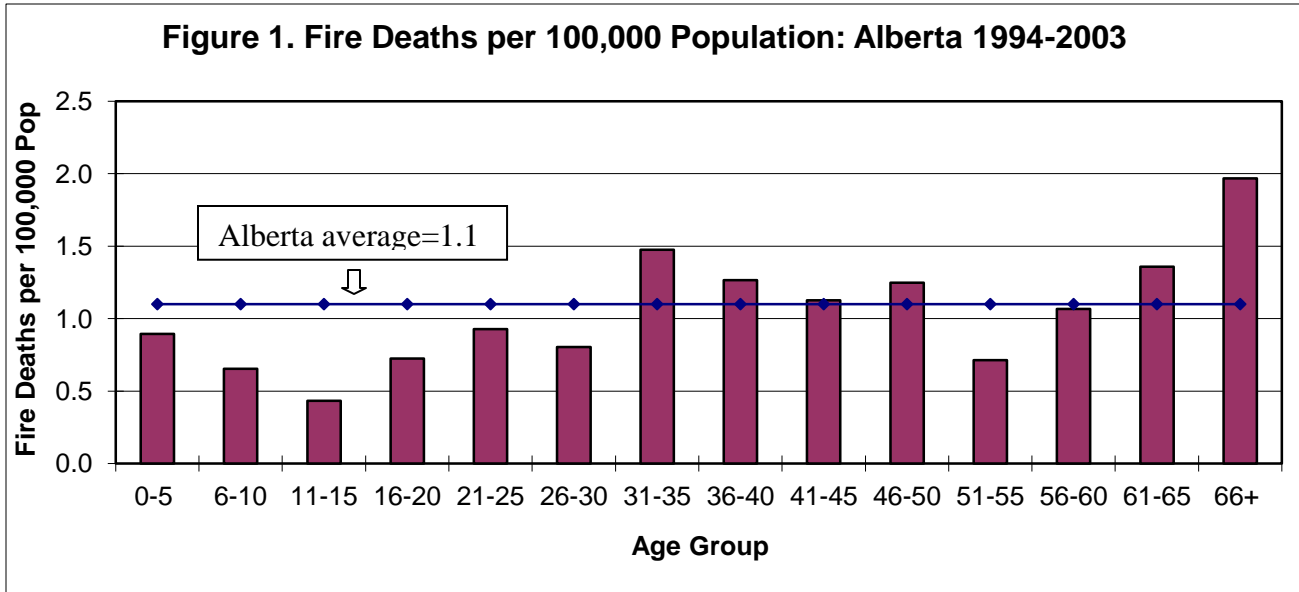
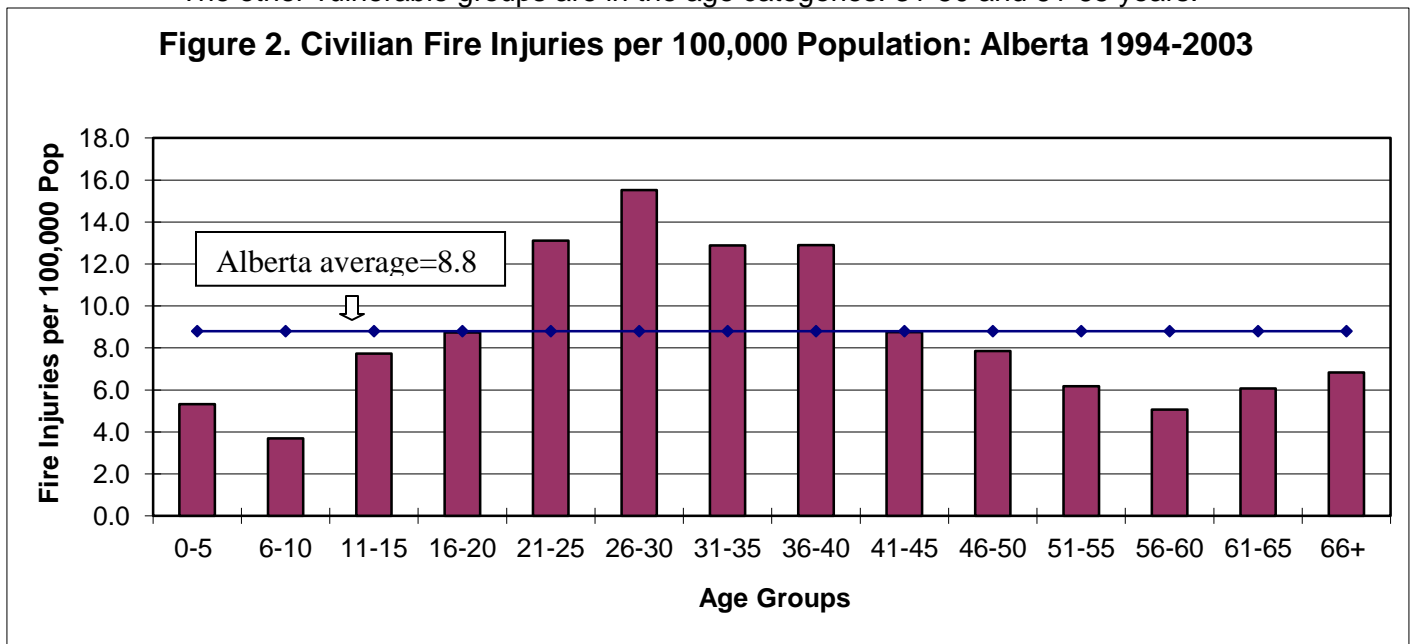


Fire Risk Assessment Document #2:
2.1 Vulnerable groups:



Comments:

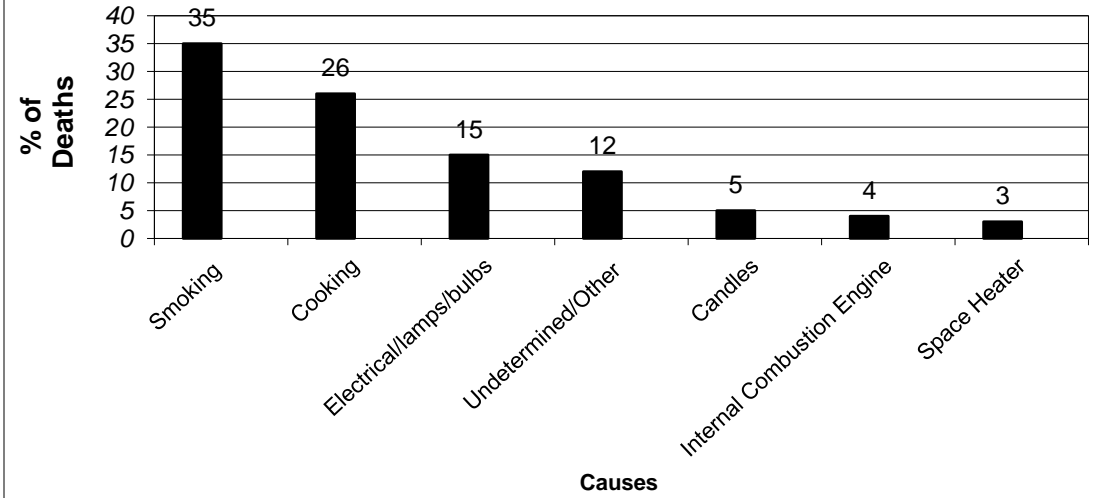
- Seniors 66+ years of age are the most vulnerable to fire deaths in Alberta. Their death rate is ~2x the Alberta average of 1.1 fire death per 100,000 population.
- The other vulnerable groups are in the age categories: 31-50 and 61-65 years.



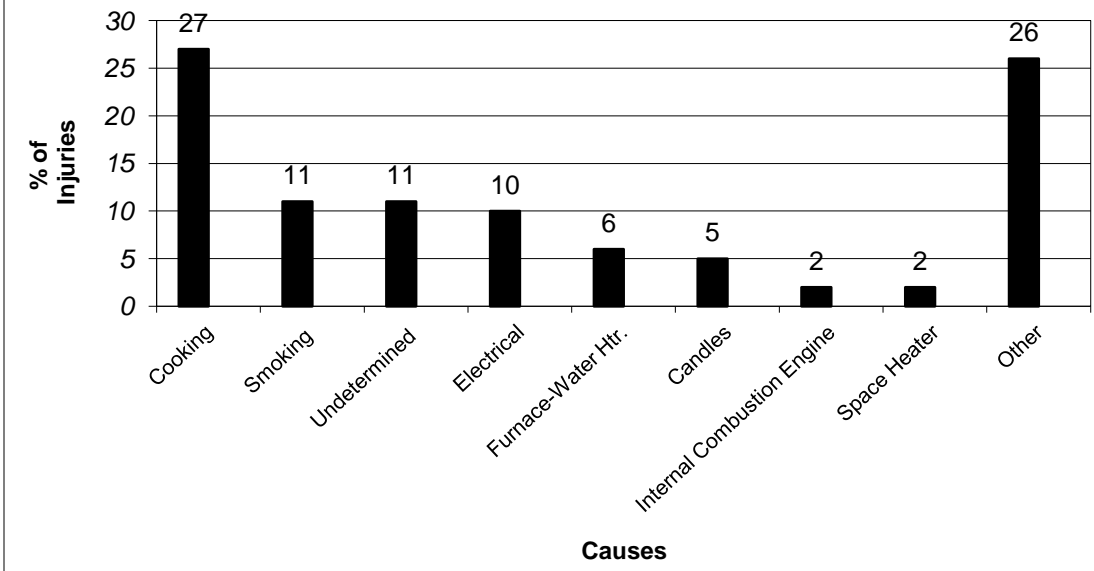
Comments:

- Age groups between 21-40 have the highest fire injury rates in Alberta. Their injury rates are ~1.5 times higher on average than the Alberta average of 8.8 fire injuries per 100,000 population.

**Figure 3. Fire Deaths in Seniors (66+ Years) by Sources of Ignition
Alberta: 1994 - 2003**



**Figure 4. Fire Injuries in Age Group 21-40 years by Sources of Ignition
Alberta: 1994 - 2003**



2.2 Fire Losses by Type of Community

Table 1. Fire Losses in Alberta - 1994 - 2003

Year	Fires	%	Deaths	Injuries	Property Losses \$
1994	6,897	11	25	490	110,138,438
1995	6,528	10	36	425	111,140,466
1996	6,304	10	41	451	120,556,429
1997	6,670	10	37	448	141,964,034
1998	6,579	10	20	429	139,492,065
1999	6,380	10	51	386	146,519,201
2000	6,457	10	27	341	158,746,151
2001	7,022	11	43	393	230,420,249
2002	5,985	9	31	307	274,613,170
2003	5,628	9	24	323	346,163,328
Total	64,450	100	335	3,993	1,779,753,531

Table 2. Fire Losses in Major Alberta Urban Centres : 1994-2003

Municipality	Fires	Deaths	Injuries	Property Loss \$
Airdrie	216	0	30	7,606,944
Calgary	16875	57	1272	311,728,143
Camrose	220	0	12	4,797,797
Edmonton	12278	52	1128	223,775,374
Fort McMurray	781	2	59	13,607,377
Fort Saskatchewan	257	0	9	9,658,806
Grande Prairie	1340	2	49	15,808,448
Lethbridge	1650	3	81	19,028,458
Lloydminster	195	1	10	5,790,997
Medicine Hat	992	6	83	19,598,436
Red Deer	1003	6	68	18,728,224
Spruce Grove	230	0	13	3,569,741
St. Albert	603	1	33	7,020,501
Wetaskiwin	144	4	4	4,112,344
Sherwood Park	452	1	22	4,241,300
Cold Lake	144	2	7	2,307,520
Total	37,380	137	2880	671,380,410
Annual Rate	Fires /1000 Pop.	Fire Deaths /100,000 Pop.	Fire Injuries /100,000 Pop.	\$Losses/ Capita
	1.8	.7	13.7	32

Urban Centres include: Airdrie 23,680; Calgary 922,315; Camrose 15,669; Cold Lake 11,595; Edmonton 666,104; Fort Saskatchewan 13,824; Grande Prairie 40,226; Leduc 15,630; Lethbridge 72,717; Lloydminster – Alberta side only 13,148; Medicine Hat 51,249; Red Deer 72,691; Spruce Grove 17,082; St. Albert 54,588; Wetaskiwin 11,154; Ft. McMurray 47,240; Sherwood Park 51,544. **Total Population in Urban Centres: Cities (2,001,672) + Sherwood Park (51,544) + Ft. McMurray (47,240) = 2,100,456**

Population data source <http://www.municipalaffairs.gov.ab.ca/ms/pdf/2003pop.pdf>

Table 3. Fire Losses in First Nations & Metis Communities: Alberta, 1994 - 2003

	Fires	Deaths	Injuries	Property Loss \$
1994	102	3	4	2,127,011
1995	78	3	7	1,888,787
1996	75	4	6	2,348,916
1997	146	5	10	3,406,667
1998	104	0	15	4,178,728
1999	131	12	7	5,409,544
2000	148	2	11	4,215,599
2001	148	7	6	7,880,105
2002	133	2	6	3,623,133
2003	102	0	13	7,633,497
TOTAL	1,167	38	85	42,711,987
Annual Rate	Fires /1000 Pop.	Fire Deaths /100,000 Pop.	Fire Injuries /100,000 Pop.	\$Losses/ Capita
	1.9	6.1	13.6	68.20

Total Population on First Nations and Metis Communities = **First Nations (57,469) + Metis (5,146) = 62,615**

Population data source: <http://www.municipalaffairs.gov.ab.ca/ms/pdf/2003pop.pdf>

Table 4. Fire Losses in Rural Alberta Municipalities: 1994-2003

Year	Fires	Deaths	Injuries	Property Loss \$
1994	2672	12	131	69,833,416
1995	2430	15	98	73,575,706
1996	2465	20	87	75,998,122
1997	2605	16	90	83,324,603
1998	2747	13	106	87,562,720
1999	2623	23	96	85,885,909
2000	2870	13	110	99,285,402
2001	2998	20	119	136,222,807
2002	2338	11	96	116,707,847
2003	2155	17	95	237,267,582
Total	25903	160	1028	1,065,664,114
Annual Rate	Fires /1000 Pop.	Fire Deaths /100,000 Pop.	Fire Injuries /100,000 Pop.	\$Losses/ Capita
	2.8	1.7	11.1	115

Population data source: <http://www.municipalaffairs.gov.ab.ca/ms/pdf/2003pop.pdf>

Population in Rural municipalities = 928,760 (Rural centres include all municipalities other than urban, First Nations and Metis communities).

Total Alberta Population = 3,091,831

Comments:

- Fire death rate in Aboriginal communities (6.1) is ~ 4 times higher than in rural municipalities (1.7) and ~ 9 times higher than in urban centres (.7).
- Fire rate is ~1.5 times higher in rural communities (2.8) compared to urban and Aboriginal communities.

2.3 Fire Losses in Major Occupancies in Alberta

Table 5. Fires and Losses in Major Occupancies, Alberta - 1994-2003

Occupancy	Fires	%	Deaths	Injuries	Property Loss \$
Assembly	1679	2.6	1	103	92,244,562
Institutional	368	0.6	5	63	21,348,934
Residential	18085	28.1	233	2523	637,344,707
Business and Personal Service	395	0.6	1	25	22,984,638
Mercantile	1280	2.0	3	140	141,761,665
Industrial Manufacturing Properties	1177	2.0	2	191	323,386,274
Storage Properties	3793	6.0	8	227	142,767,484
Special Property-Transportation Equip.	31270	48.5	73	553	268,894,796
Miscellaneous Property	6403	10.0	9	168	129,023,451
Total	64450	100.4	335	3993	1,779,756,511

Table 6. Fire Losses in Residential Occupancies in Alberta - 1994 - 2003

Type of Residence	Fires	%	Deaths	Injuries	Property Losses \$
One and Two Family Dwellings	11,174	62	139	1,349	414,253,161
Apartments	4,080	23	38	882	150,714,679
Rooming, Boarding, Lodging House (less than 10 persons)	53	0	2	19	2,644,008
Rooming, Boarding, Lodging House-Unclass.	47	0	2	8	1,234,681
Hotel, Inn, Lodge (year round use)	275	2	0	44	10,701,934
Hotel, Inn, Lodge (seasonal use, in season)	1	0	0	0	6,000
Hotel, Inn, Lodge (seasonal use, off season)	3	0	0	0	176,000
Hotel, Inn, Lodge (hostels)	12	0	0	2	84,102
Hotel, Inn, Lodge-Unclass.	4	0	0	0	353
Motor Hotel, Motel (fewer than 3 units)	3	0	0	2	34,282
Motor Hotel, Motel (3 to 20 units)	23	0	0	1	646,328
Motor Hotel, Motel (over 20 units)	60	0	2	14	2,843,981
Motor Hotel, Motel-Unclass.	7	0	0	0	152,301
School, College or University Dormitory	20	0	0	0	139,318
Sorority or Social Club, Fraternity	2	0	0	0	100,001
Military Barracks	2	0	0	0	215,100
Convent, Monastery or Other Religious Dormitories	4	0	0	0	31,200
Bunkhouse & Worker's Barracks	67	0	1	6	2,915,335
Dormitory-Unclass.	18	0	0	2	307,117
Mobile Home (1 or 2 family units)	1,238	7	42	133	40,079,294

Type of Residence	Fires	%	Deaths	Injuries	Property Losses \$
Travel Trailer	348	2	3	31	3,177,336
Camping Trailer (includes tent trailer)	81	0	0	3	301,981
Motor Home (includes camperized van)	349	2	2	19	5,269,367
Truck with Camper	101	1	1	4	359,636
Tents	25	0	0	2	61,372
Mobile Home, Trailer-Unclass.	23	0	0	0	252,993
Single Cabins	7	0	1	1	108,093
Camps/Retreats-Unclass.	2	0	0	0	21,250
Childrens' Playhouse	38	0	0	1	41,772
Residential Miscellaneous-Unclass.	15	0	0	0	312,389
Total	18,082	100	233	2,523	637,185,364

2.4 Fire Losses in Special Property/Transportation Equipment

Table 7. Fire Losses in Special Property/Transportation Eqpt., Alberta - 1994 - 2003

Type of Property	Fires	%	Deaths	Injuries	Property Losses \$
Outdoor Property	10,158	32	7	175	7,133,070
Special Connecting Thoroughfares	33	0	0	2	2,156,202
Under Construction or Demolition- Vacant	1,084	3	3	72	52,828,551
Watercraft	116	0	0	1	685,876
Rail Transport Vehicle & Equipment	66	0	0	4	2,428,918
Ground Transport Vehicles	16,977	54	58	240	101,497,496
Aircraft	15	0	0	1	815,811
Special Vehicles	2,820	9	5	58	101,348,672
Marine Docking Facility	1	0	0	0	200
Total	31,270	100	73	553	268,894,796

Table 8. Fire Losses in Ground Transport Vehicles by Type of Vehicle, Alberta - 1994 - 2003

Type of Vehicle	Fires	%	Deaths	Injuries	Property Losses \$
Automobile (Incl. cars/light trucks/vans/single body units)	8,256	49	27	86	24,897,938
Cars	833	5	3	7	3,644,637
Trucks (incl. light trucks/van/single body units)	853	5	3	6	6,342,637
Bus, Trackless Trolley	92	1	3	9	2,063,783
Compressed or LP Gas Tank Truck	22	0	0	1	1,019,897
Flammable Liquid, Chemical Tank Truck	73	0	1	19	4,316,708
General Truck (incl. mail truck, trailer truck, tow truck)	5,963	35	17	94	40,714,453
Motorcycle	77	0	0	0	238,510
Vehicle & Non-Motorized Hauling Vehicle	163	1	0	4	2,382,922
Tractor Trailer	415	2	4	11	14,045,897
Ground Transport Vehicle-Unclass.	230	1	0	3	1,830,114
Total	16,977	100	58	240	101,497,496

Table 9. Fire Losses in Buildings Under-construction/Demolition/Vacant, Alberta - 1994 - 2003

Type of Building	Fires	%	Deaths	Injuries	Property Losses \$
Buildings Under Construction	295	27	0	32	36,966,087
Buildings Under Demolition	20	2	0	5	8,525
Construction, Other Than Buildings	23	2	0	1	303,513
Vacant Property, Property Without Contents	433	40	1	22	7,371,151
Unoccupied Property (unoccupied over 30 days)	78	7	0	3	2,239,674
Contractor's Shed	148	14	1	4	2,720,066
Building Under Major Renovation	76	7	1	4	3,129,279
Under Construction or Demolition-Vacant-Unclass.	11	1	0	1	90,256
Total	1,084	100	3	72	52,828,551

2.4 Fire Losses in Alberta Homes

Table 10. Fire Losses in Alberta Homes - 1994 - 2003

Type of Home	Fires	%	Deaths	Injuries	Property Losses \$
One/Two Family Dwellings	11,174	68	139	1,349	414,256,141
Apartments, Tenements, Flats	4,080	25	38	882	150,714,679
Mobile Homes	1,238	8	42	133	40,079,294
Total	16,492	100	219	2,364	605,050,114

Table 11. Major Known Causes of Home Fires, Alberta - 1994 - 2003

Fire Causes	Fires	% Fires	Deaths	Injuries	Property Loss \$
Other Cooking	2142	13	24	268	37,432,308
Smoking	1935	12	72	403	62,044,801
Other Causes/Unknown	1933	12	43	212	129,552,568
Overheated Cooking Oil Fire	1772	11	4	381	23,165,328
Heating Eqpt. Related	1755	11	18	218	63,205,643
Arson/Set Fire	1632	10	17	178	53,338,939
Electrical Distrib. Eqpt.	1043	6	7	73	55,507,943
Child Fireplay	858	5	10	246	26,303,551
Candle (accident)	787	5	9	182	21,601,202
Exposure Fire	772	5	0	3	73,819,544
Clothes Dryer	539	3	1	15	6,851,003
Appliance/Equipment Related	511	3	1	43	15,347,074
Light/Fluorescent Bulb	399	2	4	49	13,360,560
Flammable/Comb. Liquid Ignition	188	1	2	60	5,502,750
Welding/Torch Too Close	138	1	0	15	14,134,442
Flammable Gas Ignition	54	0	6	18	3,131,151

Fire Causes	Fires	% Fires	Deaths	Injuries	Property Loss \$
Inadequate Control of Open Fire	34	0	1	0	751,307
Total	16492	100	219	2364	605,050,114

Home Fires by Smoke Alarm Operation in Alberta: 1999 – 2003

Table 1

COMMUNITY TYPE = URBAN

Smoke Alarm Installation	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% Of \$ Losses
Not Installed	1627	31	11	23	138	18	62,318,502	30
Installed	3639	69	36	77	616	82	146,947,272	70
Total	5266	100	47	100	754	100	209,265,774	100

Note:

Smoke alarm status and operation are analyzed for the five year period 1999 – 2003, for three community groupings: Urban; First Nations & Metis ; Rural.

Tables numbered 1: Provide smoke alarm installation status in various community groupings

Tables numbered 2: Provide activation status of installed smoke alarms

Tables numbered 3: Show whether activated alarms assisted occupants or not

Tables numbered 4: Show why activated alarms did not assist occupants

Tables numbered 5: Show the reasons why alarms did not activate

Home Fires by Smoke Alarm Operation in Alberta: 1999 - 2003

Table 1

COMMUNITY TYPE = RURAL

Smoke Alarm Installation	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% Of \$ Losses
Not Installed	1582	60	17	37	81	38	83,946,285	52
Installed	1074	40	29	63	134	62	76,749,468	48
Total	2656	100	46	100	215	100	160,695,753	100

Home Fires by Smoke Alarm Operation in Alberta: 1999 - 2003

Table 1

COMMUNITY TYPE = FIRST NATIONS & METIS

Smoke Alarm Installation	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% Of \$ Losses
Not Installed	207	62	12	57	21	58	9,499,957	62
Installed	128	38	9	43	15	42	5,905,247	38
Total	335	100	21	100	36	100	15,405,204	100

Table2. Activation of Smoke Alarms

COMMUNITY TYPE = URBAN

Activation of Smoke Alarms	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% of \$ Losses
Activated	1420	39	15	42	258	42	45,123,212	31
Not Activated	1205	33	5	14	184	30	19,729,485	13
Activation - unknown	1014	28	16	44	174	28	82,094,575	56
Total	3639	100	36	100	616	100	146,947,272	100

Table2. Activation of Smoke Alarms

COMMUNITY TYPE = RURAL

Activation of Smoke Alarms	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% of \$ Losses
Activated	273	25	7	24	53	40	21,075,628	27
Not Activated	168	16	6	21	32	24	9,614,095	13
Activation - unknown	633	59	16	55	49	37	46,059,745	60
Total	1074	100	29	100	134	100	76,749,468	100

Table2. Activation of Smoke Alarms

COMMUNITY TYPE = FIRST NATIONS & METIS

Activation of Smoke Alarms	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% of \$ Losses
Activated	9	7	0	0	0	0	292,946	5
Not Activated	20	16	2	22	1	7	591,417	10
Activation - unknown	99	77	7	78	14	93	5,020,884	85
Total	128	100	9	100	15	100	5,905,247	100

Table3. Alarm Assistance to Occupants

COMMUNITY TYPE = URBAN

Alarm Assistance to Occupants	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% Of \$ Losses
Occupant evacuation unknown	90	6	1	7	15	6	2,393,404	5
Not applicable/no occupants	32	2	0	0	1	0	1,361,411	3
Alarm assisted occupants to evacuate	997	70	10	67	194	75	35,080,524	78
Alarm did not assist occupants to evacuate	301	21	4	27	48	19	6,287,873	14
Total	1420	100	15	100	258	100	45,123,212	100

Table3. Alarm Assistance to Occupants

COMMUNITY TYPE = RURAL

Alarm Assistance to Occupants	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% Of \$ Losses
Occupant evacuation unknown	23	8	0	0	2	4	1,607,025	8
Not applicable/no occupants	17	6	0	0	0	0	1,631,237	8
Alarm assisted occupants to evacuate	171	63	4	57	45	85	12,787,252	61
Alarm did not assist occupants to evacuate	62	23	3	43	6	11	5,050,114	24
Total	273	100	7	100	53	100	21,075,628	100

Table3. Alarm Assistance to Occupants

COMMUNITY TYPE = FIRST NATIONS & METIS

Alarm Assistance to Occupants	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% Of \$ Losses
Not applicable/no occupants	3	33	0	.	0	.	157,000	54
Alarm assisted occupants to evacuate	5	56	0	.	0	.	131,145	45
Alarm did not assist occupants to evacuate	1	11	0	.	0	.	4,801	2
Total	9	100	0	.	0	.	292,946	100

Table4. Reasons - Alarms Did Not Assist

COMMUNITY TYPE = URBAN

Reasons - Alarms Did Not Assist	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% Of \$ Losses
Alarm inaudible	9	3	2	50	3	6	400,543	6
Physical/mental challenge	5	2	2	50	2	4	144,118	2
Unable to evacuate-age related	7	2	0	0	4	8	31,825	1
Unnecessary to evacuate	164	54	0	0	14	29	1,661,158	26
Under the influence of drugs/alcohol	15	5	0	0	4	8	110,985	2
Other	96	32	0	0	20	42	3,823,044	61
Unsuitable location	5	2	0	0	1	2	116,200	2
Total	301	100	4	100	48	100	6,287,873	100

Table4. Reasons - Alarms Did Not Assist

COMMUNITY TYPE = RURAL

Reasons - Alarms Did Not Assist	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% Of \$ Losses
Physical/mental challenge	2	3	0	0	0	0	112,308	2
Unnecessary to evacuate	21	34	0	0	0	0	1,066,346	21
Under the influence of drugs/alcohol	5	8	1	33	1	17	366,152	7
Alarm inaudible	1	2	0	0	0	0	7,046	0
Unable to evacuate-age related	3	5	2	67	0	0	558,633	11
Unsuitable location	2	3	0	0	0	0	217,110	4
Other	28	45	0	0	5	83	2,722,519	54
Total	62	100	3	100	6	100	5,050,114	100

Table4. Reasons - Alarms Did Not Assist

COMMUNITY TYPE = FIRST NATIONS & METIS

Reasons - Alarms Did Not Assist	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% Of \$ Losses
Other	1	100	0	.	0	.	4,801	100
Total	1	100	0	.	0	.	4,801	100

Table5. Reasons - Alarms Not Activated

COMMUNITY TYPE = URBAN

Reasons - Alarms Not Activated	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% Of \$ Losses
Unsuitable location	21	2	0	0	4	2	315,050	2
Dead battery	74	6	1	20	13	7	1,753,432	9
No battery	227	19	0	0	68	37	4,523,383	23
AC not connected/disabled	109	9	1	20	13	7	2,034,303	10
Mechanical failure	47	4	1	20	13	7	1,045,662	5
Not enough smoke	516	43	0	0	28	15	5,612,340	28
Unknown	98	8	1	20	25	14	2,915,606	15
Other	113	9	1	20	20	11	1,529,709	8
Total	1205	100	5	100	184	100	19,729,485	100

Table5. Reasons - Alarms Not Activated
COMMUNITY TYPE = RURAL

Reasons - Alarms Not Activated	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% Of \$ Losses
Unsuitable location	6	4	0	0	1	3	82,000	1
Dead battery	21	13	3	50	2	6	690,347	7
No battery	43	26	2	33	12	38	1,823,686	19
AC not connected/disabled	9	5	0	0	0	0	135,690	1
Mechanical failure	6	4	0	0	0	0	148,522	2
Not enough smoke	48	29	0	0	7	22	2,766,783	29
Unknown	24	14	1	17	8	25	2,466,687	26
Other	11	7	0	0	2	6	1,500,380	16
Total	168	100	6	100	32	100	9,614,095	100

Table5. Reasons - Alarms Not Activated

COMMUNITY TYPE = FIRST NATIONS & METIS

Reasons - Alarms Not Activated	Fires	% Of Fires	Deaths	% Of Deaths	Injuries	% Of Injuries	\$ Losses	% Of \$ Losses
No battery	1	5	0	0	0	0	29,000	5
Mechanical failure	1	5	0	0	0	0	20,000	3
Not enough smoke	5	25	0	0	1	100	130,500	22
AC not connected/disabled	9	45	2	100	0	0	293,917	50
Unknown	1	5	0	0	0	0	3,000	1
Other	3	15	0	0	0	0	115,000	19
Total	20	100	2	100	1	100	591,417	100