

BRITISH COLUMBIA

Office of the Fire Commissioner



**Annual Report
2019**



Office of the
Fire Commissioner
Emergency Management BC





Working Together for Fire Safety

IT IS MY PRIVILEGE TO PROVIDE YOU WITH

the Office of the Fire Commissioner's 2019 annual report, a retrospective account of reported fires and their causes from 2014 to 2019 in British Columbia.

This report is intended to advise the fire service and the Office of the Fire Commissioner of the root causes and circumstances of fires over the last several years in order to identify common hazards and trends. By understanding this, we can focus our efforts on influencing British Columbians to act in ways that will greatly improve their safety in their homes and places of work. In addition, information in this report can influence legislation, policies and guidance to reduce deaths, injuries and the financial impact from fires that occur in our province.

This report identifies that most deaths and injuries caused by fire, by far, occur in people's homes. It's clear to me that the fire service's public education efforts need to be focused on delivering home fire safety programs. Fire prevention education campaigns that are evidenced based and target geographic areas, specific problems and groups, are most effective. A renewed focus will have the greatest effect on areas and individuals in greatest need, where outcomes can be measured and improved as needed.

With an evidence-based approach to fire prevention, I'm certain we can shift trends in the province and be a leader within the Canadian and international fire services.



Our areas of focus will include:

- Identification of the highest-risk areas of the community;
- Identification of risks based on dwelling types;
- Continued monitoring and evaluation to ensure fire prevention programs continue to target the community's areas of highest risk, and;
- Research of best practices to enhance fire prevention programs' process, content, and delivery, including the use of social media to distribute safety information.

In the same way it's a habit to buckle up for every car ride, being educated in fire safety and developing those fire safe habits are the heart of this principle.

Having working smoke alarms in every home must also become second nature. The fire service's time, energy, and focus on achieving this goal is critical, and the key to success lies with the development of sustainable fire prevention programs that work in partnership with other stakeholders and service providers.

The approach taken for this report is intended to assist in the development of a targeted application of existing fire prevention methods, and the logic of this approach can be replicated and applied everywhere. Focusing on the highest-risk members of the public and places within our communities will produce the biggest return on investment. We need others to follow.

***Brian Godlonton,
Fire Commissioner***



Executive Summary

FIRE SERVICES ACT SECTION 9 (1) requires local assistants of the fire commissioner in each municipality, district or part of British Columbia to investigate and report fires. This information has been collated to provide the data found in this report.

The report is organized in a way to reflect fires reported to the Office of the Fire Commissioner (OFC) between 2014 and 2019 and the tables contain information most important to British Columbia's fire service.

Fire reporting for 2014 to 2018 is contained in Appendix 1 and is provided for trend analysis.

In 2019 there were 6,907 fires that resulted in 205 injuries and 27 deaths. Of these, 2,921 (42.3%) were structure fires (165 injuries and 19 deaths), 1,063 (15.4%) were vehicle fires (12 injuries and 8 deaths), 14 (.02%) were person fires (13 injuries and no deaths) and 2,909 (42%) were outdoor fires (15 injuries and no deaths).

Of these fires, 66.3% were from the Lower Mainland, 15.9% were from Vancouver Island, 8.5% were from Thompson Okanagan, 6.3% were from Northern, and 1.5% were from South East and 1.6% from other Regional Districts and other agencies acting on behalf of the Office of the Fire Commissioner.

Structure fires are the most impactful to British Columbians due to the number of injuries and deaths. This category of fires occurred most frequently in residential structures: 2,279 events accounting for 78% of structure fires, 157 (95%) injuries and 17 (90%) deaths. The most frequent cause of these residential structure fires was cooking equipment (739 fires, 62 injuries, and 0 deaths) and smoker's materials and open flames (498 fires, 53 injuries, and 4 deaths).

With a focus on the influence (presence/absence) of fire safety systems such as smoke alarms and sprinkler systems, relative to the base case (no smoke alarm and no sprinkler protection), the following trends were observed:



- Injury rates were significantly higher in the presence of a working smoke alarm and no sprinkler protection likely because residents attempted to control the fires themselves when the alarms activated but the deaths were lower than without a functioning smoke alarm;
- Death rates were significantly lower whenever the fires occurred in the presence of sprinkler protection;
- The presence of smoke alarms and/or sprinkler protection significantly reduced the dependence on the fire department to control the fires; and
- The presence of smoke alarms and/or sprinkler protection significantly reduced the extent to which fires spread beyond the room of origin.

Citizens who are aged 50 and over were overrepresented with respect to frequency of death by fire. This is particularly significant given that BC Stats (2011) predicts the 65-and-over age group will increase to 23.7% of the population by 2036, compared with 15.0% in 2010, and 80-and-over will increase to 7.4% (from 4.2%).

A functioning smoke alarm when a fire breaks out can reduce the risk of dying by as much 50%. Despite this awareness, in 2019 only 44% of the structure fires reported to the OFC had a working smoke alarm. This finding presents

a significant opportunity for fire prevention education campaigns as well as requirements for buildings to enhance public safety.

Finally, it is important to note the costs of residential fires extend significantly beyond damage to the property and are estimated to be about 10 times the reported costs such as active fire protection costs, passive fire protection costs and human loss. Research is currently underway by the National Research Council of Canada (NRC) into the total cost of fire as defined as the losses that fire causes, directly and indirectly and the cost of provisions to prevent or mitigate the losses caused by the fire. These new insights will identify the broader implications and the impacts to our communities' most vulnerable populations¹. Specifically, where these people live, how and where to apply precision programs for improvement.

.....

¹ Reduced frequency and severity of residential fires following delivery of fire prevention education by on-duty fire fighters: Cluster randomized controlled study: Author links open overlay panel Joseph Clare, Len Garis, Darryl Plecas, Charles Jennings. <https://www.sciencedirect.com/science/article/pii/S0022437512000230>

CONTENTS

Working Together for Fire Safety	2
Executive Summary	4
BC Fires in 2019	8
<i>Reporting entities</i>	8
<i>Method of fire control</i>	10
<i>Structure fires by property complex type</i>	11
<i>Residential structure fires</i>	13
<i>Influence of life safety systems on residential fire outcomes</i>	16
<i>Fire-related casualties: 5-year trends</i>	17
<i>Fire-related casualties: 2019 casualty behaviour</i>	19
Appendix 1: Fire Reporting 2014 to 2018	21

Disclaimer: This report is based on data entered the FIRES system as of June 29th, 2020. Data content regularly changes in the FIRES system due to the nature of the data collection and entry into the database from numerous users in the province. As a result, the outcome of any additional data analysis conducted after June 29th, 2020 for the same period as this report will differ.

List of Tables

Table 1. All BC fires (2019) by fire department type and incident type, showing percentage of fires, number/rate of injuries, and number/rate of deaths	8
Table 2. All BC fires (2019) by OFC region, showing percentage of fires, number/rate of injuries, and number/rate of deaths	9
Table 3. All BC fires (2019) by method of fire control, showing percentage of fires, number/rate of injuries, and number/rate of deaths	10
Table 4. All BC structure fires (2019) by property complex, showing percentage of fires, number/rate of injuries, and number/rate of deaths.....	11
Table 5. All BC residential structure fires (2019) by room of fire origin, showing percentage of fires, number/rate of injuries, number/rate of deaths, and number/rate of fires that extended beyond the room of origin	13
Table 6. All BC residential structure fires (2019) by source of ignition, showing percentage of fires, number/rate of injuries, and number/rate of deaths.....	14
Table 7. All BC residential structure fires (2019) by act or omission, showing percentage of fires, number/rate of injuries, and number/rate of deaths.....	14
Table 8. All BC residential structure fires (2019) by level of fire origin, showing percentage of fires, number/rate of injuries, and number/rate of deaths.....	15
Table 9. All BC residential structure fires (2019) by building height, showing percentage of fires, number/rate of injuries, and number/rate of deaths.....	15
Table 10. All BC residential structure fires (2019) by life safety system, showing number/percentage of fires, number/rate of injuries (with 95% confidence intervals, CI), number/rate of deaths (with 95% CI), fire department control (% , 95% CI), and extended beyond room of origin (% , 95% CI)	16
Table 11. All fire casualties and police/ fire casualties (2015-2019), showing number/%/rate of injuries, and number/%/rate of deaths	17
Table 12. All fire casualties and police/ fire casualties (2015-2019) by injury seriousness, showing number/rate of minor, light, and serious injuries	17
Table 13. All fire casualties (2015-2019) by age group, showing number/rate of injuries/deaths, correcting for 'unknown' ages, and in comparison, to the population size of each age group	18
Table 14. All structure fire casualties (2019) by condition of casualty, showing number/% of injuries deaths	19
Table 15. All structure fire casualties (2019) by action of casualty, showing number/% of injuries/deaths	19
Table 16. All structure fire casualties (2019) by cause of injury, showing number/% of injuries/deaths	20
Table 17. All structure fire casualties (2019) by cause of failure to escape, showing number/% of injuries/deaths	20
Appendix Table 1. All BC fires (2014-2018) by fire department type and incident type, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths	21
Appendix Table 2. All BC fires (2014-2018) by OFC region, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths	22
Appendix Table 3. All BC fires (2014-2018) by method of fire control, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths	22
Appendix Table 4. All BC structure fires (2014-2018) by property complex, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths.....	23
Appendix Table 5. All BC residential structure fires (2014-2018) by room of fire origin, showing percentage of fires (annual rate), number/rate of injuries, number/rate of deaths, and number/rate of fires that extended beyond the room of origin.	24
Appendix Table 6. All BC residential structure fires (2014-2018) by source of ignition, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths.....	25
Appendix Table 7. All BC residential structure fires (2014-2018) by act or omission, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths.....	25
Appendix Table 8. All BC residential structure fires (2014-2018) by level of fire origin, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths.....	26
Appendix Table 9. All BC residential structure fires (2014-2018) by building height, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths.....	26
Appendix Table 10. All BC residential structure fires (2014-2018) by life safety system, showing number/percentage of fires, number/rate of injuries (with 95% confidence intervals, CI), number/rate of deaths (with 95% CI), fire department control (% , 95% CI), and extended beyond room of origin (% , 95% CI).	26
Appendix Table 11. All structure fire casualties (2014-2018) by condition of casualty, showing number/% of injuries/deaths	27
Appendix Table 12. All structure fire casualties (2014-2018) by action of casualty, showing number/% of injuries/deaths ..	27
Appendix Table 13. All structure fire casualties (2014-2018) by cause of injury, showing number/% of injuries/deaths ..	27
Appendix Table 14. All structure fire casualties (2014-2018) by cause of failure to escape, showing number/% of injuries/deaths	27

BC Fires in 2019

This section presents information about all the BC 2019 fires reported to the OFC. In total, 6,907 fires were reported, resulting in 205 injuries and 27 deaths.

Reporting entities

Table 1 shows how the different types of fire departments in BC responded to these types of fire events. Structure fires and outdoor fires both accounted for 42% of the total fire events, with vehicle fires accounting for a further 15%. Career fire departments (57%) and composite departments (39%) responded to the bulk of the total fire events. There were almost 30 injuries and 4 deaths per 1,000 fires in 2019. For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 1 (p.21).

Table 1. All BC fires (2019) by fire department type and incident type, showing percentage of fires, number/rate of injuries, and number/rate of deaths

FIRE DEPARTMENT TYPE	INCIDENT TYPE	2019 TOTAL	% FIRES	# INJURIES	INJURY/ 1,000 FIRES	# DEATHS	DEATH/ 1,000 FIRES
CAREER	All fires	3,923	56.8%	105	26.8	5	1.3
	Structure fire	1,580	22.9%	82	51.9	4	2.5
	Vehicle fire	333	4.8%	4	12.0	1	3.0
	Outdoor fire	1,997	28.9%	7	3.5	0	0.0
	Person fire	13	0.2%	12	923.1	0	0.0
COMPOSITE	All fires	2,721	39.4%	93	34.2	15	5.5
	Structure fire	1,179	17.1%	82	69.6	13	11.0
	Vehicle fire	666	9.6%	8	12.0	2	3.0
	Outdoor fire	875	12.7%	2	2.3	0	0.0
	Person fire	1	0.0%	1	1000.0	0	0.0
VOLUNTEER	All fires	235	3.4%	2	8.5	6	25.5
	Structure fire	156	2.3%	1	6.4	2	12.8
	Vehicle fire	50	0.7%	0	0.0	4	80.0
	Outdoor fire	29	0.4%	1	34.5	0	0.0
	Person fire	0	0.0%	0	Undefined	0	Undefined
OTHER	All fires	28	0.4%	5	178.6	1	35.7
	Structure fire	6	0.1%	0	0.0	0	0.0
	Vehicle fire	14	0.2%	0	0.0	1	71.4
	Outdoor fire	8	0.1%	5	625.0	0	0.0
	Person fire	0	0.0%	0	Undefined	0	Undefined
TOTAL	All fires	6,907	100.0%	205	29.7	27	3.9
	Structure fire	2,921	42.3%	165	56.5	19	6.5
	Vehicle fire	1,063	15.4%	12	11.3	8	7.5
	Outdoor fire	2,909	42.1%	15	5.2	0	0.0
	Person fire	14	0.2%	13	928.6	0	0.0

Table 2 shows the variation in reporting across the OFC regions. Based on the caveats in the table note, two-thirds of 2019 fire reports originated from the Lower Mainland (accounting for 73% of injuries and 37% of deaths). For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 2 (p.22).

Table 2. All BC fires (2019) by OFC region, showing percentage of fires, number/rate of injuries, and number/rate of deaths

FIRE BY OFC REGION	2019 TOTAL	% FIRES	# INJURIES	INJURY/ 1,000 FIRES	# DEATHS	DEATH/ 1,000 FIRES
Lower Mainland	4,577	66.3%	150	32.8	10	2.2
Vancouver Island	1,101	15.9%	22	20.0	8	7.3
Kamloops	584	8.5%	9	15.4	3	5.1
Nelson	101	1.5%	7	69.3	0	0.0
Prince George	435	6.3%	14	32.2	3	6.9
Regional districts	109	1.6%	3	27.5	3	27.5
TOTAL	6,907	100.0%	205	29.7	27	3.9

Percentage of total **fire events** in British Columbia in 2019



Structure Fires
42%



Outdoor Fires
42%



Vehicle Fires
15%



Method of fire control

Table 3 shows how the 2019 fires were controlled. Fire departments controlled 51% of fires: with almost all controlled through water application (and two thirds of these events requiring 1 hand line or less). Hand held extinguishers (18%) and makeshift firefighting aids (11%) controlled almost 30% of all reported fires, while 12% of fires burned out without intervention. For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 3 (p.22).

Table 3. All BC fires (2019) by method of fire control, showing percentage of fires, number/rate of injuries, and number/rate of deaths

METHOD OF FIRE CONTROL (GROUPED)	METHOD OF FIRE CONTROL SUB-CATEGORIES (FIRE DEPARTMENT INVOLVEMENT ONLY)	2019 TOTAL	% FIRES	# INJURIES	INJURY/ 1,000 FIRES	# DEATHS	DEATH/ 1,000 FIRES
Hand held extinguisher		1,267	18.3%	31	24.5	1	0.8
Standpipe and hose systems		47	0.7%	2	42.6	1	21.3
Makeshift fire fighting aids		755	10.9%	25	33.1	0	0.0
Fire Department – water application	All fires	3,366	48.7%	104	30.9	20	5.9
	25mm (1") or less hose	183	2.6%	0	0.0	0	0.0
	38/42mm (1 1/2"/1 3/4") hose – 1 hand line	1,987	28.8%	45	22.6	3	1.5
	65/70mm (2 1/2"/3") hose – 1 hand line	44	0.6%	0	0.0	0	0.0
	38/42mm (1 1/2"/1 3/4") hose – 2 or more hand lines	740	10.7%	38	51.4	8	10.8
	65/70mm (2 1/2"/3") hose – 2 or more hand lines	73	1.1%	9	123.3	6	82.2
	Combo: 38/42/65/77mm or larger hand lines	120	1.7%	9	75.0	3	25.0
	Portable/fixed water deluge/master stream set	66	1.0%	1	15.2	0	0.0
	Unclassified	153	2.2%	2	13.1	0	0.0
Fire Department – other than water	All fires	168	2.4%	3	17.9	3	17.9
	Dry chemical – under 450kg	9	0.1%	1	111.1	0	0.0
	Dry chemical – 450kg and over	0	0.0%	0	Undefined	0	Undefined
	Combination foam-dry chemical	1	0.0%	0	0.0	0	0.0
	Compressed air foam systems	48	0.7%	1	20.8	0	0.0
	Crash-fire foam vehicle – using hand lines	5	0.1%	0	0.0	3	600.0
	Crash-fire foam vehicle – using monitor	0	0.0%	0	Undefined	0	Undefined
	Pumper – foam hand lines only	66	1.0%	0	0.0	0	0.0
	Unclassified	39	0.6%	1	25.6	0	0.0
Sprinkler protection		138	2.0%	5	36.2	0	0.0
Fixed system other than sprinklers		47	0.7%	0	0.0	1	21.3
Burned out		827	12.0%	29	35.1	1	1.2
Miscellaneous method of fire control/extinguishment		192	2.8%	1	5.2	0	0.0
Cannot be determined		100	1.4%	5	50.0	0	0.0
GRAND TOTAL		6,907	100.0%	205	29.7	27	3.9



Structure fires by property complex type

Table 4 shows the property complexes involved with the 2,921 structure fires reported to the OFC in 2019 (accounting for 165 (80%) injuries and 19 (70%) deaths). Residential structure fires contributed 78% to this group of fires and resulted in 95% of injuries and 90% of deaths. For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 4 (p.23).

Table 4. All BC structure fires (2019) by property complex, showing percentage of fires, number/rate of injuries, and number/rate of deaths

PROPERTY COMPLEX GROUP	PROPERTY COMPLEX SUB-GROUP	# FIRES	% FIRES	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES
ASSEMBLY USE	<i>(Total for whole group)</i>	148	5.1%	1	0.6%	6.8	0	0.0%	0.0
	Amusement park, exhibition & fair ground, stadium	2	0.1%	0	0.0%	0.0	0	0.0%	0.0
	Auditorium, theatre, arena, cultural centre	4	0.1%	0	0.0%	0.0	0	0.0%	0.0
	Church, funeral home	4	0.1%	0	0.0%	0.0	0	0.0%	0.0
	Educational institution (non-residential)	37	1.3%	0	0.0%	0.0	0	0.0%	0.0
	Food or beverage establishment	87	3.0%	1	0.6%	11.5	0	0.0%	0.0
	Recreation, sports facility, sports club, social club	14	0.5%	0	0.0%	0.0	0	0.0%	0.0
INSTITUTIONAL USE	<i>(Total for whole group)</i>	35	1.2%	0	0.0%	0.0	0	0.0%	0.0
	Hospital, medical centre, clinic, sanatorium	16	0.5%	0	0.0%	0.0	0	0.0%	0.0
	Licensed care facility	16	0.5%	0	0.0%	0.0	0	0.0%	0.0
	Prison, penitentiary, jail, detention centre, correctional facility, reformatory	3	0.1%	0	0.0%	0.0	0	0.0%	0.0
RESIDENTIAL USE	<i>(Total for whole group)</i>	2,279	78.0%	157	95.2%	68.9	17	89.5%	7.5
	Camp site/RV park	9	0.3%	0	0.0%	0.0	0	0.0%	0.0
	Educational institution (residential)	2	0.1%	0	0.0%	0.0	0	0.0%	0.0
	Hotel, motel, lodge, hostel, boarding house, dormitory	168	5.7%	12	7.3%	71.4	0	0.0%	0.0
	Residential – row, garden, town housing, condominium	221	7.6%	20	12.1%	90.5	0	0.0%	0.0
	Residential – single detached	1,089	37.3%	75	45.5%	68.9	9	47.4%	8.3
	Residential – apartment	567	19.4%	29	17.6%	51.1	3	15.8%	5.3
	Residential – duplex, 3-plex, 4-plex	103	3.5%	12	7.3%	116.5	0	0.0%	0.0
	Residential – mobile home/trailer park	91	3.1%	8	4.8%	87.9	5	26.3%	54.9
	Residential – with business/mercantile, up to 3 stories	29	1.0%	1	0.6%	34.5	0	0.0%	0.0
BUSINESS USE	Office building	36	1.2%	0	0.0%	0.0	0	0.0%	0.0

TABLE 4 CONTINUED ON NEXT PAGE

PROPERTY COMPLEX GROUP	PROPERTY COMPLEX SUB-GROUP	# FIRES	% FIRES	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES
COMMERCIAL/ MERCANTILE USE	<i>(Total for whole group)</i>	122	4.2%	2	1.2%	16.4	1	5.3%	8.2
	Commercial centre including fuel dispensing (may include restaurant, stores, etc.)	23	0.8%	0	0.0%	0.0	1	5.3%	43.5
	Commercial centre, shopping centre, strip mall	64	2.2%	0	0.0%	0.0	0	0.0%	0.0
	Department store, variety store	25	0.9%	0	0.0%	0.0	0	0.0%	0.0
	Service station with storage in back lot (includes fuel dispensing)	10	0.3%	2	1.2%	200.0	0	0.0%	0.0
MANUFACTURING USE	Industrial manufacturing	121	4.1%	1	0.6%	8.3	0	0.0%	0.0
STORAGE USE	<i>(Total for whole group)</i>	12	0.4%	0	0.0%	0.0	0	0.0%	0.0
	Grain elevator	3	0.1%	0	0.0%	0.0	0	0.0%	0.0
	Industrial storage facility, bulk storage tanks	9	0.3%	0	0.0%	0.0	0	0.0%	0.0
OTHER SPECIAL USE	<i>(Total for whole group)</i>	163	5.6%	4	2.4%	24.5	1	5.3%	6.1
	Air transportation use, air terminal, airport	3	0.1%	0	0.0%	0.0	0	0.0%	0.0
	Building/structure unclassified (describe)	93	3.2%	4	2.4%	43.0	1	5.3%	10.8
	Car park	5	0.2%	0	0.0%	0.0	0	0.0%	0.0
	Communications	1	0.0%	0	0.0%	0.0	0	0.0%	0.0
	Farm or agricultural use	34	1.2%	0	0.0%	0.0	0	0.0%	0.0
	Harbour, waterfront property, marine terminal	4	0.1%	0	0.0%	0.0	0	0.0%	0.0
	Laboratory	2	0.1%	0	0.0%	0.0	0	0.0%	0.0
	Parks (federal, provincial or city) (includes historic sites)	13	0.4%	0	0.0%	0.0	0	0.0%	0.0
	Utility	8	0.3%	0	0.0%	0.0	0	0.0%	0.0
UNKNOWN	Cannot be determined	5	0.2%	0	0.0%	0.0	0	0.0%	0.0
TOTAL		2,921	100.0%	165	100.0%	56.5	19	100.0%	6.5



2,921 structure fires reported to the OFC in 2019, accounting for **165** injuries and **19** deaths



Residential structure fires

Table 5 shows the room of fire origin for the 2,279 residential² structure fires reported to the OFC in 2019 (resulting in 157 injuries and 17 deaths). Kitchens accounted for nearly one-third of fires and 37% of injuries (with 0 deaths). Bedrooms accounted for a further 12% of fires (20% of injuries and 18% of deaths), and living rooms resulted in 8% of fires (10% of injuries and 24% of deaths). For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 5 (p.24).

Table 5. All BC residential structure fires (2019) by room of fire origin, showing percentage of fires, number/rate of injuries, number/rate of deaths, and number/rate of fires that extended beyond the room of origin

ROOM OF ORIGIN GROUPED	# FIRES	% FIRES	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES	# EXTENDED BEYOND ROOM OF ORIGIN	% EXTENDED BEYOND ROOM OF ORIGIN
Bathroom	36	1.6%	4	2.5%	111.1	1	5.9%	27.8	3	8.3%
Bedroom	283	12.4%	32	20.4%	113.1	3	17.6%	10.6	56	19.8%
Office	4	0.2%		0.0%	0.0		0.0%	0.0		0.0%
Closet	10	0.4%	1	0.6%	100.0	0	0.0%	0.0	3	30.0%
Assembly area – other	12	0.5%		0.0%	0.0		0.0%	0.0	6	50.0%
Laundry room	57	2.5%	1	0.6%	17.5	0	0.0%	0.0	4	7.0%
Hallways and means of egress	51	2.2%	5	3.2%	98.0	1	5.9%	19.6	7	13.7%
Living room	170	7.5%	16	10.2%	94.1	4	23.5%	23.5	48	28.2%
Function area – unclassified	13	0.6%	0	0.0%	0.0	1	5.9%	76.9	7	53.8%
Foyer	11	0.5%		0.0%	0.0		0.0%	0.0	4	36.4%
Kitchen	743	32.6%	58	36.9%	78.1	0	0.0%	0.0	49	6.6%
Dining area	16	0.7%	2	1.3%	125.0	1	5.9%	62.5	3	18.8%
Porch	116	5.1%	1	0.6%	8.6	0	0.0%	0.0	25	21.6%
Balcony	71	3.1%	3	1.9%	42.3	0	0.0%	0.0	26	36.6%
Storage area	51	2.2%	2	1.3%	39.2	0	0.0%	0.0	27	52.9%
Garage	106	4.7%	9	5.7%	84.9	1	5.9%	9.4	39	36.8%
Outside area – other	84	3.7%	1	0.6%	11.9	1	5.9%	11.9	52	61.9%
Utility, equipment, furnace room	71	3.1%	5	3.2%	70.4	0	0.0%	0.0	11	15.5%
Trash area	12	0.5%		0.0%	0.0		0.0%	0.0	4	33.3%
Chimney, flue pipe, gas vent	40	1.8%	2	1.3%	50.0	0	0.0%	0.0	5	12.5%
Service facilities	10	0.4%		0.0%	0.0		0.0%	0.0		0.0%
Crawl space	19	0.8%		0.0%	0.0		0.0%	0.0	7	36.8%
Structural area – other	183	8.0%	7	4.5%	38.3	0	0.0%	0.0	74	40.4%
All other areas	110	4.8%	8	5.1%	72.7	4	23.5%	36.4	81	73.6%
TOTAL	2,279	100.0%	157	100.0%	68.9	17	100.0%	7.5	541	23.7%

.....

² PC3100-PC3900 throughout the report when referring to residential-use structure fires.

Table 6 shows the source of ignition for residential structure fires reported to the OFC in 2019. One-third (32%) of fires were caused by cooking equipment (40% of injuries and 0 deaths), one-fifth (22%) resulted from smoker's material and open flames (34% injuries and 24% deaths, with the sub-category source of ignition shown in the table), and in almost one-fifth (19%) of cases the source of ignition could not be determined. For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 6 (p.25).

Table 6. All BC residential structure fires (2019) by source of ignition, showing percentage of fires, number/rate of injuries, and number/rate of deaths

SOURCE OF IGNITION GROUPED	SOURCE SUB-CATEGORY (SMOKER'S MATERIAL ONLY)	# FIRES	% FIRES	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES
Cooking equipment		739	32.4%	62	39.5%	83.9	0	0.0%	0.0
Heating equipment		183	8.0%	11	7.0%	60.1	3	17.6%	16.4
Appliances & equipment		94	4.1%		0.0%	0.0		0.0%	0.0
Electrical distribution equipment		145	6.4%	7	4.5%	48.3	0	0.0%	0.0
Other electrical equipment		77	3.4%	1	0.6%	13.0	0	0.0%	0.0
Smoker's material and open flame	(Total for whole group)	498	21.8%	53	33.8%	106.4	4	23.5%	8.0
	Cigarette, pipe, or cigar	149	6.5%	12	7.6%	80.5	1	5.9%	6.7
	Ashtray	23	1.0%	3	1.9%	130.4	0	0.0%	0.0
	Lighter or match	174	7.6%	18	11.5%	103.4	1	5.9%	5.7
	Lamp/lantern – non-electric	1	0.0%	0	0.0%	0.0	0	0.0%	0.0
	Candle	54	2.4%	8	5.1%	148.1	2	11.8%	37.0
	Cutting torch/welding equipment	5	0.2%	0	0.0%	0.0	0	0.0%	0.0
	Hot ashes/embers (non-smoking)	16	0.7%	0	0.0%	0.0	0	0.0%	0.0
	Torch (non-cutting/welding)	31	1.4%	5	3.2%	161.3	0	0.0%	0.0
	Unclassified/cannot be determined	45	2.0%	7	4.5%	155.6	0	0.0%	0.0
Exposure		57	2.5%	2	1.3%	35.1	0	0.0%	0.0
Miscellaneous igniting object		62	2.7%	9	5.7%	145.2	0	0.0%	0.0
Cannot be determined		424	18.6%	12	7.6%	28.3	10	58.8%	23.6
TOTAL		2,279	100.0%	157	100.0%	68.9	17	100.0%	7.5

Table 7 shows the act or omission involved with residential structure fires reported to the OFC in 2019. Human failing was responsible for 42% of these fires (resulting in 59% of injuries and 41% of deaths). Other major acts/omissions were mechanical/ electrical failure/malfunctions (12% of fires, 5% of injuries, and 6% of deaths) and incendiary fires (9% fires, 6% injuries, and 0 deaths). The act or omission involved could not be determined in almost one-fifth (18%) of fires. For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 7 (p.25).

Table 7. All BC residential structure fires (2019) by act or omission, showing percentage of fires, number/rate of injuries, and number/rate of deaths

ACT OR OMISSION GROUPED	# FIRES	% FIRES	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES
Incendiary fires	206	9.1%	9	5.7%	43.7	0	0.0%	0.0
Misuse of source of ignition	184	8.1%	12	7.6%	65.2	0	0.0%	0.0
Misuse of material ignited	109	4.8%	14	8.9%	128.4	0	0.0%	0.0
Mechanical/electrical failure/malfunction	263	11.6%	8	5.1%	30.4	1	5.9%	3.8
Construction, design or installation deficiency	42	1.8%	1	0.6%	23.8	1	5.9%	23.8
Misuse of equipment	105	4.6%	3	1.9%	28.6	0	0.0%	0.0
Human failing	951	41.7%	92	58.6%	96.7	7	41.2%	7.4
Vehicle accident	1	0.0%		0.0%	0.0		0.0%	0.0
Miscellaneous act or omission	5	0.2%		0.0%	0.0		0.0%	0.0
Cannot be determined	399	17.5%	18	11.5%	45.1	7	41.2%	17.5
Not applicable	14	0.6%	0	0.0%	0.0	1	5.9%	71.4
TOTAL	2,279	100.0%	157	100.0%	68.9	17	100.0%	7.5

Table 8 shows the level of fire origin for residential structure fires reported to the OFC in 2019. Almost half (45%) originated on the ground floor of the building (45% injuries and 41% deaths) and a further 20% commenced on the second storey (25% injuries and 24% deaths). For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 8 (p.26).

Table 8. All BC residential structure fires (2019) by level of fire origin, showing percentage of fires, number/rate of injuries, and number/rate of deaths

LEVEL OF ORIGIN GROUPED	# FIRES	% FIRES	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES
Basement, sub-basement	188	8.2%	19	12.1%	101.1	1	5.9%	5.3
Ground floor, grade level or grade to 3m	1,029	45.2%	70	44.6%	68.0	7	41.2%	6.8
2nd storey or over 3-6m above grade	457	20.0%	40	25.5%	87.5	4	23.5%	8.8
3rd storey or over 6-9m (20-30ft) above grade	135	5.9%	9	5.7%	66.7	0	0.0%	0.0
4-12 storey or over 9-36m (30-120ft) above grade	203	8.9%	9	5.7%	44.3	2	11.8%	9.9
Over 12 storey or over 36m (120ft)	31	1.4%	2	1.3%	64.5	0	0.0%	0.0
Crawl space, under structure	21	0.9%		0.0%	0.0		0.0%	0.0
Mezzanine (any floor)	5	0.2%		0.0%	0.0		0.0%	0.0
Roof level (includes concealed roof space, attic)	63	2.8%	3	1.9%	47.6	0	0.0%	0.0
Exposure fire	72	3.2%	3	1.9%	41.7	1	5.9%	13.9
Cannot be determined	75	3.3%	2	1.3%	26.7	2	11.8%	26.7
TOTAL	2,279	100.0%	157	100.0%	68.9	17	100.0%	7.5

Table 9 shows the height of residential buildings that experienced a residential structure fire reported to the OFC in 2019. Almost 9 out of 10 (87%) of all residential structure fires occurred in buildings 6 storeys high or lower (92% of injuries and 100% of deaths). For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 9 (p.26).

Table 9. All BC residential structure fires (2019) by building height, showing percentage of fires, number/rate of injuries, and number/rate of deaths

BUILDING HEIGHT GROUPED	# FIRES	% FIRES	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES
1 storey above grade	562	24.7%	46	29.3%	81.9	11	64.7%	19.6
2 storeys above grade	839	36.8%	64	40.8%	76.3	3	17.6%	3.6
3 storeys above grade	287	12.6%	22	14.0%	76.7	1	5.9%	3.5
4 storeys above grade	209	9.2%	9	5.7%	43.1	2	11.8%	9.6
5 or 6 storeys above grade	91	4.0%	4	2.5%	44.0	0	0.0%	0.0
7 to 12 storeys above grade	127	5.6%	8	5.1%	63.0	0	0.0%	0.0
13 storeys and over above grade	103	4.5%	4	2.5%	38.8	0	0.0%	0.0
Cannot be determined	61	2.7%	0	0.0%	0.0	0	0.0%	0.0
TOTAL	2,279	100.0%	157	100.0%	68.9	17	100.0%	7.5



More than 3 out of 5 (**62%**) of all residential structure fires occur in **1 or 2 storey** buildings (**70%** of injuries and **82%** of deaths)



Influence of life safety systems on residential fire outcomes

Table 10 looks at the fire outcomes (casualties, fire department involvement in extinguishing fires, and extent of fire spread beyond the room of origin) for residential structure fires reported to the OFC in 2019 as a function of life safety systems in place. Smoke alarm status in this table represents those fires that had an alarm activated ('yes') or no smoke alarm installed ('no'). Similarly, sprinkler status represents those fires that had complete sprinkler protection ('yes') or no sprinkler protection ('no'). According to this classification process, the 'other' category fires shown in these tables were neither 'yes' or 'no' for smoke alarm nor for sprinkler protection. Where appropriate, 95% confidence intervals are included to show the estimated range around each rate and percentage.

Table 10. All BC residential structure fires (2019) by life safety system, showing number/percentage of fires, number/rate of injuries (with 95% confidence intervals, CI), number/rate of deaths (with 95% CI), fire department control (%; 95% CI), and extended beyond room of origin (%; 95% CI)

SMOKE ALARM	SPRINKLER	FIRES (% TOTAL)	INJURIES (% TOTAL)	INJURY RATE (95% CI)	DEATHS (% TOTAL)	DEATH RATE (95% CI)	% FIRE DEPARTMENT EXTINGUISH (95% CI)	% BEYOND ROOM OF ORIGIN (95% CI)
Yes	Yes	390 (17%)	16 (10%)	41.0 (20.9 61.1)	0 (0%)	0.0 (0.0 0.0)	13.6% (11.9% 15.3%)	2.1% (1.3% 2.8%)
No	Yes	90 (4%)	6 (4%)	66.7 (13.3 120.0)	0 (0%)	0.0 (0.0 0.0)	18.9% (14.8% 23.0%)	7.8% (5.0% 10.6%)
Yes	No	544 (24%)	58 (37%)	106.6 (79.2 134.1)	3 (18%)	5.5 (-0.7 11.8)	48.7% (46.6% 50.9%)	22.2% (20.5% 24.0%)
No	No	711 (31%)	52 (33%)	73.1 (53.3 93.0)	5 (29%)	7.0 (0.9 13.2)	55.6% (53.7% 57.4%)	33.5% (31.7% 35.2%)
Other	Other	544 (24%)	25 (16%)	46.0 (27.9 64.0)	9 (53%)	16.5 (5.7 27.4)	42.5% (40.3% 44.6%)	30.7% (28.7% 32.7%)
TOTAL		2,279 (100%)	157 (100%)	68.9 (58.1 79.7)	17 (100%)	7.5 (3.9 11.0)	42.2% (41.1% 43.2%)	23.7% (22.8% 24.6%)

With a focus on the presence/absence of fire safety systems, relative to the base case (no smoke alarm and no sprinkler protection), the following trends can be seen in Table 10:

- Injury rates are significantly higher in the presence of a working smoke alarm and no sprinkler protection – likely because residents attempted to control the fires themselves when the alarms activated;
- Death rates are significantly lower whenever the fires occurred in the presence of sprinkler protection;
- The presence of smoke alarms and/or sprinkler protection significantly reduced the dependence on the fire department to control the fires; and
- The presence of smoke alarms and/or sprinkler protection significantly reduced the extent to which fires spread beyond the room of origin.

For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 10 (p.26).



Fire-related casualties: 5-year trends

From 2015 to 2019 there were 968 fire-related injuries reported to the OFC (65% of these were male). During the same time there were 127 fire-related deaths reported (71% male).

Table 11 shows the annual casualties (2015-2019) for all fires reported to the OFC. The average injury rate per 1,000 fires over this time period was 28.6 and the average death rate was 3.8. The injury rate was fire/police was 2.0 and there were no fatalities for first responders in this data.

Table 11. All fire casualties and police/fire casualties (2015-2019), showing number/%/rate of injuries, and number/%/rate of deaths

YEAR	# FIRES	ALL CASUALTIES						FIRE/POLICE			
		# INJURIES	% INJURIES	INJURY RATE	# DEATHS	% DEATHS	DEATH RATE	# INJURIES	INJURY RATE	# DEATHS	DEATH RATE
2015	7,090	197	20.4%	27.8	23	18.1%	3.2	16	2.3	0	0.0
2016	6,259	185	19.1%	29.6	25	19.7%	4.0	11	1.8	0	0.0
2017	6,818	177	18.3%	26.0	26	20.5%	3.8	11	1.6	0	0.0
2018	6,742	204	21.1%	30.3	26	20.5%	3.9	20	3.0	0	0.0
2019	6,907	205	21.2%	29.7	27	21.3%	3.9	10	1.4	0	0.0
TOTAL	33,816	968	100.0%	28.6	127	100.0%	3.8	68	2.0	0	0.0

Table 12 shows all injuries and police/fire injuries by injury seriousness for all fires reported to the OFC between 2015 and 2019. The average rate for minor injuries over this time was 13.3 per 1,000 fires, with corresponding rates of 11.4 for light injuries and 4.0 for serious injuries. The rates for fire/police injuries were lower and the rate of serious injuries for this group was 0.1 per 1,000 fires.

Table 12. All fire casualties and police/fire casualties (2015-2019) by injury seriousness, showing number/rate of minor, light, and serious injuries

YEAR	# FIRES	ALL CASUALTIES (INJURY SERIOUSNESS AND RATE)						FIRE/POLICE (INJURY SERIOUSNESS AND RATE)					
		# MINOR	RATE MINOR	# LIGHT	RATE LIGHT	# SERIOUS	RATE SERIOUS	# MINOR	RATE MINOR	# LIGHT	RATE LIGHT	# SERIOUS	RATE SERIOUS
2015	7,090	96	13.5	79	11.1	22	3.1	12	1.7	4	0.6	0	0.0
2016	6,259	82	13.1	76	12.1	27	4.3	9	1.4	1	0.2	1	0.2
2017	6,818	85	12.5	70	10.3	22	3.2	5	0.7	6	0.9	0	0.0
2018	6,742	97	14.4	79	11.7	28	4.2	12	1.8	7	1.0	1	0.1
2019	6,907	89	12.9	80	11.6	36	5.2	6	0.9	3	0.4	1	0.1
TOTAL	33,816	449	13.3	384	11.4	135	4.0	44	1.3	21	0.6	3	0.1

NB. 'Minor' injuries required less than one day in hospital or off work, 'light' injuries required 1-2 days hospital and/or 1-15 days off work, and 'serious' injuries required 3 or more days in hospital and/or more than 15 days off work.

Table 13 shows the relative frequency of fire casualties by age group for all fires submitted to the OFC between 2015 and 2019. As over 50% of injuries and 26% of deaths were classified as 'missing' the age information, this table also corrects the percentages within each age group to remove the influence of unknowns. These percentages are then compared (for deaths) to the overall population size of each age group in Canada, using Census data. This shows that citizens who are aged 50 and over are overrepresented with respect to frequency of death by fire.

Table 13. All fire casualties (2015-2019) by age group, showing number/rate of injuries/deaths, correcting for 'unknown' ages, and in comparison, to the population size of each age group

AGE GROUP	ALL FIRES				CORRECTED (REMOVING UNKNOWN)		% POPULATION	DEATH: POPULATION RATIO
	# INJURIES	% INJURIES	# DEATHS	% DEATHS	% INJURIES	% DEATHS		
Under 5	18	1.9%	4	3.1%	3.7%	4.3%	4.7%	0.9
5 to 9	4	0.4%	1	0.8%	0.8%	1.1%	5.1%	0.2
10 to 14	4	0.4%	1	0.8%	0.8%	1.1%	5.0%	0.2
15 to 19	18	1.9%	1	0.8%	3.7%	1.1%	5.6%	0.2
20 to 24	34	3.5%	6	4.7%	7.1%	6.4%	6.2%	1.0
25 to 29	48	5.0%	1	0.8%	10.0%	1.1%	6.5%	0.2
30 to 34	45	4.6%	5	3.9%	9.3%	5.3%	6.8%	0.8
35 to 39	33	3.4%	4	3.1%	6.8%	4.3%	6.3%	0.7
40 to 44	46	4.8%	5	3.9%	9.5%	5.3%	6.3%	0.8
45 to 49	39	4.0%	3	2.4%	8.1%	3.2%	6.9%	0.5
50 to 54	40	4.1%	11	8.7%	8.3%	11.7%	7.6%	1.5
55 to 59	40	4.1%	13	10.2%	8.3%	13.8%	7.6%	1.8
60 to 64	28	2.9%	13	10.2%	5.8%	13.8%	7.0%	2.0
65 to 69	35	3.6%	10	7.9%	7.3%	10.6%	6.2%	1.7
70 to 74	18	1.9%	8	6.3%	3.7%	8.5%	4.3%	2.0
75 to 79	10	1.0%	1	0.8%	2.1%	1.1%	3.1%	0.3
80 and over	22	2.3%	7	5.5%	4.6%	7.4%	4.6%	1.6
Unknown	486	50.2%	33	26.0%				
TOTAL	968	100.0%	127	100.0%				

NB. Population estimates derived from the 2016 Census Profile, accessed at:
<https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/index-eng.cfm>



Citizens who are aged **50** and over are overrepresented with respect to frequency of death by fire.



Fire-related casualties: 2019 casualty behaviour

Focusing on the fires detailed in the residential structure fires section (above, commencing p.4), the following tables detail the information recorded about the fire-related casualties resulting from structure fires reported to the OFC in 2019 (resulting in 157 injuries and 17 deaths).

Table 14 shows the conditions of casualties from 2019 residential structure fires. Over one-quarter of injuries were unknown/unclassified and 47% were awake with no impairment at the time of injury. Almost half of deaths were unknown/unclassified and one-quarter (24%) were asleep at the time of the fire. For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 11 (p.27).

Table 14. All structure fire casualties (2019) by condition of casualty, showing number/% of injuries/deaths

CONDITION OF CASUALTY	# INJURIES	% INJURIES	# DEATHS	% DEATHS
Awake or no physical/mental impairment	74	47.1%	2	11.8%
Too young to react to fire emergency	1	0.6%	0	0.0%
Asleep at time of fire	25	15.9%	4	23.5%
Bedridden or other physical disability	0	0.0%	0	0.0%
Mental disability	2	1.3%	1	5.9%
Impairment by alcohol, drugs, or medication	11	7.0%	2	11.8%
Under restraint or detention	1	0.6%	0	0.0%
Unknown	33	21.0%	7	41.2%
Unclassified	10	6.4%	1	5.9%
TOTAL	157	100.0%	17	100.0%

Table 15 shows the actions of casualties from 2019 residential structure fires. One-quarter of injuries were unknown/unclassified, and 39% voluntarily entered/remained the fire area, and one-fifth (19%) were injured while attempting to escape. Over half of deaths (53%) were unknown/unclassified and 18% died attempting to escape. For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 12 (p.27).

Table 15. All structure fire casualties (2019) by action of casualty, showing number/% of injuries/deaths

ACTION OF CASUALTY	# INJURIES	% INJURIES	# DEATHS	% DEATHS
Injured while attempting to escape	30	19.1%	3	17.6%
Over-exertion, heart attack	1	0.6%	0	0.0%
Voluntarily entered/remained – rescue	5	3.2%	1	5.9%
Voluntarily entered/remained – fire fighting	39	24.8%	0	0.0%
Voluntarily entered/remained – save property	17	10.8%	0	0.0%
Loss of judgement/panic	13	8.3%	1	5.9%
Received delayed warning	4	2.5%	1	5.9%
Did not act	9	5.7%	2	11.8%
Unknown	25	15.9%	8	47.1%
Unclassified	14	8.9%	1	5.9%
TOTAL	157	100.0%	17	100.0%

Table 16 shows the cause of injuries from 2019 residential structure fires. Over half (52%) of injuries resulted from smoke inhalation and 40% resulted from burns. Almost half (47%) of deaths were classified as unknown with respect to the cause of injury, with a further 29% caused by smoke inhalation and 24% resulting from fire-related burns. For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 13 (p.27).

Table 16. *All structure fire casualties (2019) by cause of injury, showing number/% of injuries/deaths*

CAUSE OF INJURY	# INJURIES	% INJURIES	# DEATHS	% DEATHS
Smoke inhalation	82	52.2%	5	29.4%
Burns – fire/flames	45	28.7%	4	23.5%
Burns – hot substances	18	11.5%	0	0.0%
Struck by objects/persons	2	1.3%	0	0.0%
Falls	3	1.9%	0	0.0%
Explosives	1	0.6%	0	0.0%
Electrical current	1	0.6%	0	0.0%
Unknown	0	0.0%	8	47.1%
Unclassified	5	3.2%	0	0.0%
TOTAL	157	100.0%	17	100.0%

Table 17 shows the cause of failure to escape from 2019 residential structure fires. Almost 88% of injuries and 59% of deaths were classified as unknown/unclassified with respect to the cause of failure to escape. A further 29% of deaths were classified as trapped by fire/smoke. For equivalent presentation of 2014 to 2018 aggregated figures see Appendix Table 14 (p.27).

Table 17. *All structure fire casualties (2019) by cause of failure to escape, showing number/% of injuries/deaths*

CAUSE OF FAILURE TO ESCAPE	# INJURIES	% INJURIES	# DEATHS	% DEATHS
Trapped by fire/smoke – vertical openings	3	1.9%	1	5.9%
Trapped by fire/smoke – horizontal openings	6	3.8%	4	23.5%
High flame spread of combustible surfaces	3	1.9%	2	11.8%
Building collapse	0	0.0%	0	0.0%
Falling debris	2	1.3%	0	0.0%
Explosion	4	2.5%	0	0.0%
Exit locked/obstructed	1	0.6%	0	0.0%
Outdoor fire	0	0.0%	0	0.0%
Unknown	84	53.5%	9	52.9%
Unclassified	54	34.4%	1	5.9%
TOTAL	157	100.0%	17	100.0%

Appendix 1:

Fire Reporting 2014 to 2018

Appendix Table 1. All BC fires (2014-2018) by fire department type and incident type, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths

FIRE DEPARTMENT TYPE	INCIDENT TYPE	2014-18 FIRES	% FIRES	ANNUAL RATE	# INJURIES	INJURY/ 1,000 FIRES	# DEATHS	DEATH/ 1,000 FIRES
CAREER	All fires	17,552	52.5%	3,510.4	503	28.7	41	3.8
	Structure fire	7,174	21.4%	1,434.8	439	61.2	36	5.0
	Vehicle fire	1,844	5.5%	368.8	34	18.4	3	1.6
	Outdoor fire	8,518	25.5%	1,703.6	20	2.3	0	0.0
	Person fire	16	0.0%	3.2	10	625.0	2	125.0
COMPOSITE	All fires	14,244	42.6%	2,848.8	462	32.4	57	3.8
	Structure fire	6,327	18.9%	1,265.4	406	64.2	43	6.8
	Vehicle fire	3,360	10.0%	672.0	28	8.3	7	2.1
	Outdoor fire	4,529	13.5%	905.8	16	3.5	0	0.0
	Person fire	28	0.1%	5.6	12	428.6	7	250.0
VOLUNTEER	All fires	1,329	4.0%	265.8	40	30.1	22	3.8
	Structure fire	853	2.6%	170.6	36	42.2	18	21.1
	Vehicle fire	265	0.8%	53.0	3	11.3	4	15.1
	Outdoor fire	211	0.6%	42.2	1	4.7	0	0.0
	Person fire	0	0.0%	0.0	0	Undefined	0	Undefined
OTHER	All fires	321	1.0%	64.2	14	43.6	1	3.1
	Structure fire	131	0.4%	26.2	12	91.6	1	7.6
	Vehicle fire	159	0.5%	31.8	2	12.6	0	0.0
	Outdoor fire	31	0.1%	6.2	0	0.0	0	0.0
	Person fire	0	0.0%	0.0	0	Undefined	0	Undefined
TOTAL	All fires	33,446	100.0%	6,689.2	1,019	30.5	121	3.6
	Structure fire	14,485	43.3%	2,897.0	893	61.6	98	6.8
	Vehicle fire	5,628	16.8%	1,125.6	67	11.9	14	2.5
	Outdoor fire	13,289	39.7%	2,657.8	37	2.8	0	0.0
	Person fire	44	0.1%	8.8	22	500.0	9	204.5

Appendix Table 2. All BC fires (2014-2018) by OFC region, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths

FIRE BY OFC REGION	2014-18 FIRES	% FIRES	ANNUAL RATE	# INJURIES	INJURY/ 1,000 FIRES	# DEATHS	DEATH/ 1,000 FIRES
Lower Mainland	21,510	64.3%	4,302.0	710	33.0	62	2.9
Vancouver Island	5,054	15.1%	1,010.8	148	29.3	27	5.3
Thompson Okanagan	3,139	9.4%	627.8	29	9.2	17	5.4
South East	602	1.8%	120.4	27	44.9	1	1.7
Northern	2,508	7.5%	501.6	86	34.3	11	4.4
Regional districts	633	1.9%	126.6	19	30.0	3	4.7
TOTAL	33,446	100.0%	6,689.2	1,019	30.5	121	3.6

Appendix Table 3. All BC fires (2014-2018) by method of fire control, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths

METHOD OF FIRE CONTROL (GROUPED)	METHOD OF FIRE CONTROL SUB-CATEGORIES (FIRE DEPARTMENT INVOLVEMENT ONLY)	2014-18 FIRES	% FIRES	ANNUAL RATE	# INJURIES	INJURY/ 1,000 FIRES	# DEATHS	DEATH/ 1,000 FIRES
Hand held extinguisher		5,547	16.6%	1,109.4	144	26.0	3	0.5
Standpipe and hose systems		226	0.7%	45.2	3	13.3	1	4.4
Makeshift fire fighting aids		4,205	12.6%	841.0	143	34.0	1	0.2
Fire Department – water application	All fires	16,288	48.7%	3,257.6	498	30.6	97	6.0
	25mm (1") or less hose	1,476	4.4%	295.2	11	7.5	1	0.7
	38/42mm (1 1/2"/1 3/4") hose – 1 hand line	9,172	27.4%	1,834.4	222	24.2	29	3.2
	65/70mm (2 1/2"/3") hose – 1 hand line	188	0.6%	37.6	0	0.0	1	5.3
	38/42mm (1 1/2"/1 3/4") hose – 2 or more hand lines	3,324	9.9%	664.8	175	52.6	46	13.8
	65/70mm (2 1/2"/3") hose – 2 or more hand lines	375	1.1%	75.0	23	61.3	4	10.7
	Combo: 38/42/65/77mm or larger hand lines	646	1.9%	129.2	40	61.9	11	17.0
	Portable/fixed water deluge/master stream set	302	0.9%	60.4	10	33.1	3	9.9
	Unclassified	805	2.4%	161.0	17	21.1	2	2.5
Fire Department – other than water	All fires	1,209	3.6%	241.8	29	24.0	8	6.6
	Dry chemical – under 450kg	40	0.1%	8.0	0	0.0	0	0.0
	Dry chemical – 450kg and over	2	0.0%	0.4	0	0.0	0	0.0
	Combination foam-dry chemical	11	0.0%	2.2	0	0.0	0	0.0
	Compressed air foam systems	457	1.4%	91.4	11	24.1	6	13.1
	Crash-fire foam vehicle – using hand lines	74	0.2%	14.8	1	13.5	0	0.0
	Crash-fire foam vehicle – using monitor	1	0.0%	0.2	0	0.0	0	0.0
	Pumper – foam hand lines only	395	1.2%	79.0	8	20.3	2	5.1
	Unclassified	229	0.7%	45.8	9	39.3	0	0.0
Sprinkler protection		564	1.7%	112.8	49	86.9	3	5.3
Fixed system other than sprinklers		191	0.6%	38.2	3	15.7	0	0.0
Burned out		3,669	11.0%	733.8	101	27.5	6	1.6
Miscellaneous method of fire control/extinguishment		192	1,123	3.4%	224.6	35	31.2	0
Cannot be determined		100	424	1.3%	84.8	14	33.0	2
GRAND TOTAL		33,446	100.0%	6,689.2	1,019	30.5	121	3.6

Appendix Table 4. All BC structure fires (2014-2018) by property complex, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths

PROPERTY COMPLEX GROUP	PROPERTY COMPLEX SUB-GROUP	2014-18 FIRES	% FIRES	ANNUAL RATE	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES
Assembly use	<i>(Total for whole group)</i>	772	5.3%	154.4	8	0.9%	10.4	0	0.0%	0.0
	Amusement park, exhibition & fair ground, stadium	6	0.0%	1.2	0	0.0%	0.0	0	0.0%	0.0
	Auditorium, theatre, arena, cultural centre	38	0.3%	7.6	0	0.0%	0.0	0	0.0%	0.0
	Church, funeral home	52	0.4%	10.4	0	0.0%	0.0	0	0.0%	0.0
	Educational institution (non-residential)	204	1.4%	40.8	4	0.4%	19.6	0	0.0%	0.0
	Food or beverage establishment	374	2.6%	74.8	4	0.4%	10.7	0	0.0%	0.0
	Recreation, sports facility, sports club, social club	98	0.7%	19.6	0	0.0%	0.0	0	0.0%	0.0
Institutional use	<i>(Total for whole group)</i>	167	1.2%	33.4	12	1.3%	71.9	0	0.0%	0.0
	Hospital, medical centre, clinic, sanatorium	66	0.5%	13.2	2	0.2%	30.3	0	0.0%	0.0
	Licensed care facility	82	0.6%	16.4	9	1.0%	109.8	0	0.0%	0.0
	Prison, penitentiary, jail, detention centre, correctional facility, reformatory	19	0.1%	3.8	1	0.1%	52.6	0	0.0%	0.0
Residential use	<i>(Total for whole group)</i>	11,164	77.1%	2232.8	806	90.3%	72.2	94	95.9%	8.4
	Camp site/RV park	35	0.2%	7.0	5	0.6%	142.9	2	2.0%	57.1
	Educational institution (residential)	22	0.2%	4.4	0	0.0%	0.0	0	0.0%	0.0
	Hotel, motel, lodge, hostel, boarding house, dormitory	606	4.2%	121.2	35	3.9%	57.8	2	2.0%	3.3
	Residential – row, garden, town housing, condominium	1,036	7.1%	207.2	76	8.5%	73.4	5	5.1%	4.8
	Residential – single detached	5,856	40.4%	1171.2	390	43.7%	66.6	56	57.1%	9.6
	Residential – apartment	2,572	17.8%	514.4	213	23.9%	82.8	9	9.2%	3.5
	Residential – duplex, 3-plex, 4-plex	522	3.6%	104.4	50	5.6%	95.8	6	6.1%	11.5
	Residential – mobile home/trailer park	357	2.5%	71.4	27	3.0%	75.6	13	13.3%	36.4
	Residential – with business/mercantile, up to 3 stories	158	1.1%	31.6	10	1.1%	63.3	1	1.0%	6.3
Business use	Office building	206	1.4%	41.2	1	0.1%	4.9	2	2.0%	9.7
Commercial/mercantile use	<i>(Total for whole group)</i>	655	4.5%	131.0	12	1.3%	18.3	1	1.0%	1.5
	Commercial centre including fuel dispensing (may include restaurant, stores, etc.)	139	1.0%	27.8	4	0.4%	28.8	0	0.0%	0.0
	Commercial centre, shopping centre, strip mall	344	2.4%	68.8	5	0.6%	14.5	0	0.0%	0.0
	Department store, variety store	109	0.7%	21.8	3	0.3%	27.5	1	1.0%	9.2
	Service station with storage in back lot (includes fuel dispensing)	37	0.3%	7.4	0	0.0%	0.0	0	0.0%	0.0
	Strip mall including fuel dispensing	26	0.2%	5.2	0	0.0%	0.0	0	0.0%	0.0
Manufacturing use	Industrial manufacturing	560	3.9%	112.0	30	3.4%	53.6	1	1.0%	1.8
Storage use	<i>(Total for whole group)</i>	66	100.0%	13.2	3	0.3%	45.5	0	0.0%	0.0
	Grain elevator	18	27.1%	3.6	1	0.1%	55.6	0	0.0%	0.0
	Industrial storage facility, bulk storage tanks	48	72.9%	9.6	2	0.2%	41.7	0	0.0%	0.0
Other special use	<i>(Total for whole group)</i>	874	6.1%	174.8	21	2.4%	24.0	0	0.0%	0.0
	Air transportation use, air terminal, airport	15	0.1%	3.0	0	0.0%	0.0	0	0.0%	0.0
	Building/structure unclassified (describe)	505	3.5%	101.0	14	1.6%	27.7	0	0.0%	0.0
	Bus terminal	1	0.0%	0.2	0	0.0%	0.0	0	0.0%	0.0
	Car park	22	0.2%	4.4	0	0.0%	0.0	0	0.0%	0.0

PROPERTY COMPLEX GROUP	PROPERTY COMPLEX SUB-GROUP	2014-18 FIRES	% FIRES	ANNUAL RATE	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES
	Communications	2	0.0%	0.4	0	0.0%	0.0	0	0.0%	0.0
	Farm or agricultural use	187	1.3%	37.4	4	0.4%	21.4	0	0.0%	0.0
	Harbour, waterfront property, marine terminal	25	0.2%	5.0	1	0.1%	40.0	0	0.0%	0.0
	Laboratory	9	0.1%	1.8	0	0.0%	0.0	0	0.0%	0.0
	Military base	2	0.0%	0.4	0	0.0%	0.0	0	0.0%	0.0
	Mine	1	0.0%	0.2	0	0.0%	0.0	0	0.0%	0.0
	Nucleonic complex	1	0.0%	0.2	0	0.0%	0.0	0	0.0%	0.0
	Parks (federal, provincial or city) (includes historic sites)	35	0.2%	7.0	0	0.0%	0.0	0	0.0%	0.0
	Railway terminal, yard (excludes subway)	11	0.1%	2.2	1	0.1%	90.9	0	0.0%	0.0
	Subway	1	0.0%	0.2	0	0.0%	0.0	0	0.0%	0.0
	Utility	57	0.4%	11.4	1	0.1%	17.5	0	0.0%	0.0
Unknown	Cannot be determined	21	0.1%	4.2	0	0.0%	0.0	0	0.0%	0.0
TOTAL		14,485	199.5%	2,897	893	100.0%	61.6	98	100.0%	6.8

Appendix Table 5. All BC residential structure fires (2014-2018) by room of fire origin, showing percentage of fires (annual rate), number/rate of injuries, number/rate of deaths, and number/rate of fires that extended beyond the room of origin

ROOM OF ORIGIN GROUPED	2014-18 FIRES	% FIRES	ANNUAL RATE	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES	# EXTENDED BEYOND ROOM OF ORIGIN	% EXTENDED BEYOND ROOM OF ORIGIN
Bathroom	250	2.2%	50.0	24	3.0%	96.0	3	3.2%	12.0	45	18.0%
Bedroom	1,050	9.4%	210.0	160	19.9%	152.4	26	27.7%	24.8	250	23.8%
Office	30	0.3%	6.0		0.0%	0.0		0.0%	0.0	8	26.7%
Closet	41	0.4%	8.2	3	0.4%	73.2	0	0.0%	0.0	9	22.0%
Assembly area – other	91	0.8%	18.2	2	0.2%	22.0	0	0.0%	0.0	40	44.0%
Laundry room	367	3.3%	73.4	16	2.0%	43.6	1	1.1%	2.7	54	14.7%
Hallways and means of egress	256	2.3%	51.2	3	0.4%	11.7	2	2.1%	7.8	40	15.6%
Living room	784	7.0%	156.8	84	10.4%	107.1	24	25.5%	30.6	253	32.3%
Function area – unclassified	42	0.4%	8.4	2	0.2%	47.6	0	0.0%	0.0	13	31.0%
Foyer	60	0.5%	12.0	4	0.5%	66.7	1	1.1%	16.7	25	41.7%
Kitchen	3,739	33.4%	747.8	321	39.8%	85.9	10	10.6%	2.7	320	8.6%
Dining area	73	0.7%	14.6	11	1.4%	150.7	0	0.0%	0.0	8	11.0%
Porch	554	5.0%	110.8	27	3.3%	48.7	3	3.2%	5.4	167	30.1%
Balcony	344	3.1%	68.8	22	2.7%	64.0	2	2.1%	5.8	140	40.7%
Storage area	225	2.0%	45.0	14	1.7%	62.2	2	2.1%	8.9	137	60.9%
Garage	459	4.1%	91.8	27	3.3%	58.8	3	3.2%	6.5	220	47.9%
Outside area – other	417	3.8%	83.4	8	1.0%	19.2	0	0.0%	0.0	241	57.8%
Utility, equipment, furnace room	320	2.9%	64.0	13	1.6%	40.6	1	1.1%	3.1	65	20.3%
Trash area	96	0.9%	19.2	3	0.4%	31.3	1	1.1%	10.4	38	39.6%
Chimney, flue pipe, gas vent	314	2.8%	62.8	4	0.5%	12.7	0	0.0%	0.0	29	9.2%
Service facilities	62	0.6%	12.4	5	0.6%	80.6	0	0.0%	0.0	5	8.1%
Crawl space	63	0.6%	12.6	9	1.1%	142.9	1	1.1%	15.9	33	52.4%
Structural area – other	978	8.8%	195.6	27	3.3%	27.6	3	3.2%	3.1	399	40.8%
All other areas	549	4.9%	109.8	17	2.1%	31.0	11	11.7%	20.0	382	69.6%
TOTAL	11,164	100.0%	2,232.8	806	100.0%	72.2	94	100.0%	8.4	2,921	26.2%

Appendix Table 6. All BC residential structure fires (2014-2018) by source of ignition, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths

SOURCE OF IGNITION GROUPED	SOURCE SUB-CATEGORY (SMOKER'S MATERIAL ONLY)	2014-18 FIRES	% FIRES	ANNUAL RATE	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES
Cooking equipment		3,736	33.4%	747.2	320	39.7%	85.7	5	5.3%	1.3
Heating equipment		975	8.7%	195.0	46	5.7%	47.2	8	8.5%	8.2
Appliances & equipment		94	559	5.0%	111.8	52	6.5%	93.0	2	2.1%
Electrical distribution equipment		145	664	5.9%	132.8	39	4.8%	58.7	4	4.3%
Other electrical equipment		77	421	3.8%	84.2	24	3.0%	57.0	3	3.2%
Smoker's material and open flame	(Total for whole group)	2,071	18.5%	414.2	195	24.2%	94.2	34	36.2%	16.4
	Cigarette, pipe, or cigar	0	0.0%	0.0	0	7.6%	93.8	8	8.5%	12.3
	Ashtray	0	0.0%	0.0	0	0.5%	65.6	1	1.1%	16.4
	Lighter or match	0	0.0%	0.0	0	4.1%	54.4	12	12.8%	19.8
	Lamp/lantern – non-electric	0	0.0%	0.0	0	0.1%	1000.0	0	0.0%	0.0
	Candle	0	0.0%	0.0	0	7.3%	258.8	3	3.2%	13.2
	Cutting torch/welding equipment	0	0.0%	0.0	0	0.0%	0.0	1	1.1%	38.5
	Hot ashes/embers (non-smoking)	0	0.0%	0.0	0	1.0%	72.7	1	1.1%	9.1
	Torch (non-cutting/welding)	0	0.0%	0.0	0	1.5%	84.5	0	0.0%	0.0
	Unclassified/cannot be determined	0	0.0%	0.0	0	2.1%	69.1	8	8.5%	32.5
Exposure		349	3.1%	69.8	0	0.0%	0.0	1	1.1%	2.9
Miscellaneous igniting object		297	2.7%	59.4	11	1.4%	37.0	1	1.1%	3.4
Cannot be determined		2,092	18.8%	418.4	119	14.8%	56.9	36	38.3%	17.2
TOTAL		11,164	100.0%	2,232.8	806	100.0%	72.2	94	100.0%	8.4

Appendix Table 7. All BC residential structure fires (2014-2018) by act or omission, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths

ACT OR OMISSION GROUPED	# FIRES	% FIRES	ANNUAL RATE	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES
Incendiary fires	1,082	9.7%	216.4	30	3.7%	27.7	11	11.7%	10.2
Misuse of source of ignition	781	7.0%	156.2	56	6.9%	71.7	10	10.6%	12.8
Misuse of material ignited	644	5.7%	128.8	74	9.2%	114.9	3	3.2%	4.7
Mechanical/electrical failure/malfunction	1,276	11.4%	255.2	70	8.7%	54.9	7	7.4%	5.5
Construction, design or installation deficiency	222	2.0%	44.4	8	1.0%	36.0	0	0.0%	0.0
Misuse of equipment	493	4.4%	98.6	10	1.2%	20.3	0	0.0%	0.0
Human failing	4,634	41.5%	926.8	428	53.1%	92.4	27	28.7%	5.8
Vehicle accident	8	0.1%	1.6	0	0.0%	0.0	0	0.0%	0.0
Miscellaneous act or omission	50	0.4%	10.0	13	1.6%	260.0	2	2.1%	40.0
Cannot be determined	1,879	16.9%	375.8	114	14.1%	60.7	34	36.2%	18.1
Not applicable	95	0.8%	19.0	3	0.4%	31.6	0	0.0%	0.0
TOTAL	11,164	100.0%	2,232.8	806	100.0%	72.2	94	100.0%	8.4

Appendix Table 8. All BC residential structure fires (2014-2018) by level of fire origin, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths

LEVEL OF ORIGIN GROUPED	# FIRES	% FIRES	ANNUAL RATE	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES
Basement, sub-basement	942	8.4%	188.4	80	9.9%	84.9	9	9.6%	9.6
Ground floor, grade level or grade to 3m	5,221	46.7%	1,044.2	430	53.3%	82.4	60	63.8%	11.5
2nd storey or over 3-6m above grade	2,057	18.4%	411.4	162	20.1%	78.8	17	18.1%	8.3
3rd storey or over 6-9m (20-30ft) above grade	665	6.0%	133.0	49	6.1%	73.7	4	4.3%	6.0
4-12 storey or over 9-36m (30-120ft) above grade	684	6.2%	136.8	54	6.7%	78.9	3	3.2%	4.4
Over 12 storey or over 36m (120ft)	129	1.2%	25.8	5	0.6%	38.8	0	0.0%	0.0
Crawl space, under structure	78	0.7%	15.6	3	0.4%	38.5	0	0.0%	0.0
Mezzanine (any floor)	136	1.2%	27.2	6	0.7%	44.1	0	0.0%	0.0
Roof level (includes concealed roof space, attic)	400	3.6%	80.0	7	0.9%	17.5	0	0.0%	0.0
Exposure fire	350	3.1%	70.0	2	0.2%	5.7	0	0.0%	0.0
Cannot be determined	502	4.5%	100.4	8	1.0%	15.9	1	1.1%	2.0
TOTAL	11,164	100.0%	2,232.8	806	100.0%	72.2	94	100.0%	8.4

Appendix Table 9. All BC residential structure fires (2014-2018) by building height, showing percentage of fires (annual rate), number/rate of injuries, and number/rate of deaths

BUILDING HEIGHT GROUPED	# FIRES	% FIRES	ANNUAL RATE	# INJURED	% INJURIES	INJURY/ 1,000 FIRES	# DEATHS	% DEATHS	DEATH/ 1,000 FIRES
1 storey above grade	2,821	25.3%	564.2	182	22.6%	64.5	41	43.6%	14.5
2 storeys above grade	4,479	40.1%	895.8	335	41.6%	74.8	35	37.2%	7.8
3 storeys above grade	1,590	14.2%	318.0	140	17.4%	88.1	12	12.8%	7.5
4 storeys above grade	819	7.3%	163.8	72	8.9%	87.9	1	1.1%	1.2
5 or 6 storeys above grade	329	2.9%	65.8	13	1.6%	39.5	0	0.0%	0.0
7 to 12 storeys above grade	451	4.0%	90.2	19	2.4%	42.1	2	2.1%	4.4
13 storeys and over above grade	411	3.7%	82.2	37	4.6%	90.0	2	2.1%	4.9
Cannot be determined	264	2.4%	52.8	8	1.0%	30.3	1	1.1%	3.8
TOTAL	11,164	100.0%	2,232.8	806	100.0%	72.2	94	100.0%	8.4

Appendix Table 10. All BC residential structure fires (2014-2018) by life safety system, showing number/percentage of fires, number/rate of injuries (with 95% confidence intervals, CI), number/rate of deaths (with 95% CI), fire department control (% , 95% CI), and extended beyond room of origin (% , 95% CI)

SMOKE ALARM	SPRINKLER	FIRES (% TOTAL)	INJURIES (% TOTAL)	INJURY RATE (95% CI)	DEATHS (% TOTAL)	DEATH RATE (95% CI)	% FIRE DEPARTMENT EXTINGUISH (95% CI)	% BEYOND ROOM OF ORIGIN (95% CI)
Yes	Yes	1,003 (9%)	75 (9%)	74.8 (57.9 91.7)	4 (4%)	4.0 (0.1 7.9)	14.0% (12.9% 15.1%)	3.7% (3.1% 4.3%)
No	Yes	37 (0%)	6 (1%)	162.2 (32.4 291.9)	0 (0%)	0.0 (0.0 0.0)	21.6% (14.9% 28.4%)	13.5% (7.9% 19.1%)
Yes	No	2,693 (24%)	301 (37%)	111.8 (99.1 124.4)	23 (24%)	8.5 (5.1 12.0)	48.8% (47.8% 49.7%)	29.4% (28.5% 30.3%)
No	No	1,373 (12%)	86 (11%)	62.6 (49.4 75.9)	21 (22%)	15.3 (8.8 21.8)	71.0% (69.8% 72.2%)	52.1% (50.8% 53.5%)
Other	Other	6,058 (54%)	338 (42%)	55.8 (49.8 61.7)	46 (49%)	7.6 (5.4 9.8)	39.7% (39.1% 40.4%)	24.6% (24.0% 25.1%)
TOTAL		11,164 (100%)	806 (100%)	72.2 (67.2 77.2)	94 (100%)	8.4 (6.7 10.1)	43.4% (42.9% 43.8%)	27.2% (26.8% 27.6%)

Appendix Table 11. All structure fire casualties (2014-2018) by condition of casualty, showing number/% of injuries/deaths

CONDITION OF CASUALTY	# INJURIES	% INJURIES	# DEATHS	% DEATHS
Awake or no physical/mental impairment	387	48.0%	13	13.8%
Too young to react to fire emergency	4	0.5%	1	1.1%
Asleep at time of fire	144	17.9%	20	21.3%
Bedridden or other physical disability	14	1.7%	5	5.3%
Mental disability	6	0.7%	0	0.0%
Impairment by alcohol, drugs, or medication	48	6.0%	6	6.4%
Under restraint or detention	0	0.0%	0	0.0%
Unknown	138	17.1%	38	40.4%
Unclassified	65	8.1%	11	11.7%
TOTAL	806	100.0%	94	100.0%

Appendix Table 12. All structure fire casualties (2014-2018) by action of casualty, showing number/% of injuries/deaths

ACTION OF CASUALTY	# INJURIES	% INJURIES	# DEATHS	% DEATHS
Injured while attempting to escape	171	21.2%	12	12.8%
Over-exertion, heart attack	4	0.5%	0	0.0%
Voluntarily entered/remained – rescue	34	4.2%	1	1.1%
Voluntarily entered/remained – fire fighting	220	27.3%	2	2.1%
Voluntarily entered/remained – save property	53	6.6%	2	2.1%
Loss of judgement/panic	60	7.4%	7	7.4%
Received delayed warning	14	1.7%	2	2.1%
Did not act	52	6.5%	16	17.0%
Unknown	78	9.7%	15	16.0%
Unclassified	120	14.9%	37	39.4%
TOTAL	806	100.0%	94	100.0%

Appendix Table 13. All structure fire casualties (2014-2018) by cause of injury, showing number/% of injuries/deaths

CAUSE OF INJURY	# INJURIES	% INJURIES	# DEATHS	% DEATHS
Smoke inhalation	397	49.3%	45	47.9%
Burns – fire/flames	200	24.8%	19	20.2%
Burns – hot substances	80	9.9%	2	2.1%
Struck by objects/persons	10	1.2%	1	1.1%
Falls	22	2.7%	1	1.1%
Explosives	3	0.4%	0	0.0%
Electrical current	1	0.1%	0	0.0%
Unknown	47	5.8%	4	4.3%
Unclassified	46	5.7%	22	23.4%
TOTAL	806	100.0%	94	100.0%

Appendix Table 14. All structure fire casualties (2014-2018) by cause of failure to escape, showing number/% of injuries/deaths

CAUSE OF FAILURE TO ESCAPE	# INJURIES	% INJURIES	# DEATHS	% DEATHS
Trapped by fire/smoke – vertical openings	46	5.7%	5	5.3%
Trapped by fire/smoke – horizontal openings	22	2.7%	17	18.1%
High flame spread of combustible surfaces	24	3.0%	9	9.6%
Building collapse	0	0.0%	0	0.0%
Falling debris	2	0.2%	0	0.0%
Explosion	18	2.2%	2	2.1%
Exit locked/obstructed	4	0.5%	1	1.1%
Outdoor fire	6	0.7%	0	0.0%
Unknown	348	43.2%	43	45.7%
Unclassified	336	41.7%	17	18.1%
TOTAL	806	100.0%	94	100.0%



Office of the
Fire Commissioner
Emergency Management BC

