

Fire Risk Assessment Document #1

List of Topics:

Description: The province of Alberta

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Alberta, a western Canadian province, occupies an area of 661,190 km² (260,000 mi²). It is bounded to the south by the United States boundary line, 49° north. Eastwards at 110° west it borders the province of Saskatchewan. At 60° north it is separated from the Northwest Territories. To the west, its border with British Columbia follows the line of peaks of the Rocky Mountains range along the Continental Divide.

Alberta accounts for ~10% of the Canadian population. Alberta has the fastest growing population in Canada, 2.5 times the Canadian average. The 2005 population is estimated at 3.3 million; by 2015 this should be 3.8 million. Most of this growth is the result of three factors: a rapidly growing Aboriginal population, migration from other provinces, and immigration. The population density is about 5 persons to the square kilometre. The population is about 19 percent rural and 81 percent urban (note: This breakdown by urban and rural is based on a Statistics Canada criterion, which states that rural population refers to persons living outside centres with a population of 1,000 AND outside areas with 400 persons per sq.km.)

Alberta's capital is the city of Edmonton. Its most populous city and metropolitan area, Calgary, is Alberta's economic hub and is located in the southern region of the province. Other major cities and towns include Banff, Camrose, Fort McMurray, Grande Prairie, Jasper, Lethbridge, Lloydminster, Medicine Hat, and Red Deer (Table 1).

Table 1. Major municipalities of Alberta

Census Metropolitan Areas:	2005	2001	1996
Calgary CMA	1,037,100	976,800	821,628
Edmonton CMA	1,001,500	961,500	862,597
Cities (10 Largest):			
Calgary	956,078	878,866	768,082
Edmonton	712,391	666,104	616,306
Red Deer	79,082	67,707	60,080
Lethbridge	77,202	67,374	63,053
St. Albert	56,318	53,081	46,888
Medicine Hat	56,048	51,249	46,783
Grande Prairie	44,631	36,983	31,353
Airdrie	27,069	20,382	15,946
Spruce Grove	18,405	15,983	14,271
Camrose	15,850	14,854	13,728
Districts (3 Largest):			
Strathcona County	80,232	71,986	64,176
Regional Municipality of Wood Buffalo	73,176	41,466	35,213
Municipality of Rocky View	30,688*	28,441	23,326

Sources: All 2005 figures are based on official 2005 census data from municipalities. Where no 2005 data is available, () indicates the most recent official data from either the municipality or the 2001 Statistics Canada federal census. All data for 2001 and 1996 is from the respective federal census. CMA data is from the most recent Statistics Canada estimate.*

Demographic trends

Alberta has enjoyed a relatively high rate of growth in recent years, due in large part to its burgeoning economy. Between 2003 and 2004, the province saw high birthrates (on par with some larger provinces such as British Columbia), relatively high immigration, and a high rate of interprovincial migration when compared to other provinces (Table 2). As of 2004, the population of the province was 3,183,312 (*Albertans*). 81% of this population lives in urban areas and 19% is rural. The Calgary-Edmonton Corridor is the most urbanized area in the province and one of the densest in Canada. Many of Alberta's cities and towns have also experienced very high rates of growth in recent history.

Table 2. Components of population growth, in Canada and Alberta

July 1,2003-June 30,2004	Canada	Alberta.
Births	330,803	39,042
Deaths	233,087	19,420
Immigration	239,116	17,071
Emigration	39,227	4,713
Net temporary emigration	25,565	2,935
Returning emigrants	18,084	2,764
Net non-permanent residents	-4,274	543
Net inter-provincial migration	...	10,902

Source: Statistics Canada, CANSIM, table (for fee) [051-0004](#)

Migration

The 2001 census indicate, Alberta replaced British Columbia as the destination of choice. By far, the largest net gain from migration was the 119,400 that occurred in the booming, oil-rich province of Alberta. It resulted from the 242,200 people who moved into Alberta and of the 122,800 people moving out of this province.

Much of the massive flow of migrants into Alberta was composed of young people. A total of 87,700 incoming migrants were young people aged between 15 and 29. These young people represented 36.2% of the incoming migrants to Alberta. In contrast, this age group represented 29.1% of all the people who moved out of Alberta. In addition, 36,200 children aged five to 14 moved into Alberta between 1996 and 2001. Almost 89,700 people moved east to Alberta from neighbouring British Columbia, the largest single flow between any two provinces recorded by the 2001 Census. Alberta's net gain through internal migration represented 4.7% of its population.

Alberta was among the provinces with the highest net gains for seniors gaining 3,700 more seniors than it lost between 1996 and 2001,

Source: <http://www12.statcan.ca/english/census01/Products/Analytic/companion/mob/canada.cfm>

Immigration to Canada by Province of Destination

Canada welcomed a total of 221,318 immigrants in 2003. This compares to 228,616 newcomers in 2002, and 250,423 in 2001.

In 2003, Alberta welcomed 15,738 landed immigrants, or 7.1% of immigration to Canada. This compares to 14,682 (6.4%) in 2002, and 16,386 (6.5%) in 2001.

Ontario was the most popular destination for immigrants in 2003 (54.2%), followed by Quebec (17.8%), British Columbia (15.9%), Alberta (7.1%) and Manitoba (2.9%).

Immigration to Alberta by Immigrant Class

Under the Government of Canada's Immigration and Refugee Protection Act and Regulations, people may apply to immigrate to Canada as a member of one of three immigrant classes: Independent or Economic Class, Family Class, or Refugee Class.

Independent Class Immigrants

In 2003, 7,793 (49.5%) of immigrants to Alberta entered as part of the Independent Class. These immigrants are selected for their potential economic contribution to Canada, and are assessed on criteria including education, work experience, and knowledge of English. The Independent Class includes skilled workers, business immigrants, live-in caregivers, and provincial nominees.

Family Class Immigrants

In 2003, 5,886 family class immigrants arrived in Alberta, accounting for 37.4% of all newcomers to Alberta. Family class immigrants are close family members, including spouses, common-law partners, dependent children, parents or grandparents, who are sponsored by a Canadian citizen or permanent resident.

Refugee Class Immigrants

Each year, Canada accepts a certain number of refugees in keeping with its humanitarian tradition and international commitments. In 2003, 1,959 (12.5%) of Alberta's immigrants were refugees requiring protection.

Immigration to Alberta by Top Ten Source Countries

In 2003, 62.5% of newcomers to Alberta originated from ten source countries: China, the Philippines, India, Pakistan, the United Kingdom, Korea, the United States, Afghanistan, Colombia, and the Democratic Republic of Sudan.

Colombia and the Democratic Republic of Sudan replaced Iran and Vietnam among the top ten source countries of newcomers to Alberta in 2003.

Immigration to Alberta by City of Destination

Almost 90% of Alberta's new immigrants in 2003 were destined for one of five cities: Calgary, Edmonton, Red Deer, Lethbridge and Medicine Hat.

Most newcomers went to Calgary (9,064 / 57.6%) or Edmonton (4,540 / 28.8%).

Immigration to Alberta by Knowledge of English

Most newcomers to Alberta in 2003 arrived with English language skills (51.5%).

Immigration to Alberta by Age

In 2003, most newcomers to Alberta were between 20 and 44 years of age (58.8%). Newcomers aged 45 to 64 years of age comprised 11.1% all newcomers in 2003 while those aged 5-19 years of age accounted for 20.9% of all newcomers. 3.0% of all newcomers to Alberta in 2003 were 65 years of age or older.

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Immigration to Alberta by Native Language

The most common native language of newcomers to Alberta in 2003 was Mandarin (11.9%) (Table 3).

Table 3. Immigration to Alberta by Native Language, 2003

Language	<i>Number</i>	<i>%</i>
Mandarin	1,878	11.9
English	1,765	11.2
Tagalog	1,709	10.9
Punjabi	1,341	8.5
Spanish	885	5.6
Other	8,160	51.9
Total	15,738	100.0

Immigration to Alberta by Age and Knowledge of English

In 2001, 2002 and 2003, more than half of newcomers to Alberta between 25 and 49 years of age had English language skills (65.7% in 2003).

Immigration to Alberta by Knowledge of French

3.1 % of all newcomers to Alberta in 2003 had French language skills. Of these, 0.6% reported being French-speaking while 2.5% reported being bilingual (French & English).

Immigration to Alberta by Educational Attainment

Most newcomers (19 years of age or older) to Alberta in 2003 had high levels of education: 43.7% held a university degree (e.g., Bachelor's, Master's, or Doctorate), 4.8% held a trade certificate, and 11.3% held a non-university diploma.

More than 56% of newcomers to Alberta in 2003 possessed a university degree (i.e., Bachelor's, Master's, Doctorate), trade certificate, or non-university diploma.

Source: <http://www.advancededucation.gov.ab.ca/other/immigration.asp#ProvDest>

Ethnicity

Alberta also has a large ethnic population. Both the Chinese and East Indian communities are significant. According to Statistics Canada, Alberta is home to the second highest proportion (two percent) of Francophones in western Canada (after Manitoba). Many of Alberta's French-speaking residents live in the central and northwestern regions of the province. As reported in the 2001 census, the Chinese represented nearly four percent of Alberta's population and East Indians represented better than two percent. Both Edmonton and Calgary have Chinatowns and Calgary's is Canada's third largest. Aboriginal Albertans make up approximately three percent of the population.

The major contributors to Alberta's ethnic diversity have been the European nations. Forty-four percent of Albertans are of British descent, and there are also large numbers of Germans, Ukrainians, and Scandinavians.

Racially and ethnically, the province is predominately Caucasian. 88.8% of the population is either white or Aboriginal (Aboriginals represent a fairly small proportion of this percentage, however). This number is significantly smaller in many of the cities, particularly Calgary and Edmonton which are home to a much larger number of visible minorities.

Visible Minorities: 3.3% Chinese ; 2.3% Asian ;1.1% Black ;1.1% Filipino.

Implications for Fire Prevention: The above demographic trends may have the following implications on fire prevention and safety:

- New immigrants may not be familiar with hazards and the corresponding safety procedures. The lack of English language ability can be a further barrier to understanding fire safety.
- The Aboriginal population is growing and consists largely of a younger age group, who can be reached with the safety messages and education programs. However, low literacy levels, poverty and other socio-economic factors especially on reserves and settlements can be barriers to fire prevention and safety education of adults.

Tourism

Tourism is also important to Albertans. A million visitors come to Alberta each year just for Calgary's world-famous Stampede and for Edmonton's Klondike Days. Edmonton was the gateway to the only all-Canadian route to the Yukon gold fields, and the only route which did not require gold-seekers to travel the exhausting and dangerous Chilkoot Pass.

Visitors throng to Calgary for ten days every July for a taste of "Stampede Fever". As a celebration of Canada's own Wild West and the cattle ranching industry, the Stampede welcomes around 1.2 million people each year. Only an hour's drive from the Rocky Mountains, Calgary also makes a visit to tourist attractions like Banff National Park something which can easily be done in a day. Calgary and Banff each host nearly 5 million tourists yearly.

Alberta is an important destination for tourists who love to ski and hike; Alberta boasts several world-class ski resorts. Hunters and fishermen from around the world are able to take home impressive trophies and tall tales from their experiences in Alberta's wilderness.

Industry

The primary industries in Alberta are energy, lumber, and farming and ranching.

Oil/Gas: Alberta is the largest producer of conventional crude oil, synthetic crude, natural gas and gas products in the country. Two of the largest producers of petrochemicals in North America are located in central and north central Alberta. In both Red Deer and Edmonton, world class polyethylene and vinyl manufacturers produce products shipped all over the world, and Edmonton's oil refineries provide the raw materials for a large petrochemical industry to the east of Edmonton.

The Athabasca Oil Sands (previously known as the Athabasca Tar Sands) have estimated oil reserves in excess of that of the rest of the world, estimated to be 1.6 trillion barrels (254 km³). With the advancement of extraction methods, bitumen and economical synthetic crude are produced at costs nearing that of conventional crude. This technology is Alberta grown and developed. Many companies employ both conventional strip mining and non-conventional methods to extract the bitumen from the Athabasca deposit. With current technology, only 315 billion barrels (50 km³) are recoverable. Fort McMurray, one of Canada's youngest and liveliest cities, has grown up entirely because of the large multinational corporations which have taken on the task of oil production.

Another factor determining the viability of oil extraction from the Tar Sands is the price of oil. In 2005, record oil prices have made it more than profitable to extract this oil, which in the past would give little profit or even a loss.

While Edmonton is considered the pipeline junction, manufacturing, chemical processing, research and refining centre of the province, Calgary is known for its senior and junior oil company head offices.

The production of natural gas liquids (ethane, propane, and butanes) totaled 172.8 million barrels (27,000,000 m³), valued at \$2.27 billion. Alberta also provides 13% of all the natural gas used in the United States.

With concerted effort and support from the provincial government, several high-tech industries have found their birth in Alberta, notably the invention and perfection of liquid

crystal display systems. With a growing economy, Alberta has several financial institutions dealing with several civil and private funds.

Lumber: The vast northern forest reserves of softwood allow Alberta to produce large quantities of lumber and plywood, and several northern Alberta plants supply North America and the Pacific Rim nations with bleached wood pulp and newsprint. In 1999, lumber products from Alberta were valued at \$4.1 billion of which 72% were exported around the world. Since forests cover approximately 59% of the province's land area, the government allows about 23,300,000 cubic metres to be harvested annually from the forests on public lands.

Agriculture: has a significant position in the province's economy. Over 5 million cattle are residents of the province at one time or another, and Alberta beef has a healthy worldwide market. Nearly one half of all Canadian beef is produced in Alberta. In the past, cattle, horses, and sheep were reared in the southern prairie region on ranches or smaller holdings. Currently Alberta produces cattle valued at over \$3.3 billion, as well as other livestock in lesser quantities. In this region irrigation is widely used. Wheat, accounting for almost half of the \$2 billion agricultural economy, is supplemented by canola, barley, rye, sugar beets, and other mixed farming.

Wheat and canola are primary farm crops, with Alberta leading the provinces in spring wheat production, with other grains also prominent. Much of the farming is dryland farming, often with fallow seasons interspersed with cultivation. Continuous cropping (in which there is no fallow season) is gradually becoming a more common mode of production because of increased profits and a reduction of soil erosion. Across the province, the once common grain elevator is slowly being lost as rail lines are decreased and farmers now truck the grain to central points.

Alberta is the leading beekeeping province of Canada, with some beekeepers wintering hives indoors in specially designed barns in southern Alberta, then migrating north during the summer into the Peace River valley where the season is short but the working days are long for honeybees to produce honey from clover and fireweed. Hybrid canola also requires bee pollination, and some beekeepers service this need.

Source: <http://en.wikipedia.org/wiki/Alberta#Geography>

Implications for Fire Prevention: The above industry characteristics may have the following implications on fire prevention and safety:

- In 2001, approximately 166,000 farmers and their household members lived on farm property occupying 51 million acres. Fire statistics for farms indicate most fire fatalities and injuries occur in homes. However, the frequency of outdoor fires and farm equipment fires rise in early spring and during the harvesting months of late Summer/early Fall. The vastly scattered farm lands, hazardous operations, use of flammable and combustible materials, and longer fire department response times add to the risk of fire in farming communities.
- Fire risk in the industrial sector is dependent on a vast array of factors that is beyond the scope of this paper. Fires in industrial settings can have wide ranging impacts on the local, provincial and national economy.

Education

As with any Canadian province, the Alberta government is the highest authority in education, creating and regulating the school boards, public colleges, universities, and other education institutions.

K-12

The vast majority of Alberta's schools are run by publicly funded school boards (each with its own district of authority). The largest are English language Public school boards. Alberta also has English Separate Catholic boards throughout the province, which serve a substantial minority of students. There is one protestant school board in part of the province. Where numbers warrant, there are francophone school boards (Public and Separate Catholic). All five of these types of boards are fully publicly funded (without tuition) by local property taxes and provincial grants given on an equal per student basis by the province (with some adjustments). The different types of school boards are a necessity under the Canadian constitution, which guarantees the francophones and Catholic communities both the right to their own schools, and the right to administer them.

Originally in Alberta, school boards had the power to levy property taxes within their respective districts. However, this meant districts with a low tax base were underfunded, so the province moved to a system that pools the education property tax, and distributes it based on student population and need.

Post-secondary

The largest two universities in Alberta are the University of Calgary and Edmonton's University of Alberta. There is also Athabasca University, which focusses on distance learning, and the University of Lethbridge. There are 15 colleges that receive direct public funding, along with two technical institutes[1]. Students may also receive government loans and grants while attending selected private institutions.

From a human capital perspective, higher education is one of the more important factors associated with success in the labour market and higher incomes. As the labour market increasingly demands high-skilled workers and the general population becomes better educated, those individuals with relatively low levels of education are finding the labour market less and less accommodating. Therefore, this trend has implications for their ability to stay out of poverty.

Top five provinces and territories with university-educated populations aged 25 to 64 are Ontario 24.7% ; British Columbia 23.9 ; Yukon 23.4 ; Quebec 21.6 ; Alberta 21.4 .

On the basis of education levels: elementary, secondary, university, and all education levels, the approximate values for Alberta are as follows: elementary 55%, secondary 65%, university 75%, and all education levels, 64%.

Source:

http://atlas.gc.ca/site/english/maps/health/nonmedicaldeterminantsofhealth/education/education_figure5.gif/image_longdesc_view

Education levels among the working-age population (those between the ages of 25 and 64 years) improved dramatically in every province and territory during the past 10 years, according to the 2001 Census. Increases in the number of people aged 25 to 64, who were either trade school, college or university

Source:

<http://www12.statcan.ca/english/census01/Products/Analytic/companion/educ/provs.cfm>

Implications for Fire Prevention: Education has a significant impact on the safety of people. The relationship between risk exposure and low levels of education, literacy, employment and poverty has been the subject of many studies and is beyond the scope of this paper.

Safety Education: The teaching of safety and injury prevention are specified in the Alberta Health and Life Skills curriculum. Eight hours per year are allocated to the teaching of safety to Kindergarten to Grade 8 in this curriculum. Risk Watch a comprehensive Injury Prevention Program for school children is authorized by Alberta Education for PreK/K and Grades 5/6 only. The philosophy of Alberta Education is to allow teachers the option of choosing from a range of teaching resource to teach safety rather than be limited to one or a few.

Literacy: People with low literacy skills lack the ability to read materials as simple as a food or prescription label. Comprehending the directions on a space heater, the warning label on a gasoline container, or perhaps a fire safety brochure can be impossible, with potentially disastrous consequences. Source: *Ready, Set, Read* by Meri-K Appy(2004): http://firechief.com/mag/firefighting_ready_set_read/

Fire Risk in Dormitories: Most dormitory fires occur while schools are in session, between September and May (Figure 2). Fire incidence declines significantly during breaks, evidenced by the low percentage of fires occurring during the winter recess (December and January) and the spring break (May).

Source: Dormitory Fires. U.S. Fire Administration
TOPICAL FIRE RESEARCH SERIES
Volume 1, Issue 14 March 2001 (Rev. December 2001)
<http://www.usfa.fema.gov/downloads/pdf/tfrs/v1i14-508.pdf>

POVERTY IN ALBERTA:

Source: Edmonton Social Planning Council
Child and family poverty in Alberta 2004.

<http://www.edmspc.com/Uploads%5Cchild%20poverty.pdf>

FACT SHEET November 2004

13.3% or 98,000 children in Alberta live in poverty The majority (57.9%) of children living in poverty in Alberta live in working families The majority (68%) of children living in poverty in Alberta live in two-parent families The poverty rates for aboriginal, visible minority and immigrant children in Alberta ranges from 26%-41%, significantly higher than the 13.3% average.

There are 38,000 preschool age children living in poverty in Alberta.

POVERTY:

While there is no commonly agreed upon definition of poverty, the U.N. *Human Development Report* for 1997 describes poverty in this way: "Poverty can involve not only the lack of opportunity of the necessities of material well-being, but the denial of opportunities for living a tolerable life. Life can be prematurely shortened. It can be made difficult, painful and hazardous. It can be deprived of knowledge and communication. And it can be robbed of dignity, confidence and self-respect— as well as the respect of others." In this study, we used a common measure of "poverty," the percent of Albertans living below Statistics Canada's Low Income Cut-off (LICO).

In 1961, 11.3% of Albertans were living below the LICO line. The rate of poverty rose to 18.0% of the population in 1984 during the height of Alberta's oil and gas boom. The collapse of oil prices in 1985- 1986 saw poverty moderate again at 15.2%. In 1992, poverty reached an all-time high of 19.4% of Albertans but fell back to 15.5% in the latter part of the 1990s. Another sign of poverty is the presence of food banks. According to the Alberta Food Bank Association, roughly 587,700 Albertans are served by more than 74 food banks across the province.

Percentage of Albertans (all persons) living below LICO

Source: National Council on Welfare,

1961 to 1979 figures are estimated based on trends from 1980 to 1999.

Noteworthy:

A Definition of Poverty

Official examinations of poverty in Canada tend to use the Low Income Cutoffs (LICO) as calculated by Statistics Canada (**NAPO, 1998**). The LICO "cutoffs" are based on Canadian household expenditure surveys (conducted every two years) which have determined that the average Canadian household spends 34.7% of its income on the basic necessities of food, shelter and clothing. Under the LICO definition of poverty, a household which is poor is one that must spend 54.7% (an additional 20%) or more of the average household's income on these basics (**Ross, Shillington & Lochhead, 1994**).

While the percentage of household income spent on basic needs is a useful measure of relative deprivation, this measure must be taken in context. It cannot be taken to mean that, for example, a four-person household which has an income of \$100,000 and which voluntarily spends 60% of its income on food, shelter and clothing is living in poverty. In order to provide a useful measure, a minimum dollar values is established by calculating 54.7% of the average household income, in each of various household sizes, and for each year, taking inflation into account (See Table below).

Household Low Income Cutoffs in Canadian Cities with 500,000+ Persons					
	Number of Household Members				
	1	2	3	4	5
1986	11,847	16,059	20,412	23,501	25,677
1991	14,951	20,266	25,761	29,661	32,406
1996	16,061	21,769	27,672	31,862	34,811
1998	16,472	22,327	28,380	32,678	35,702
Figures Based on 1986 Base Year					

Sources:

Statistics Canada. 1995b, 1998g

Canadian Council on Social Development. 1994 Low income cutoffs, 1995 Low income cutoffs, 1996 Low Income cutoffs, 1997 Low-income cutoffs

National Council of Welfare, 1998.

Incidence of Poverty in Alberta and Canada									
	1980	1982	1984	1986	1988	1990	1992	1994	1996
Alberta	12.5	11.8	18.0	15.2	15.8	15.4	19.4	15.9	15.8
Canada	15.3	16.4	18.1	16.0	14.8	14.6	16.1	16.6	17.6

Sources:

National Council on Welfare, 1998

Certain groups of people tend to be at greater risk of poverty than others. In particular, children and unattached persons including seniors and youth have been found to experience an increased risk of poverty. The number of children living in poverty is of particular concern. The Canadian Council on Social Development reports that 17.8% of Canadian children under the age of 18 were living in poverty in 1995 (CCSD, 1998a). The social, physical, educational, and psychological impacts of poverty on children are well documented. Impacts of poverty include poor health, poor nutrition, poor ability to concentrate, interrupted psychological and physical development, and stigmatization. In Calgary, Statistics Canada (1999a) has calculated that 22.6% (39,705) of children ages 0-14 were living in poverty in 1995. Statistics Canada (1999a) also reports that, nationally, 55% of lone parent families with children under

the age of 18 were living in poverty in 1995. In Alberta, the rate was 51%, while in Calgary, the rate was 49% for the same year.

Historically, seniors have had a higher incidence of poverty than any other age group, due to their reliance on fixed incomes. In 1995, roughly a third of Calgary seniors had income so low that they qualified for the Guaranteed Income Supplement (GIS). A recently released Statistics Canada study reports that 40% of women over 75 who are living outside of an institution are living below the low income cutoff (Lipovenko, Dorothy, 1996). Despite the high risk of poverty, however, conditions for seniors appear to be improving. The indexing of federal seniors' transfer payments to inflation and the changing economic role of women are now reducing poverty rates among older persons. By 1995, the incidence of poverty among seniors and children was very similar.

Implications for Fire Prevention: Poverty has a significant impact on the safety of people (See: "*How being poor affects fire risk*," by Rita Fahy and Alison L. Norton, Fire Journal, NFPA, Jan./Feb. 1989 issue).

ALCOHOL, ILLICIT DRUGS, MEDICATIONS, TOBACCO USE IN ALBERTA

**Source: ALBERTA PROFILE
Social and Health Indicators of Addiction
Nov 2003 AADAC sixth edition**

1-ALCOHOL

Alcohol is used by the majority of Albertans, and is responsible for more health, safety and legal consequences than other drugs noted in this report. At the same time, many Albertans benefit from the manufacture, sale and use of alcohol. Alcohol sales also contribute to the provincial economy.

Distribution and Revenue

As of March 31, 2002, 863 retail liquor outlets existed in Alberta. During 2001/02, the Alberta Gaming and Liquor Commission (AGLC) issued 8,008 licenses for on- and off premise alcohol sales. Government revenue from alcohol sales totaled \$492 million in 2001/02.

Prevalence

In 2000/2001, 76.6% of Albertans over the age of 12 were current drinkers (had consumed at last one drink in the previous year). This is similar to Canada's national rate of 76.9%.

- The proportion of heavy drinkers in Alberta is higher than the rest of Canada (22.5% versus 20.1%). Heavy drinking is defined as having consumed five or more drinks on one occasion, 12 or more times in the previous year.
- Alberta males are more likely to drink than Alberta females (81.6% versus 71.6%) and they are much more likely to be heavy drinkers (30.9% versus 12.8%).
- ..Alcohol is also the drug most commonly used by Alberta youth. Among students in grades 7 to 12 surveyed in 2002, 56.3% reported alcohol use in the previous 12 months. The prevalence of alcohol use increases with age; 17.6% of students in Grade 7 reported using alcohol compared to 81.2% in Grade 12.
- Alcohol consumption during pregnancy was reported by 3.9% of women who gave birth in Alberta during 2001.

Consumption

- From 1997/98 to 2001/02, per capita consumption of absolute (pure) alcohol by Albertans (age 15 and over) increased from 8.5 litres to 8.7 litres. Per capita consumption in 2001/02 was equivalent to approximately 500 standard drinks per person, per year. (The Canadian Guidelines on Low-Risk Drinking define a standard drink as one 341-ml (12-oz.) "regular" strength bottle of beer (5% alcohol), one 142-ml (5-oz.) glass of table wine (12% alcohol), one 43-ml (1.5-oz.) serving of spirits (40% alcohol), or one 85-ml (3-oz.) serving of fortified wine such as sherry or port (18% alcohol).

- On average, Albertans drink more than the national average. The national per capita consumption level was 7.7 litres in 2001/02. Only the Yukon had higher per capita Consumption of alcohol at 12.6 litres. Per capita consumption rates are based on the litres of alcohol sold. This measure excludes other sources of alcohol such as beer and wine made at home. In 2001, Albertans (aged 18 and over) produced the equivalent of 1.4 million litres of absolute alcohol at home. When home-production of alcohol is included, alcohol consumption increases by 5%.

Consequences

Alcohol has broad impact across society, affecting personal well-being, individual and family relationships, workplace productivity, and community safety. Alcohol is implicated in health problems, domestic violence, injuries, property damage, criminal behaviours and death.

- Among adult Albertans (15 years and older) surveyed in 2000/01, 10.9% were assessed as having probable alcohol dependence (8.2% were slightly probable and 2.7% were highly probable).
- In 2002, 13% of Alberta students (grades 7 to 12) engaged in hazardous or harmful alcohol use. The prevalence of abuse was greater among males, older students and urban students.
- In 2001, 5% of Alberta drivers involved in injury collisions and 21% involved in fatal collisions had consumed alcohol prior to the accident.
- In 2001, 14,555 impaired driving charges were laid in Alberta, a rate of 475 impaired driving charges per 100,000 population. This was higher than the Canadian rate of 291 and was fifth highest behind the Northwest Territories (1,390), the Yukon (1,332), Saskatchewan (714) and Nunavut (568).
- After remaining relatively constant for five years, the number of license suspensions issued for an impaired driving conviction in Alberta declined 11%, from 7,726 in 2001/02 to 6,894 in 2002/03.
- The provincial Medical Examiner reported 76 alcohol-related deaths in 2000. This includes accidental death, suicide and other deaths where alcohol was a contributing factor.
- During 2002, there were 4,842 incidents of family violence in Alberta where the use of alcohol and/or other drugs was reported. This accounts for 53% of all incidents of family violence.
- During 2001/02, 297 incident reports were prepared concerning liquor-related infractions. These included illegal alcohol sales, service to minors, over-service to intoxicated persons, and after-hours liquor.

- In 2002/03, 28,724 clients were admitted to AADAC treatment services. Of these 32% came for concerns related to alcohol alone and another 24% came for concerns related to alcohol combined with other drugs and/or gambling.

Costs

The cost of alcohol use in Alberta was estimated at \$749 million in 1992; an amount equal to \$285 per Albertan. Productivity losses (\$445 million), health care (\$124 million) and law enforcement (\$111 million) accounted for the majority of total cost.

Attitudes and Opinions

Thirty-eight percent of adult Albertans (aged 18 and over) believe alcohol problems in Alberta are increasing, and 39% perceive alcohol abuse to be a somewhat serious or very serious problem in their community. The majority of Albertans believe that alcohol and drug programs should be increased; 65% favour increased prevention programs and 66% favour increased treatment programs.

2-ILLCIT DRUGS

Illicit or “street” drugs are substances that are manufactured, imported, distributed or held unlawfully. This includes plant-based drugs like cannabis, cocaine and heroin, as well as chemical substances such as LSD, ecstasy and speed (methamphetamine). Although illegal drug use affects a smaller proportion of the Alberta population, its consequences are similar to those of alcohol use in terms of intoxication and adverse consequences.

Prevalence

- The most popular illicit drug in Alberta is cannabis (marijuana, hashish). In 1998, 10% of adults (18 and older) were current users, and 3% said they used cannabis one or more times per week.¹ In 2002, 28% of junior and senior high school students in Alberta had used cannabis in the previous year and 6% showed more than one sign of cannabis dependence.
- The prevalence of other illicit drug use in Alberta is relatively low. Among adults, less than 2% report the use of cocaine/crack, hallucinogens like LSD, or heroin. Among Alberta students, 13.8% reported using one or more illicit drugs (e.g., magic mushrooms, club drugs, uppers, cocaine) in the previous year.
- Among women who gave birth in Alberta during 2001, 1.9% reported using illicit drugs
- during their pregnancy.

Consequences

Drug problems occur at all levels of society throughout the province.

- In 2002, 39.0% of all positive HIV serological tests in Alberta listed injection drug use as
- a reported risk factor.

- In 2000, the Chief Medical Examiner in Alberta investigated 205 deaths that were drug related and 49 that were drug- and alcohol-related. These included suicides resulting from overdose or poisoning, accidental deaths involving the use of drugs and/or alcohol, deaths directly caused by substance use, and deaths where drugs and/or alcohol were contributing factors.
- During 2001 there were 7,211 drug offences in Alberta, including possession, trafficking and importation. Alberta had a lower drug offence rate than the rest of Canada (235 per 100,000 of the population versus 296). Cannabis possession accounted for half (52%) of all drug offences in Alberta.
- Between April 2001 and March 2002, the needle exchange programs in Edmonton, Calgary, Red Deer, Grande Prairie and Lethbridge exchanged 1.5 million needles.
- In 2002/03, 32% of AADAC clients were admitted to treatment for concerns about their drug use and 24% were admitted for concerns about their use of other drugs in combination with alcohol and/or gambling.

Costs

The economic and social costs of illicit drug use in Alberta were estimated at \$135 million in 1992. This was equal to \$51 per person. Most of these costs derive from productivity losses due to death and disability (\$88 million), followed by law-enforcement costs for police services, courts, corrections, customs and excise (\$30 million).

Attitudes and Opinions

More than half (56%) of adult Albertans (aged 18 and over) believe problems associated with drugs are increasing in Alberta and 39% perceive drug abuse to be a somewhat or very serious problem in their community.

3–MEDICATIONS

Medications include prescription and over-the-counter drugs. Most Albertans use medications to contribute to their health and well-being. However, some Albertans experience harmful consequences as a result of inappropriate pharmaceutical drug use.

Distribution and Revenue

There are 801 licensed pharmacies in Alberta.

In 2001/02, more than 8 million prescriptions were claimed under the Alberta Blue Cross Non-Group Plan* resulting in a net compensation for drugs of \$349 million. Total drug expenditures in Alberta were \$1.3 billion in 2000; 76% of these expenditures were for prescribed drugs.

Prevalence

- In 1996/97, less than 10% of Albertans (aged 15 and older) reported using medications such as painkillers (7%), antidepressants (4%), sleeping pills (4%), or tranquilizers (2%).
- For all drug categories aside from opiates (e.g., codeine, morphine) and antidepressants, medication use in Alberta is similar to or below the national average.
- The prevalence of medication use is influenced by a number of key factors including: age and sex, disease patterns in a given population, the availability of new drug products and prescribing practices.
- In 2001/02, seniors (aged 65 and older) accounted for approximately 78% of prescriptions covered by Alberta Blue Cross Non-Group Plan.* The majority of prescriptions were treating ulcers, arthritis, high cholesterol and high blood pressure.

Consequences

Concerns about medication misuse include:

(1) the addictive potential of certain prescription drugs; (2) inappropriate prescribing practices; (3) potential for diverting of medications to the black market through theft or prescription forgery; (4) escalating cost of prescription drugs; and (5) harmful patterns of consumption such as excessive or inappropriate use.

Prescription drug use is associated with considerable morbidity and mortality.

Medications are often used in combination with alcohol or other drugs, and may be used intentionally or unintentionally in lethal amounts resulting in hospitalization or death. An estimated 10% to 30% of elderly hospital patients are admitted because of medication toxicity.

* Coverage is for seniors aged 65, their dependants, recipients of Alberta widow's pension and their dependants, individuals diagnosed as palliative who receive care at home and residents under 65 years not covered by an employee health plan.

Costs

A 1995 study estimated that the inappropriate use of pharmaceuticals costs the Canadian economy \$3.5 to \$4.5 billion annually in direct health care costs (i.e., hospitalization, physician visits and laboratory tests). Adding indirect costs such as lost productivity and premature death increased the estimate to \$7 to \$9 billion annually.

5–TOBACCO

After alcohol, tobacco is the most frequently used drug in Alberta. The number of adults who smoke has steadily decreased over the past 35 years as people have become more aware of the health consequences of smoking.

Distribution and Revenue

There are an estimated 6,000 tobacco retailers in Alberta. These include magazine and tobacco shops, variety and convenience stores, supermarkets and grocery stores, and gas/service stations.

Provincial revenue from tobacco taxation increased to \$618 million in 2002/03 from \$374 million in 2001/02.^{3,4} This increase was due primarily to a tobacco tax increase. The Alberta Government collects \$32 per 200 cigarettes (or \$4 per package) and \$32 per 200 grams of loose tobacco.

Prevalence

- In 2000/01, 27.6% of Albertans (age 12 and over) were current smokers. Prevalence was
 - highest among young adults aged 20 to 24 years (37.8%).
- In 2002, 16.2% of students in grades 7 to 12 were cigarette smokers and 7.8% used chewing tobacco or snuff.
- Of women who gave birth in Alberta in 2001, 23.3% reported having smoked during their pregnancy. This includes those who quit smoking while they were pregnant.
- *Consequences*
 - Lung cancer and heart disease contribute most to tobacco-related mortality. Smoking also leads to emphysema, other respiratory problems, and cancers of the lip, oral cavity and throat.
 - Children's exposure to environmental smoke increases the risk of bronchitis, pneumonia,
 - asthma and sudden infant death syndrome (SIDS).
- It is estimated that 3,400 Albertans die each year of smoking related causes. Premature death due to smoking results in over 35,500 potential years of life lost in Alberta each year.
- Between 1997 and 2001, over 2,310 fires reported in Alberta were related to smokers' materials. These fires resulted in 40 deaths, 284 injuries and over \$46 million in property
 - damage.
- In 2001/02, the AGLC's Investigations Branch conducted 78 tobacco-related Investigations.

Costs

The total cost of tobacco use in Alberta was estimated at \$728 million in 1992, an amount equal to \$277 per person. The primary costs associated with tobacco use are productivity losses (\$508 million) and health care (\$215 million).

Attitudes and Opinions

In North America, since the 1960s, the social acceptability of smoking has declined due to an increased awareness of the negative health consequences. In 2003, the majority of adult Albertans agreed that tobacco is highly addictive (95%), tobacco is a dangerous, cancer causing substance (91%), second-hand smoke poses a real and serious threat (86%) and tobacco has no safe level of use (82%).

Albertans feel that the problems associated with smoking are decreasing in the province; 45% feel the problems with tobacco use have decreased and 54% feel the problems with secondhand smoke have decreased. Despite this, the majority (65%) feel that tobacco reduction strategies to prevent smoking should be increased.

Alberta Youth Experience Survey – Summary Report

Source: <http://parent.aadac.com/content/corporate/research/TAYES-SumReportBook.pdf>

Prevalence of Use

In the fall of 2002, the Alberta Alcohol and Drug Abuse Commission (AADAC) undertook The Alberta Youth Experience Survey 2002 to establish a benchmark of current substance use and gambling activity among Alberta youth. The survey also examined key risk and protective factors correlated with use or participation. The results are summarized in this report.

- Alberta youth exhibit the same general substance use/gambling participation patterns occurring across North America.
- *The Alberta Youth Experience Survey 2002* found alcohol, at 56.3%, to be the most frequently used substance by Alberta adolescents in grades 7-12 at least once over the last 12 months.
- The next most used substances were cannabis (marijuana or hash) at 27.6%, and cigarettes at 16.2%.
- Adolescent alcohol use in Alberta (56.3%) is lower than in Ontario (65.5%) and higher than Nova Scotia (51.7%).
- Youth use of alcohol in Alberta increases by grade (17.6% in grade 7 to 81.2% in grade 12).
- 13% of youth who drank reported signs of abusing alcohol.
- Alberta has the lowest youth smoking rate at 16.2% compared to Ontario at 23.6% and Nova Scotia at 23.2%.
- 7.8% of Alberta youth report use of chewing tobacco compared to 4.8% in Nova Scotia.
- Cannabis is by far the most used illicit drug among Alberta youth (27.6%), followed by mescaline/magic mushrooms (10.4%), inhalants (5.6%) and club drugs such as ecstasy and crystal meth (5.3%).
- Cannabis use by Alberta teenagers (27.6%) is lower than Ontario (29.8%) and Nova Scotia (37%).
- Use of Cannabis by Alberta adolescents at least once in the last 12 months increases from 11.8% in grades 7-9 to 41.9% in grades 10-12.

- The vast majority of young Albertans reported they did not use any illicit substances in the last 12 months (from 72.4% non-use of Cannabis to 98.8% non-use of steroids).
- Most (over 92%) of Alberta youth reported never having experimented with or used cocaine, crack, hallucinogens, inhalants, uppers, downers, club drugs, steroids, and heroin or opium.
- Alberta usage rates of illicit drugs are lower in most cases than in Ontario and Nova Scotia.
- 41.2% of Alberta youth reported they have gambled at least once over the last 12 months.
- The most frequent youth gambling activities are scratch tabs (30.8%), playing cards for money (23%) and betting on sports events with a friend (21.1%).
- 3.8% of youth display gambling problems and an additional 5.7% display hazardous gambling patterns.

Risk and Protective Factors

- The prevalence of use of alcohol, tobacco and illicit drugs by Alberta youth has been shown to increase as the number of risk factors increase.
- The five most important risk factors for harmful use of substances and gambling by Alberta youth are age of user, peer risk behaviour, family history of substance abuse, family discord and poor connections to school life.
- The more protective factors a young Albertan has, the less likely is the abuse of substances and gambling problems.
- The five most important protective factors for harmful use of substances and gambling by Alberta youth are parental monitoring, good social skills, availability of and participation in pro-social activities and good school marks.

Implications for Fire Prevention: Alcohol, drugs and tobacco use has a direct impact on fire risk.

References:

1. “Establishing a Relationship Between Alcohol and Casualties of Fire,” FA-200. Emmitsburg, Md.: United States Fire Administration, Department of Homeland Security, 1999. Available online at <http://www.usfa.fema.gov/about/media/2004releases/020904a.shtm>
2. TOPICAL FIRE RESEARCH SERIES: Residential Smoking Fires and Casualties, June 2005 Volume 5, Issue 5. Source: <http://www.usfa.fema.gov/downloads/pdf/tfrs/v5i5.pdf>
3. Case Study: Contribution of Alcohol to Fire Fatalities in Ontario. U.S. Fire Administration/National Fire Data Center. Topical Fire Research Series, Volume 3 – Issue 5, July 2003