

Washington State Fireworks Related Injury and Fire **REPORT**

2012



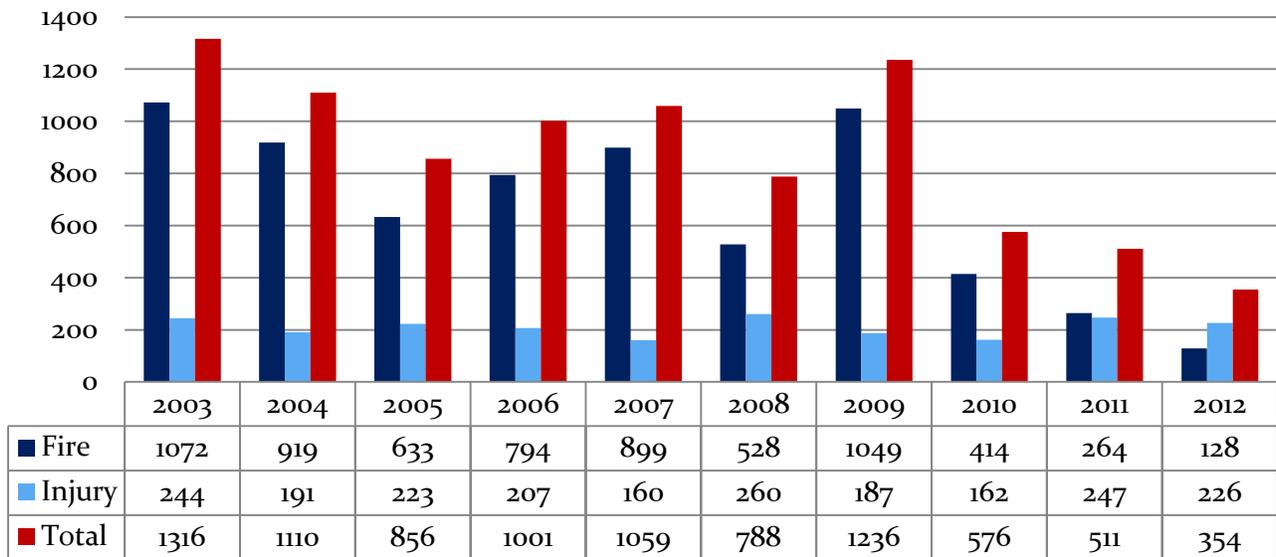
Prepared by the Washington State Patrol -
Office of the Washington State Fire Marshal

2012 Washington State Fireworks Related Injury and Fire Report

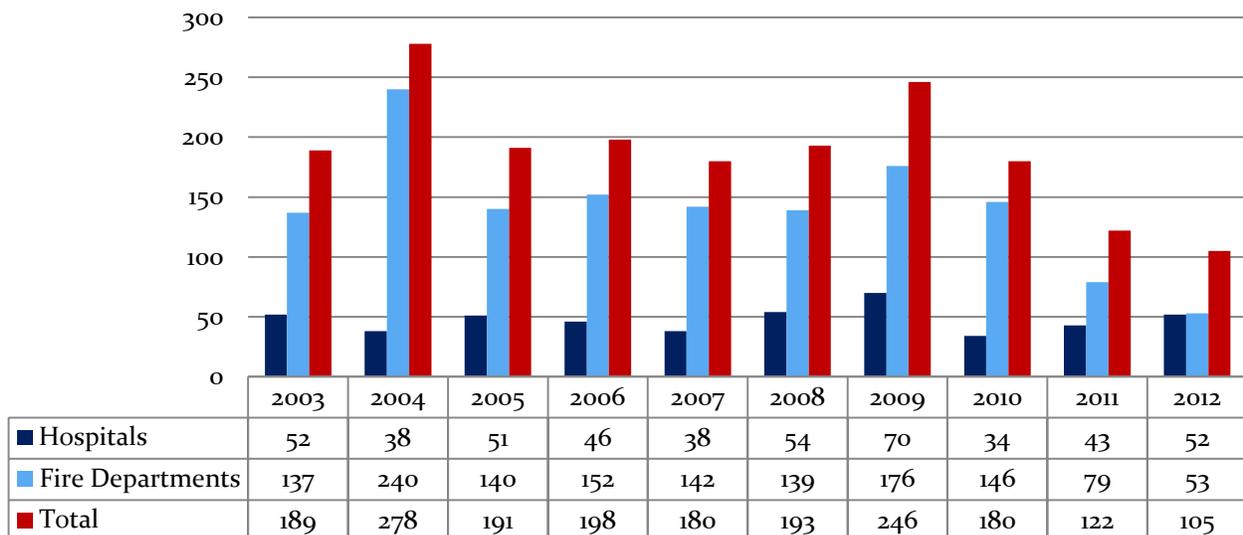
There were 354 fireworks-related injuries and/or fires reported to the Office of the State Fire Marshal in 2012 by fire agencies and hospital emergency rooms. This is a 31% reduction from the previous year's total of 511 reported incidents. Data shown in this report was collected from paper reports submitted by individual fire agencies and hospitals.

Of the 354 reports received, there were 128 fires resulting in \$958,320 of property loss and 226 injuries, one of those resulting in a fatality.

Ten-Year Trend Number of Fireworks Related Incidents



Ten-Year Trend - Number of Agencies Reporting Data

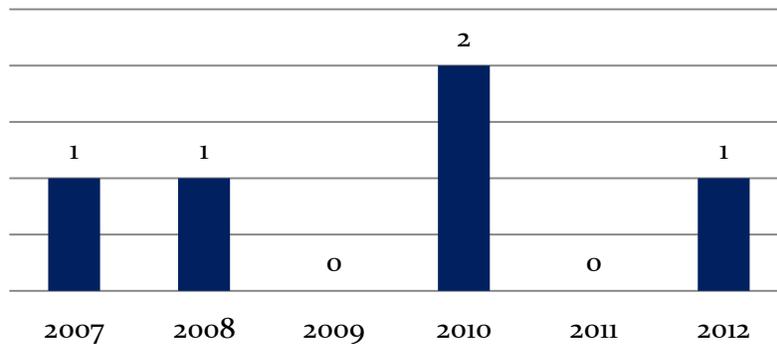


Fireworks Fatalities:

There was one firework related fatality reported in 2012. This incident did not involve a consumer firework, but an illegally obtained professional display firework. On July 4th in Richland, Washington a 61 year old male was killed when the firework failed to fire. Upon inspecting the firework and relighting it, the shell exploded hitting the man in the upper body and head resulting in his death.

Professional display shells should only be handled by those persons who have training and experience in handling this type of product.

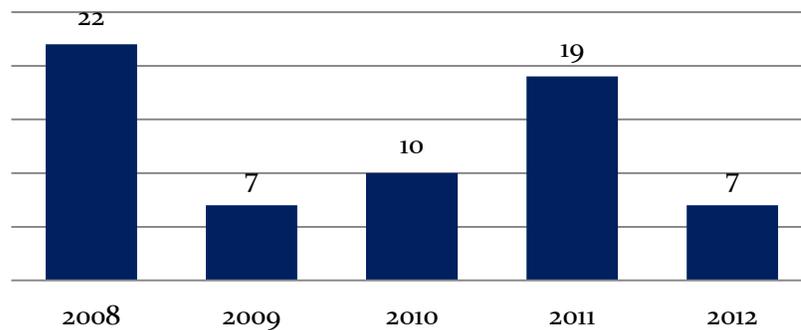
Fireworks Fatalities



Sparkler Bombs

In 2012 there was a 63% decrease in the number of sparkler bomb incidents reported over the previous year.

Sparkler Bomb Incidents

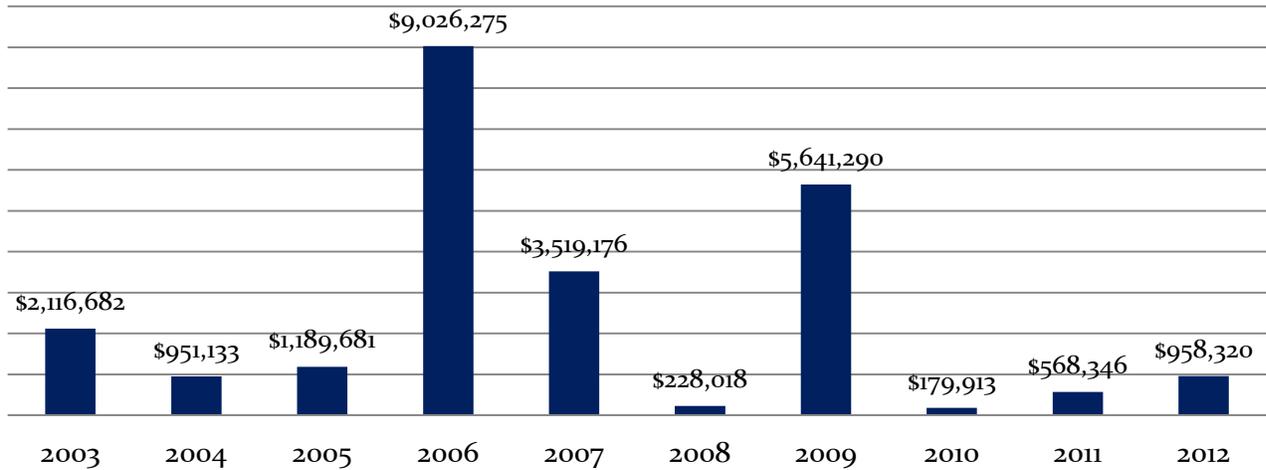


Sparkler bombs are high powered illegal explosive devices. They can be as powerful as a stick of dynamite, igniting accidentally or prematurely by exposure to heat or friction. This often unanticipated discharge is dangerous. In addition to the loud discharge they produce shrapnel from sparklers (metal wire), materials used to make the bomb and anything the device destroys by projecting debris. This shrapnel can cause life altering injuries such as amputations and severe eye injuries.

Fire Loss:

The economic damage caused by fires suspected of being started by fireworks was up by 69% from 2011. Three house fires resulted in \$875,000 or 91% of the total loss in 2012.

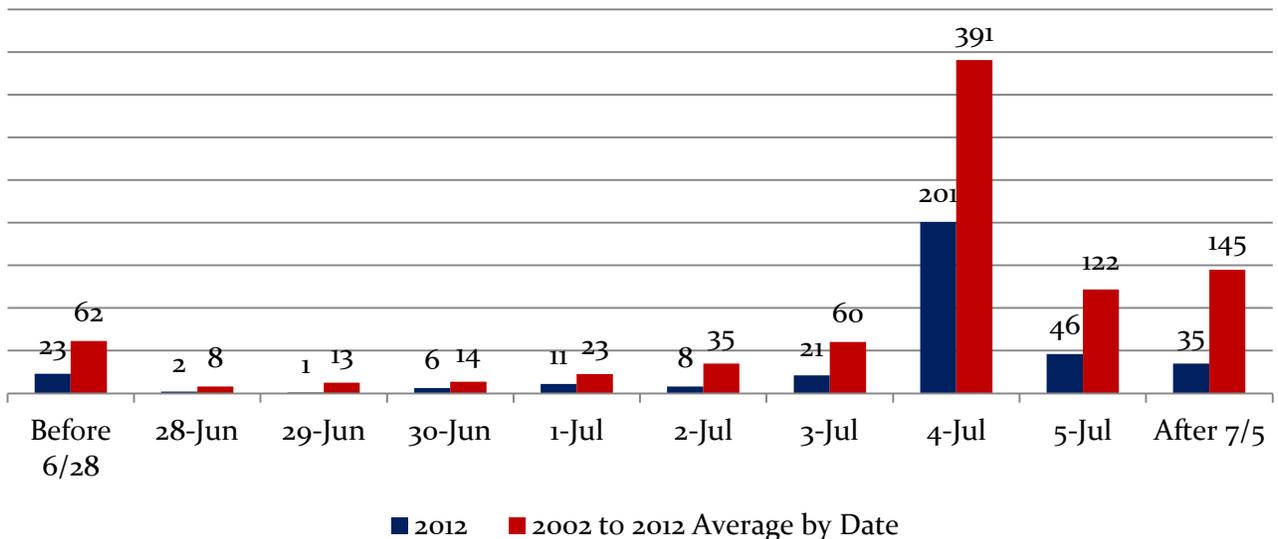
10 Year Trend of Fireworks Caused Fires, Loss



Occurrence of Firework Related Injuries and Fires:

Fireworks-related incidents continue to occur most often on July 4th. This is a trend that has remained constant over the past eleven years.

Incidents by Date; 2012 vs. 2002-2011 Average



Analysis of Fires:

In 2012, fireworks related fire caused an estimated loss of \$958,320. The following firework types were identified as to causing (Table 1):

- Illegal fireworks
 - 26 fires (20%) (wildland or vegetation fire occurred the most)
 - \$252,300 in damage (most to residential structures)
- Legal fireworks
 - 26 fires (20%) (wildland or vegetation fire occurred the most)
 - \$240,650 in damage (most to residential structures)
- Unknown type of fireworks
 - 76 fires (59%) (wildland or vegetation fire occurred the most)
 - \$456,370 in damage (most to residential structures)

Table # 1								
Fires and Dollar Loss By Classification of Fireworks Device								
	Number of Fires				Dollar Loss			
	Firework Type				Firework Type			
Property Type	Illegal	Legal	Unknown	Total	Illegal	Legal	Unknown	Total
Commercial	0	0	0	0	\$ -	\$ -	\$ -	\$ -
Residential	1	3	3	7	\$ 250,000	\$ 180,000	\$ 450,500	\$ 880,500
School	2	0	2	4	\$ -	\$ -	\$ -	\$ -
Vehicle	1	1	1	3	\$ -	\$ -	\$ 1,500	\$ 1,500
Wildland or Vegetation	16	19	33	68	\$ 200	\$ 60,450	\$ 950	\$ 61,600
Other*	6	3	20	29	\$ 2,100	\$ 200	\$ 11,550	\$ 13,850
Unknown**	0	0	17	17	\$ -	\$ -	\$ 870	\$ 870
Total	26	26	76	128	\$ 252,300	\$ 240,650	\$ 465,370	\$ 958,320

* Other fires include dumpsters, sanikans, etc... ** Unknown Fires are where the reporting agency did not indicate a type of fire.

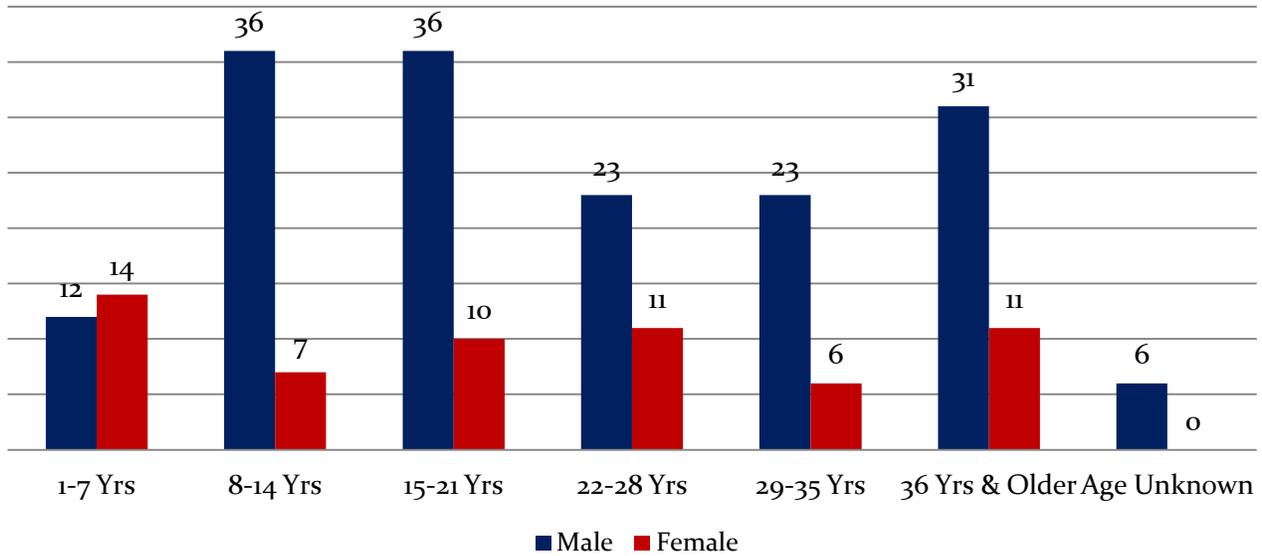
Table # 1A								
Fires and Dollar Loss By Classification of Fireworks Device - 2008 to 2012								
	Number of Fires				Dollar Loss			
	Firework Type				Firework Type			
Property Type	Illegal	Legal	Unknown	Total	Illegal	Legal	Unknown	Total
Commercial	14	7	42	63	\$ 104,752	\$ 5,000	\$ 9,631	\$ 119,383
Residential	32	26	132	190	\$ 758,693	\$ 291,934	\$ 5,531,115	\$ 6,581,742
School	14	5	12	31	\$ 1,900	\$ 100	\$ 10,000	\$ 12,000
Vehicle	9	2	38	49	\$ 61,550	\$ 15,000	\$ 29,800	\$ 106,350
Wildland	168	396	1223	1787	\$ 116,015	\$ 66,000	\$ 382,755	\$ 564,770
Other*	12	5	35	52	\$ 122,600	\$ 700	\$ 59,450	\$ 182,750
Unknown**	14	8	189	211	\$ -	\$ 1,000	\$ 7,892	\$ 8,892
Total	263	449	1671	2383	\$ 1,165,510	\$ 379,734	\$ 6,030,643	\$ 7,575,887

* Other fires include dumpsters, sanikans, etc... ** Unknown Fires are where the reporting agency did not indicate a type of fire.

Fireworks Injuries:

Fireworks-related injuries by age and gender show that males from 8 to 21 years old are most often injured. This trend continues on through adulthood, but at a lesser rate.

2012 Fireworks Injuries by Age and Gender



Analysis of Injuries:

In 2012, there were 226 fireworks related injuries reported. The leading types of injuries reported were:

- Burns (First, Second and Third degree combined) – 122 or 54%
- Trauma related from being struck by a firework – 66 or 29%

**Table # 2
Injuries by Classification of Fireworks Type**

Type of Injury	Firework Type				Place Injured	Firework Type			
	Illegal	Legal	Unknown	Total		Illegal	Legal	Unknown	Total
Amputation	5	5	1	11	Hand or Arm	22	47	18	87
First Degree Burn	4	9	8	21	Head or Face	18	33	16	67
Second Degree Burn	21	50	19	90	Leg or Foot	7	11	6	24
Third Degree Burn	3	4	4	11	Multiple Locations	16	12	11	39
Multiple Injuries	14	7	5	26	Torso	1	3	5	9
Trauma	17	31	18	66	Total	64	106	56	226
Respiratory	0	0	1	1					
Total	64	106	56	226					

Firework Types Causing Injury:

Table #3 shows the types of firework devices that caused injuries.

- Illegal fireworks – 95 injuries, or 49%
- Legal fireworks – 77 injuries, or 36%
- Unknown fireworks – 40 injuries, or 19%

Most commonly used fireworks causing injuries:

Legal fireworks:

- ❖ Multi-Aerials – 45%
- ❖ Roman Candles – 22%
- ❖ Sparklers – 17%

Illegal fireworks:

- ❖ Homemade Devices – 25%
- ❖ M-80's – 20%
- ❖ Multi-Aerials – 15%

Table # 3				
Injuries by Type of Device				
Device Type	Illegal	Legal	Unknown	Total
Altered Fireworks	1			1
Bottle Rockets	18			18
Firecrackers and Chasers	13			13
Homemade Explosive Devices	8			8
M-80's, M-100's, Cherry Bombs	14			14
Missiles and Rockets	8			8
Cones and Fountains fireworks	0	8	0	8
Ground Spinners	0	3	0	3
Multi Aerials / Mortars	2	53	3	58
Novelties	0	1	0	1
Roman Candles	0	11	0	11
Smoke Items	0	3	0	3
Sparklers (Sparkler Bombs recorded as Homemade)	0	25	0	25
Other - Punks	0	2	0	2
Unknown			53	53
Total	64	106	56	226

Analysis of Cause:

Table #4 shows the leading cause of fireworks-related injuries.

- Holding fireworks in hand – 76 injuries or 34%
- Too close to lit fireworks – 69 injuries or 31%
- Leaning over fireworks – 25 injuries or 11%

Table # 4 Cause of Injury	
Action	Total
Holding fireworks in hands	76
Too close to lit fireworks	69
Leaning over fireworks	25
Duds-relighting or handling dud	18
Throwing fireworks	12
Unsafe surface for lighting	9
Unknown	9
Tampering with fireworks	6
Children with sparkler (infant to 7 years)	2
Total	226

**Table # 5
Summary by County and Agency type reporting incidents in 2012.**

County	Fire Department			Fire Districts			Hospitals		Total
	Fire	Injury	Total	Fire	Injury	Total	Injury	Total	
Adams	0	0	0	0	0	0	0	0	0
Asotin	0	0	0	0	0	0	0	0	0
Benton	1	1	2	0	1	1	5	5	8
Chelan	0	0	0	1	0	1	0	0	1
Clallam	0	0	0	2	0	2	1	1	3
Clark	1	0	1	6	0	6	15	15	22
Columbia	0	0	0	0	0	0	0	0	0
Cowlitz	0	0	0	0	0	0	3	3	3
Douglas	0	0	0	0	0	0	0	0	0
Ferry	0	0	0	0	0	0	0	0	0
Franklin	0	0	0	0	0	0	0	0	0
Garfield	0	0	0	0	0	0	0	0	0
Grant	0	0	0	5	1	6	4	4	10
Grays Harbor	0	0	0	0	0	0	4	4	4
Island	0	0	0	2	0	2	2	2	4
Jefferson	0	0	0	1	0	1	1	1	2
King	51	4	55	19	3	22	44	44	121
Kitsap	0	0	0	2	2	4	19	19	23
Kittitas	1	0	1	2	0	2	0	0	3
Klickitat	0	0	0	0	0	0	3	3	3
Lewis	3	0	3	2	0	2	3	3	8
Lincoln	0	0	0	0	0	0	1	1	1
Mason	0	0	0	0	1	1	3	3	4
Okanogan	0	0	0	0	0	0	1	1	1
Pacific	0	0	0	0	0	0	0	0	0
Pend Oreille	0	0	0	0	0	0	1	1	1
Pierce	1	0	1	0	1	1	34	34	36
San Juan	0	0	0	0	0	0	0	0	0
Skagit	0	0	0	1	0	1	3	3	4
Skamania	0	0	0	0	0	0	0	0	0
Snohomish	0	0	0	14	9	23	28	28	51
Spokane	2	1	3	0	1	1	2	2	6
Stevens	0	0	0	1	1	2	1	1	3
Thurston	3	0	3	1	2	3	5	5	11
Wahkiakum	0	0	0	0	0	0	0	0	0
Walla Walla	3	0	3	3	0	3	1	1	7
Whatcom	0	0	0	0	2	2	1	1	3
Whitman	0	0	0	0	0	0	2	2	2
Yakima	0	0	0	0	0	0	9	9	9
Total	66	6	72	62	24	86	196	196	354