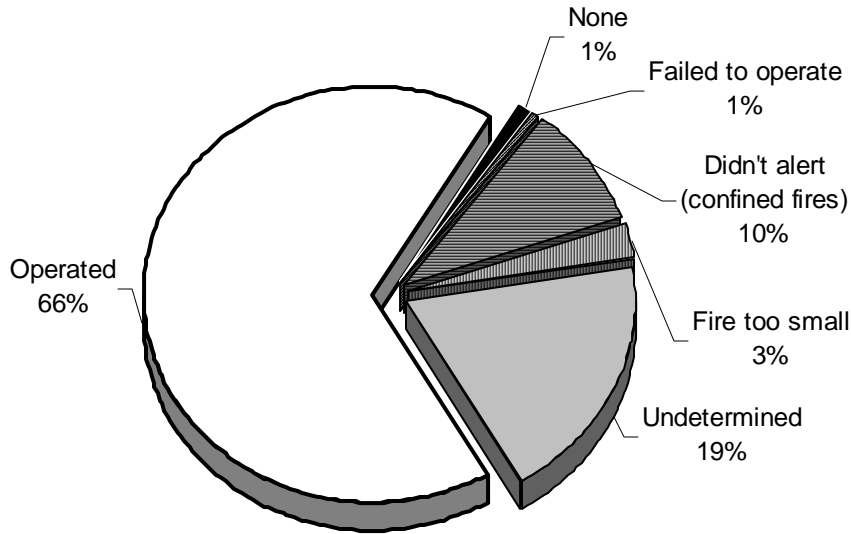
### Detectors Worked in 2/3 of Fires

Smoke or heat detectors operated and alerted the occupants in 132, or 66%, of the residential building fires. In 10% of these fires<sup>4</sup>, the detectors did not alert the occupants. Detectors were present but did not operate in 1% of these incidents. In 1% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 3% of these fires. Smoke detector performance was undetermined in 38 incidents, or 19% of Brockton's residential building fires.

<sup>3</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>4</sup> These represent confined fires where it was reported that the detector did not alert the occupants.

### Detector Status in Brockton's Residential Fires 2011



#### Undetermined Why the Detector Failed

It was undetermined in the one case why the detector failed to operate.

#### VACANT BUILDINGS

##### 1% of Building Fires Occurred in Vacant Buildings

Brockton reported three fires that occurred in buildings that were vacant, under construction or demolition. This represented 1% of the total 221 building fires reported to MFIRS in 2011. One (1) outbuilding or shed, one unclassified business and one elementary school were reported as vacant building fire incidents.

#### JUVENILE-SET FIRES

##### 2 Juvenile-set Fires in 2011

Brockton reported two juvenile-set fires in 2011. One was a building fire and the other was a special outside fire.

#### ARSONS

##### 46 Arsons - 9 Structure, 3 Motor Vehicle and 34 Outside & Other

Forty-six (46), or 10%, of Brockton's 452 fires were considered intentionally set, or, for purposes of this analysis, arson. There were nine structure arsons, three motor vehicle arsons and 34 outside and other arsons.

**All Arsons Up in 2011**

The total number of arsons increased by eight from the 23 reported in 2010. Reported structure arsons increased by one from the eight reported in 2010. Motor vehicle arsons remained the same with three reported in both 2010 and 2011. Outside and other arsons increased by 22 from the 12 reported the previous year.

**72 Fires Reported as Undetermined or Still Under Investigation**

In 2011, Brockton reported 72 fires under investigation or cause undetermined after investigation. Fifty-four (54), or 75%, of these fires were reported to be undetermined after investigation. The other 18, or 25%, were still under investigation.

Eleven (11), or 15%, of these 72 fires were structure fires. Twenty-eight (28), or 39% were motor vehicle fires; and 33, or 46%, were outside or other fires. Because so many fires or under investigation or undetermined after investigation, the true arson number might be actually higher in Brockton for 2011.

**ALL INCIDENTS****Rescue & EMS Incidents Are Almost 3/4 of All Reported Incidents<sup>5</sup>**

In 2011, Brockton voluntarily reported 19,768 incidents to MFIRS. Of these 19,768 incidents, 19,309, or 98% were non-fire incidents. For the first time since 2001, Brockton voluntarily reported all of their incidents to MFIRS.

Of these 19,309 non-fire incidents 14,477, or 73% of all reported incidents in 2011, were reported rescue and emergency medical services (EMS) calls; 2,550, or 13%, were reported false alarm or false calls; 1,053 incidents, or 5%, were service calls; 630, or 3%, were reported hazardous condition calls with no fire; 509, or 3%, were good intent calls; 46, or 0.2%, were severe weather or natural disaster calls; 25, or 0.1%, were overpressure, rupture or explosions with no after fire calls; and 19, or 0.1%, were special incident types.

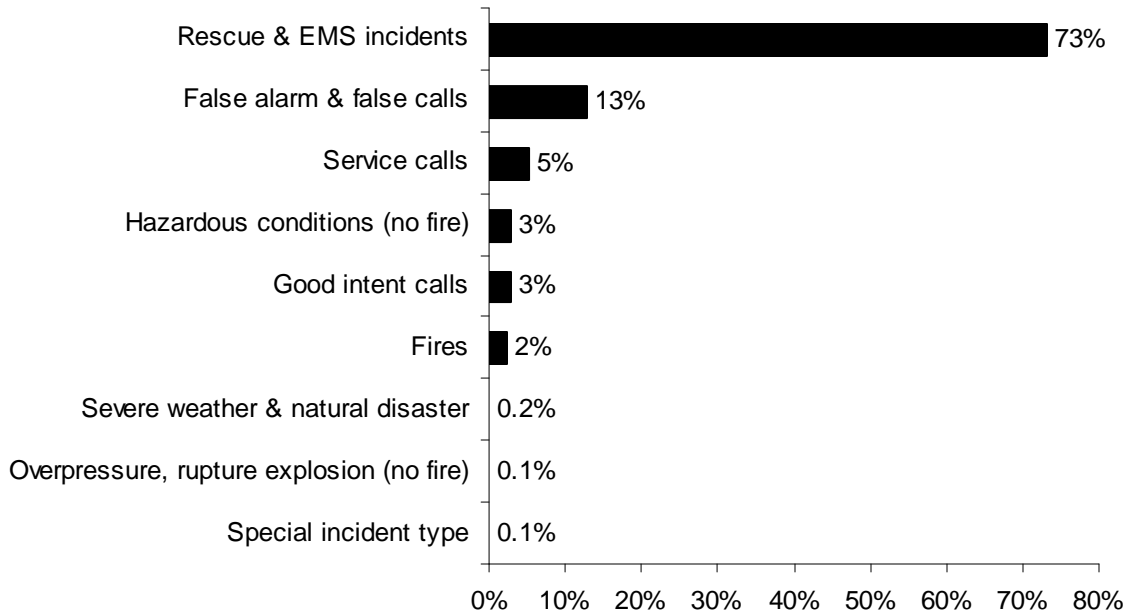
In 2011, Brockton reported 459 fires<sup>6</sup>, accounting for 2% of all reported incidents.

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<sup>5</sup> Brockton started to report all of their incidents in August of 2010. 2011 is the first year that Brockton reported all of their incidents for the entire year.

<sup>6</sup> This includes fires that Brockton responded to as mutual aid calls outside of their jurisdiction.

### 2011 Incidents by Incident Type



#### Brockton Gave Mutual Aid in 24 Reported Incidents

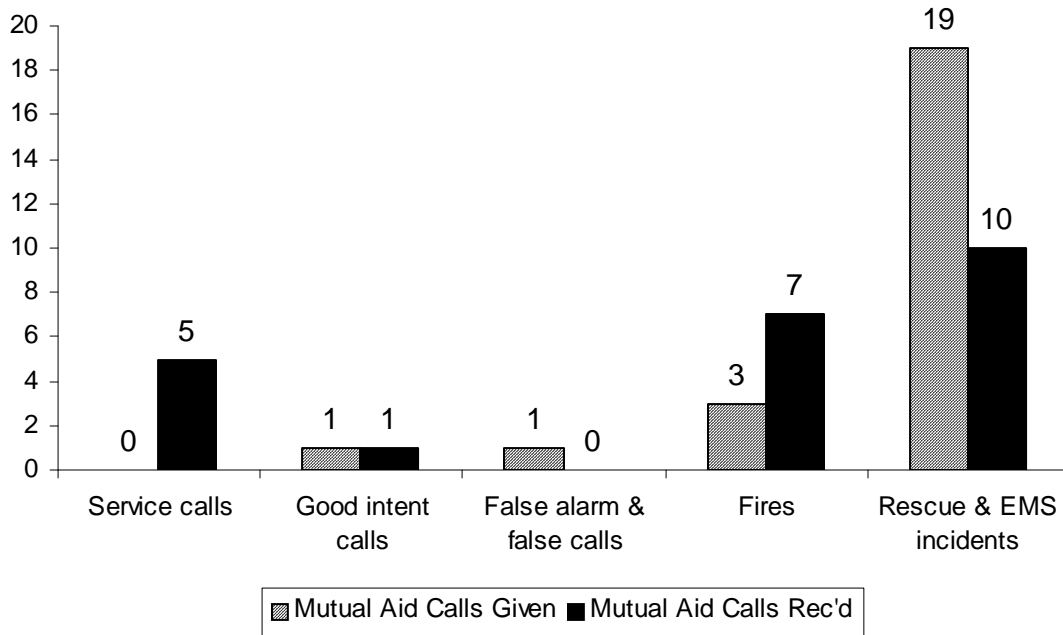
In 2011, Brockton reported coming to the aid of other fire departments 24 times. Nineteen (19), or 79%, of these calls were rescue or EMS calls; three, or 13%, were for fires; one, or 4% was for a false alarm or false call; and the other call, or 4%, was for a good intent call.

#### Brockton Received Mutual Aid in 23 Incidents

In 2011, surrounding fire departments gave aid to Brockton during 23 incidents. Ten, or 43%, were for rescue or EMS incidents, seven, or 30%, of these incidents were for fires, five, or 22%, were for service calls; and one, or 4% was for a good intent call.

The following chart compares the number of calls the Brockton Fire Department gave mutual aid to a neighboring community compared to the number of calls where a neighboring community assisted Brockton. In 2011 Brockton received aid from other fire departments almost the same as much as they were asked for it.

### Brockton's Mutual Aid Calls in 2011







<b>Item First Ignited<sup>9</sup></b>	<b>%</b>	<b>Factor Contrib. to Ignition</b>	<b>%</b>	<b>%Unconfined<sup>10</sup></b>
Cooking materials	54%	Misuse of materials	1%	2%
Flammable or combustible liq.	20%	Abandoned materials	1%	2%
Rubbish, trash, waste	4%	Too close to combustibles	1%	2%
Structural member, framing	3%	Playing with heat source	1%	2%

<b>Equipment<sup>11</sup></b>	<b>%</b>	<b>Cause of Ignition</b>	<b>%</b>	<b>%Unconfined<sup>12</sup></b>
Cooking equipment	57%	Unintentional	18%	65%
Boiler, furnace, cent. heat. unit	15%	Intentional	3%	11%
None	20%	Failure of eq./heat source	3%	11%
HVAC, other	1%	Act of Nature	1%	2%
Electrical wiring, other	1%	Undetermined	1%	4%
Lamp, lighting, other	1%	Cause Under Investigation	2%	7%

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

Alerted Occupants	71%
Didn't Alert Occupants	13%
Undetermined	15%

<b>All Reported Incidents</b>	<b># of Incidents</b>	<b>% of Incidents</b>
Rescue & EMS incidents	14,477	73%
False alarms & false calls	2,550	13%
Service calls	1,053	5%
Hazardous conditions (no fire)	630	3%
Good intent calls	509	3%
Fires <sup>13</sup>	459	2%
Severe weather & natural disaster calls	46	0.2%
Overpressure rupture, explosion or overheat calls (no fire)	25	0.1%
Special incident type calls	19	0.1%

<sup>9</sup> This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

<sup>10</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>11</sup> This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

<sup>12</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.

<sup>13</sup> This figure contains the fire that Brockton gave mutual aid to in another jurisdiction.

<b>Month</b>	<b>Total Fires</b>	<b>Structure Fires</b>	<b>Vehicle Fires</b>	<b>Other Fires</b>
January	33	26	5	2
February	26	20	1	5
March	51	29	7	5
April	46	21	2	23
May	38	14	8	16
June	32	14	1	17
July	52	11	7	34
August	41	20	5	16
September	40	22	7	11
October	34	18	2	14
November	29	11	8	10
December	30	18	2	10

<b>Day</b>	<b>Total Fires</b>	<b>Structure Fires</b>	<b>Vehicle Fires</b>	<b>Other Fires</b>
Sunday	73	31	13	29
Monday	66	36	8	22
Tuesday	69	34	6	29
Wednesday	56	32	6	18
Thursday	63	27	7	29
Friday	60	28	6	26
Saturday	65	36	9	20

<b>Time</b>	<b>Total Fires</b>	<b>Structure Fires</b>	<b>Vehicle Fires</b>	<b>Other Fires</b>
00:01 - 04:00	29	12	10	7
04:01 - 08:00	34	23	3	8
08:01 - 12:00	58	30	13	15
12:01 - 16:00	119	50	11	58
16:01 - 20:00	131	67	12	52
20:01 - 24:00	81	42	6	33

### **Motor Vehicle Fires**

Total: 55

Automobiles: 52 (95%)

3 (6%) of the automobile fires considered intentionally set.

## Arson Fires

**Total Arsons: 46**

**Dollar loss: \$264,500**

### 0.49 Arson Fires/1,000 Population

Situation	Arsons	% Situation	% Arson	Dollar Loss
Structure Arsons	9	4%	20%	\$259,500
Vehicle Arsons	3	5%	7%	5,000
Other Arsons	34	20%	74%	0

0.10 Structure arsons/1,000 population

0.03 Vehicle arsons/1,000 population

0.36 Other arsons/1,000 population

### Peak Times of Day for:

Structure Arsons	#	%	Vehicle Arsons	#	%
12:01 - 16:00	3	33%	00:01 - 04:00	3	100%
04:01 - 08:00	2	22%			
08:01 - 12:00	2	22%			

Other Arsons	#	%
16:01 - 20:00	10	29%
12:01 - 16:00	8	24%
20:01 - 00:00	7	21%

Peak Fixed Property Uses for Structure Arsons	#	%
Apartments	5	56%
1- or 2-Family homes	1	11%
Specialty shop	1	11%
MV or boat sales, services, repair	1	11%
Hospital – medical or psychiatric	1	11%