

Brockton Fires in 2010

375 Total Fires — 181 Structures, 41 Vehicles & 153 Other Fires

The Brockton Fire Department reported 375 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2010. The 181 structure fires, 41 motor vehicle fires, 63 outside rubbish fires, 46 brush fires, 15 special outside fires; one cultivated crop or vegetation fire; and 28 unclassified fires caused eight civilian injuries, 11 firefighter injuries and an estimated dollar loss of \$3.3 million.

All Fires Up in 2010

Total fires increased by 176 from the 199 incidents reported in 2009. Reported structure fires were up 43 from the 138 reported during the previous year. Motor vehicle fires increased by six from 35 the year before. Outside and other fires increased by 127 from the 26 reported in 2009.

The large increase in outside fires is mainly due to Brockton reporting for the first time, all of their incidents in 2010, not just the mandated fires that cause a dollar loss or human casualty.

BROCKTON FIRES FROM 2006 TO 2010

	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons
2006	163	124	24	15	12	7	4	1
2007	311	211	59	41	18	13	4	1
2008	197	142	36	19	12	9	1	2
2009 ¹	199	138	35	26	17	11	5	1
2010 ²	375	181	41	153	25	8	3	14

BUILDING FIRES

There were 181 building fires of different types in Brockton in 2010. These 181 building fires accounted for all of the structure fires in Brockton.

86% of Building Fires in Homes

The 181 building fires that occurred in Brockton in 2010 can be broken down by fixed property use as follows: 156, or 86% of all building fires, were in residential properties; eight happened in mercantile or business properties; seven fires happened in storage facilities; six fires happened in a public assembly buildings; two fires occurred in institutional facilities; and one fire each occurred at an industrial facility and a manufacturing facility.

¹ July 2009 fires not included.

² 2010 is the first year that Brockton reported all of their incident 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.

RESIDENTIAL FIRES

Residential Building Fires Up

There were 156 reported residential building fires in Brockton in 2010. These 156 fires are an increase of 36 from the 120 reported residential building fires reported in 2009.

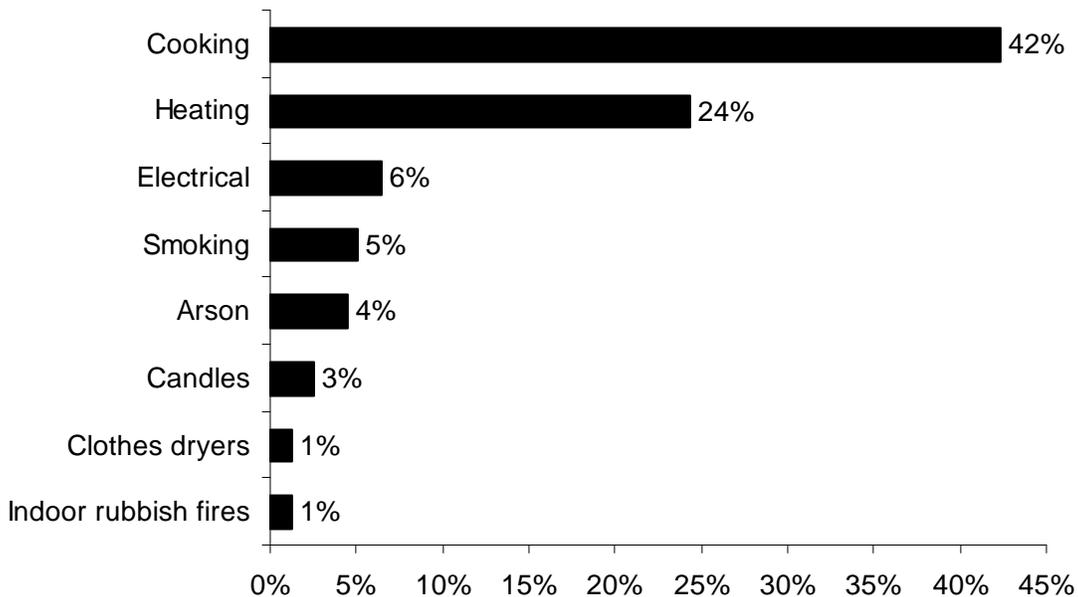
1- or 2-Family Homes Accounted for 49% of Residential Building Fires

The peak fixed property uses for residential building fires in Brockton were 1- or 2-family homes, accounting for 49% of the building fires; 46% occurred in apartments; and 1% each happened in hotels or motels, rooming houses and dormitories. Three percent (3%) 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 42% of these fires. Heating fires caused 24% of these fires. Electrical problems caused 6% of these fires. Smoking was the cause of 5% of Brockton’s residential fires. Arsons caused 4% of these fires. Candles caused 3% of the fires. Clothes dryers and indoor rubbish fires each caused 1% of the fires in Brockton’s residential occupancies in 2010.

2010 Leading Causes of Fires in Brockton Homes



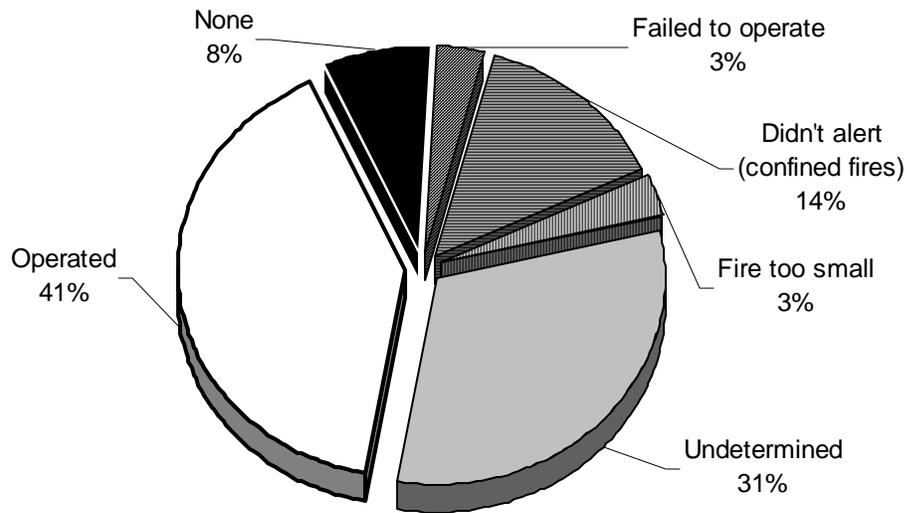
1/2 of Residential Building Fires Are Confined to Non-Combustible Containers³

Seventy-eight (78), or 50% of all residential building fires were confined to non-combustible containers in 2010. Forty-seven (47), or 30%, of all residential building fires reported in 2010 were cooking fires contained to a non-combustible container. Thirty (30), or 19%, were fires confined to a fuel burner or boiler malfunction. One (1) fire, or 1%, was reported to have been contained to a chimney or flue.

Detectors Worked in 60% of Fires

Smoke or heat detectors operated and alerted the occupants in 63, or 40%, of the residential building fires. In 14% of these fires⁴, the detectors did not alert the occupants. Detectors were present but did not operate in 3% of these incidents. In 8% 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 49 incidents, or 31% of Brockton's residential building fires.

Detector Status in Brockton's Residential Fires 2010



Undetermined Why 4 Out of 5 Detectors Failed

It was undetermined in four of the five cases why the detector failed to operate. A dead battery was the reason the detector failed in one case.

³ 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.

⁴ These represent confined fires where it was reported that the detector did not alert the occupants.

VACANT BUILDINGS

7% of Building Fires Occurred in Vacant Buildings

Brockton reported 12 fires that occurred in buildings that were vacant, under construction or demolition⁵. This represented 7% of the total 181 building fires reported to MFIRS in 2010. Six (6) one- or two-family homes, three apartment buildings, one specialty shop, one outside material storage area; and one outbuilding or shed were reported as vacant building fire incidents.

JUVENILE-SET FIRES

No Juvenile-set Fires in 2010

Brockton did not report any juvenile-set fires in 2010.

ARSONS

25 Arsons⁶ - 8 Structure, 3 Motor Vehicle and 14 Outside & Other

Twenty-five (25), or 7%, of Brockton's 375 fires were considered intentionally set, or, for purposes of this analysis, arson. There were eight structure arsons, three motor vehicle arsons and 14 outside and other arsons.

Outside Arsons Up in 2010

The total number of arsons increased by eight from the 17 reported in 2009. Reported structure arsons decreased by three from the 11 reported in 2009. Motor vehicle arsons decreased by two from the five reported in 2009. Outside and other arsons increased by 13 from the one reported the previous year.

58 Fires Reported as Undetermined or Still Under Investigation

In 2010, Brockton reported 58 fires under investigation or cause undetermined after investigation. Forty-seven (47), or 81%, of these fires were reported to be undetermined after investigation. The other 11, or 19%, were still under investigation.

Nine (9), or 16%, of these 47 fires were structure fires. Nineteen (19), or 33% were motor vehicle fires; and 30, or 52%, 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 2010.

⁵ In version 4 a vacant building was defined by having a Fixed Property Use code in the subsection of construction, unoccupied properties, between 910 & 919. However in version 5, the Property Use is separate from the Building Status. In v5 a building is considered vacant if the Building Status is coded: 1- Under Construction; 3-Idle, not routinely used; 4-Under major renovation; 5-Vacant, secured; 6-Vacant, unsecured; & 7-Being demolished. The building use is coded separately in the Property Use field.

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

ALL INCIDENTS

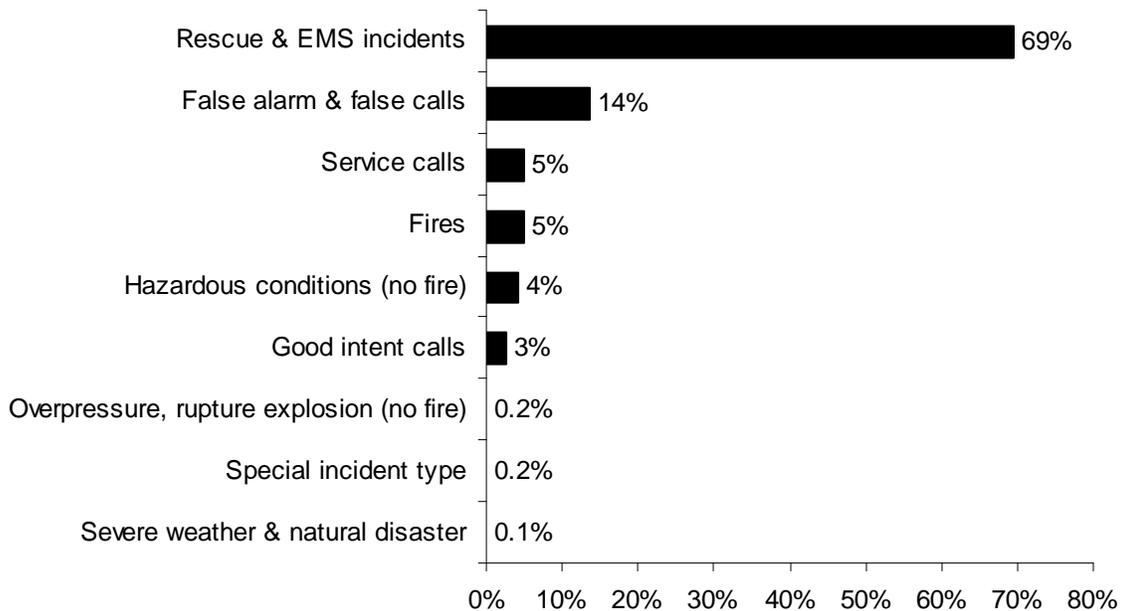
Rescue & EMS Incidents Are Over 2/3 of All Reported Incidents

In 2010, Brockton voluntarily reported 8,189 incidents to MFIRS. Of these 8,819 incidents, 7,804, or 95% were non-fire incidents. For the first time since 2001, Brockton voluntarily reported all of their incidents to MFIRS.

Of these 7,804 non-fire incidents 5,691, or 69% of all reported incidents in 2010, were reported rescue and emergency medical services (EMS) calls; 1,109, or 14%, were reported false alarm or false calls; 411 incidents, or 5%, was a service calls; 344, or 4%, were reported hazardous condition calls with no fire; 212, or 3%, were good intent calls; 17, or 0.2%, were overpressure, rupture or explosions with no after fire calls; 15, or 0.2%, were special incident types; and five, or 0.1%, were severe weather or natural disaster calls.

In 2010, Brockton reported 385 fires⁷, accounting for 5% of all reported incidents.

2010 Incidents by Incident Type



Brockton Gave Mutual Aid in 8 Reported Incidents

In 2010, Brockton reported coming to the aid of other fire departments eight times. Four, or 50%, of these calls were rescue or EMS calls; two, or 25%, were for fires; one, or 17% was for a false alarm or false call; and the other call, or 17%, was for a hazardous condition with no fire.

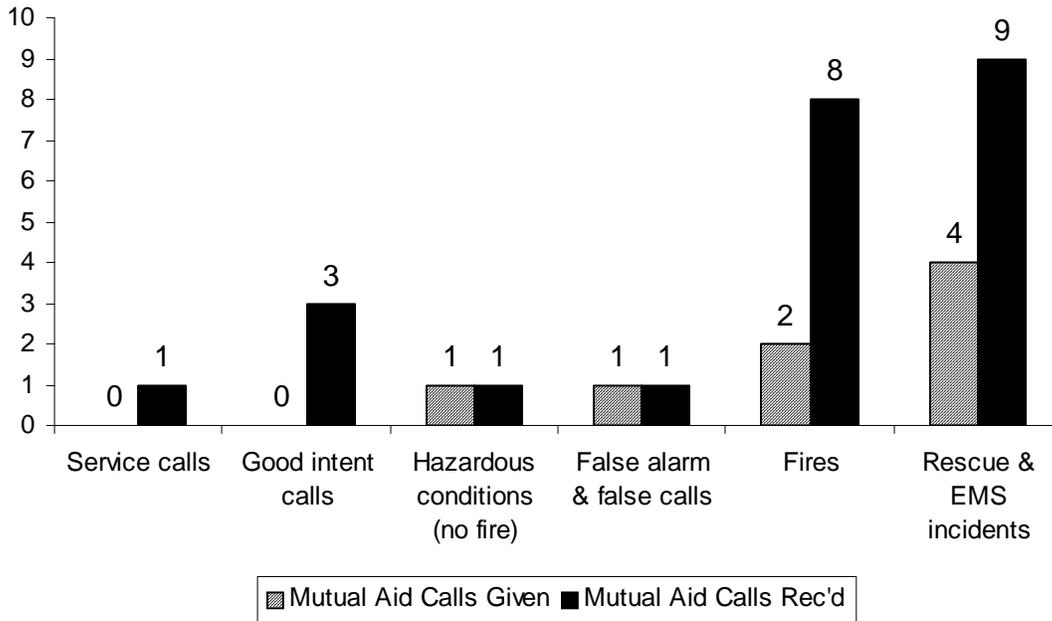
⁷ This includes fires that Brockton responded to as mutual aid calls outside of their jurisdiction.

Brockton Received Mutual Aid in 23 Incidents

In 2010, surrounding fire departments gave aid to Brockton during 23 incidents. Nine, or 39%, were for rescue or EMS incidents, eight, or 35%, of these incidents were for fires, three, or 13% were good intent calls; one, or 4%, was for a false alarm or false call; another call, or 4%, was for a service call; and the last mutual aid received call, or 4%, was for a hazardous condition call with no fire.

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 2010 Brockton received aid from other fire departments almost three times as much as they were asked for it.

Brockton's Mutual Aid Calls in 2010



Brockton

Population: 93,810

4.0 Fires/1,000 Population

Total Fires:	375		\$3,317,611
Situation	Fires	% of Fires	Dollar Loss
Structure Fires	181	48%	\$3,114,710
Vehicle Fires	41	11%	128,098
Other Fires	153	41%	74,803

8 Civilian Injuries 11 Fire Service Injuries

Building Fires: 181

Residential Structure Fires: 156

Residential Structure Fires Confined to Non-Combustible Containers: 78

Unconfined Residential Structure Fires: 78

6 Civilian Injuries 11 Fire Service Injuries

Occupancy	Fires	%	Detector Status	Fires	%
1- & 2-Family homes	77	49%	Operated	63	41%
Apartments	72	46%	Didn't operate	5	3%
Hotel/motel	1	1%	None	12	8%
Dormitories	1	1%	Fire too small	5	3%
Boarding houses	1	1%	Didn't Alert (confined)	22	14%
			Undetermined	49	31%

Area of Origin⁸	%	Heat Source	%	%Unconfined⁹
Kitchen	42%	Radiated heat from op. eq.	9%	18%
Heating room or area	19%	Arcing	8%	17%
Bedroom	4%	Heat from operating equip.	6%	13%
Exterior balcony/unencl. porch	4%	Cigarette	4%	9%
Interior stairway	3%	Candles	3%	5%

⁸ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

⁹ These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Heat Source from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires, but is sometimes voluntarily reported.

Item First Ignited¹⁰	%	Factor Contrib. to Ignition	%	%Unconfined¹¹
Cooking materials	34%	Abandoned materials	1%	3%
Flammable or combustible liq.	19%	Electrical failure/malfunction	1%	3%
Structural member, framing	11%	Equipment unattended	1%	1%
Exterior sidewall covering	6%	Too close to combustibles	1%	1%

Equipment¹²	%	Cause of Ignition	%	%Unconfined¹³
Cooking equipment	42%	Unintentional	32%	64%
None	24%	Intentional	4%	9%
Boiler, furnace, cent. heat. unit	19%	Failure of eq./heat source	8%	17%
Electrical branch circuit	3%	Act of Nature	2%	4%
		Undetermined	1%	3%
		Cause Under Investigation	10%	15%

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

Alerted Occupants	46%
Didn't Alert Occupants	28%
Undetermined	26%

All Reported Incidents	# of Incidents	% of Incidents
Rescue & EMS incidents	5,691	69%
False alarms & false calls	1,109	14%
Service calls	411	5%
Fires ¹⁴	385	5%
Hazardous conditions (no fire)	344	4%
Good intent calls	212	3%
Overpressure rupture, explosion or overheat calls (no fire)	17	0.2%
Special incident type calls	15	0.2%
Severe weather & natural disaster calls	5	0.1%

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

¹¹ 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.

¹² This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

¹³ 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.

¹⁴ This figure contains the fire that Brockton gave mutual aid to in another jurisdiction.

Month	Total Fires	Structure Fires	Vehicle Fires	Other Fires
January	24	20	3	1
February	16	6	5	5
March	18	11	3	4
April	34	22	7	5
May	23	16	0	7
June	15	10	2	3
July	26	12	4	10
August	53	17	1	35
September	49	11	4	34
October	46	15	9	22
November	38	22	0	16
December	33	19	3	11

Day	Total Fires	Structure Fires	Vehicle Fires	Other Fires
Sunday	61	23	4	34
Monday	57	31	8	18
Tuesday	55	28	6	21
Wednesday	39	21	3	15
Thursday	57	31	6	20
Friday	52	24	7	21
Saturday	54	23	7	24

Time	Total Fires	Structure Fires	Vehicle Fires	Other Fires
00:01 - 04:00	49	20	11	18
04:01 - 08:00	43	15	2	26
08:01 - 12:00	50	26	4	20
12:01 - 16:00	80	40	6	34
16:01 - 20:00	88	49	10	29
20:01 - 24:00	65	31	8	26

Motor Vehicle Fires

Total: 41

Automobiles: 39 (95%)

3 (8%) of the automobile fires considered intentionally set.

Arson Fires

Total Arsons: 25

Dollar loss: \$594,258

0.27 Arson Fires/1,000 Population

Situation	Arsons	% Situation	% Arson	Dollar Loss
Structure Arsons	8	4%	32%	\$573,260
Vehicle Arsons	3	7%	12%	19,998
Other Arsons	14	9%	56%	1,000

0.09 Structure arsons/1,000 population

0.03 Vehicle arsons/1,000 population

0.15 Other arsons/1,000 population

Peak Times of Day for:

Structure Arsons	#	%	Vehicle Arsons	#	%
00:01 - 04:00	5	63%	00:01 - 04:00	2	67%
20:01 - 00:00	2	25%	16:01 - 20:00	1	33%
16:01 - 20:00	1	13%			

Other Arsons	#	%
12:01 - 16:00	4	29%
16:01 - 20:00	4	29%
08:01 - 12:00	3	21%

Peak Fixed Property Uses for Structure Arsons	#	%
1- or 2-Family homes	4	50%
Apartments	2	25%
Dormitory	1	13%
Storage, other	1	13%