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Outdoor Smoking Bylaw

Background Document

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Executive Summary

The environment, economic and health impact of smoke is tremendous. The Fraser Health Authority and Canadian Cancer Society British Columbia and Yukon Division recognize the impact. This report outlines the benefits of a comprehensive Outdoor Public Spaces Smoking Regulation Bylaw for the City of Chilliwack.

Environment

With reference to wild fires, residential fires and litter/waste, a smoking by-law will reduce the risk of future fires and litter/waste thus protecting the public and private property.

Economic

There are significant cost savings at a municipal and provincial levels.

Health Impact

Overwhelming evidence supports that smoke-free by-laws are positive and improve the health of a community.

By-law best practice

Significant support from the literature and municipal action clearly demonstrate the benefit of smoke free policy.

Even in a season where little wildfire activity is forecasted, an outdoor public spaces smoking regulation will have positive health outcomes.

Benefits to Chilliwack

- A Smoke-Free Outdoor bylaw positions Chilliwack as a leader in the province.
- Aligns with current norms: 86% of BC residents are non-smokers.
- Supports community priorities for healthy, safe, and sustainable environments for residents.

This document outlines the evidence supporting the proposed Outdoor Smoking Bylaw for the City of Chilliwack. Currently the *Tobacco Control Act* of British Columbia restricts smoking in “substantially enclosed” public areas. This bylaw proposes to enhance the provisions of provincial legislation to protect the public and public property.

The current situation of wildfires in British Columbia is alarming. Several of these fires are believed to be caused by humans; in previous years, up to 68% have been attributed to human activities, and therefore preventable.

The benefits of an outdoor smoking bylaw are far-reaching, with the potential to improve the health of the citizens of Chilliwack. New residents often say that one of the reasons that they chose to come to this region is because of the natural environment and emphasis on healthy lifestyles here. Smoke free public places are consistent with these values. This document will outline the benefits from an environment, economic and health perspective.

1. Environment

a. Forest Fires

The BC Wildfire Service reports that 40% of all wildfires over the past decade have been caused by human activity rather than lightning strikes. The cost to the province from 2004 – 2014 due to these preventable fires has been \$676.5 million. According to the *Globe and Mail*, \$169 million had been spent on fighting fires by Aug 3, 2015 with roughly one-third caused by humans (Karstens-Smith, 2015).



Photo credit: <http://www.cbc.ca/news/canada/british-columbia/b-c-fires-greater-penalties-for-human-caused-wildfires-considered-1.3151993> Accessed 5 Aug 2015

As of Aug 4, 2015, 1409 fires were reported, covering 282,429 hectares (BC Wildfire Service, 2015, Aug 5).

Closer to home, a human-caused fire north of Harrison Hot Springs, was reported on Aug 3 and quickly grew to cover over 1300 hectares within 4 days (BC Wildfire Service, 2015, Aug 7).

Careless smoking is a major cause of preventable fires and fire related deaths. Littered cigarettes that are not properly extinguished or are carelessly discarded cause many outdoor forest fires. Prohibiting smoking in public parks would do much to reduce forest fires (Ference & Muir, 2013).

BC Wildfire Service Annual Statistics 2004 - 2014

Year	Total Fires	Total Hectares	Total Cost (millions)	Average Hectares per Fire	People-Caused	Lightning-Caused
2014	1484	369,169	\$297.9	248.8	664 (44.8%)	819 (55.2%)
2013	1861	18,298	\$122.2	9.8	564 (30.3%)	1297 (69.7%)
2012	1649	102,122	\$133.6	61.9	708 (42.9%)	941 (57.1%)
2011	653	12,604	\$53.5	19.3	444 (68%)	209 (32%)
2010	1672	337,149	\$212.2	201.6	680 (40.7%)	992 (59.3%)
2009	3064	247,419	\$382.1	80.8	881 (28.8%)	2183 (71.2%)
2008	2023	13,240	\$82.1	6.5	848 (41.9%)	1175 (58.1%)
2007	1606	29,440	\$98.8	18.3	687 (42.8%)	919 (57.2%)
2006	2570	139,265	\$159.0	54.2	1034 (40.2%)	1536 (59.8%)
2005	976	34,588	\$47.2	35.4	591 (60.6%)	385 (39.4%)
2004	2394	220,518	\$164.6	92.1	681 (28.4%)	1713 (71.6%)
Average *	1847	115,464	\$145.5	58.0	710.1 39.0%	1106.3 61.0%

* The average does not include the most recent year.

BC Wildfire Service, 2015

b. Residential Fires

Data collected from 1995 to 1999 by the Canadian Association of Fire Chiefs indicates that cigarette use is responsible for many residential fires, which has a significant impact on local Emergency Services, health care and the impacted families. Smoking material was responsible for 14,030 fires, 356 deaths, averaging 70 per year, 615 injuries, and over \$200 million in property damage. Most often, the victims were the most vulnerable: children, the elderly and the poor. Overall, cigarettes are the leading cause of residential fires and fire-related fatalities in Canada, and fires started by cigarettes tend to result in more deaths and property damage than any other cause (Health Canada, 2007). Fires caused by smokers in Alberta in the first five months of 2010 caused \$4.1 million in damage (Non-Smokers' Rights Association [NSRA], 2010).

City of Chilliwack staff report a 300% increase in grass and brush fires over last year (Personal communication. J. McMurray. 7 Aug 2015).

c. Litter/Waste

"Worldwide, an estimated three-quarters of a billion kilograms of cigarette butts end up dropped on the ground every year. They deposit nicotine, heavy metals, plastic fibers, benzene and other carcinogens into our environment. Cigarette butts can take up to 15 years to breakdown" (Letter from Dr. Paul Hasselback to BC Municipalities, 2009).

Cigarette filters never completely break down because of plastic fibres known as cellulose acetate. These filters trap carcinogenic toxins such as organic chemicals and heavy metals that can leach into soil and waterways. The carcinogens affect water quality and wildlife as they are toxic to fish and small animals. It is estimated that one-third of all cigarette filters are discarded into the environment where they are washed into rivers, lakes and the ocean, and eaten by birds, fish and animals (Cigarette Butt Pollution Project, 2013). Accidental ingestion of toxic litter by children in parks and playgrounds is a major concern. Nicotine in the filters is poisonous if ingested by children or animals.

"Protecting the environment is more than protecting the physical landscape and ecosystems, but also our everyday experience and lifestyle. As such, it is a collective responsibility and warrants a community-wide effort." 2040 Official Community Plan, City of Chilliwack, 2015, pg 34

One-third of the litter found on beaches and in rivers and streams is smoking-related. Clean-up costs are born by the local municipalities. Montreal has estimated that 3 million cigarette butts are discarded on the ground every day in its downtown, and Toronto found that cigarette-related litter made up 17% of all small litter found on its streets (NSRA, 2010).

In 2013, 31.5 billion cigarettes were sold in Canada (Health Canada, 2014).



Cigarette butts litter the street in Ottawa at a busy downtown intersection (NSRA, 2010)



Photo credit: Walsh, 2015

For World No Tobacco Day, 2015, two UFV students conducted a Butt Count in Chilliwack. 834 were collected from the parking lot behind Sutton Downtown Business Centre (pictured). Another 2000+ were collected at the park beside the FVRL library and on the hospital grounds.



Environmental Impacts

- Increased risk of forest fires
- Filters trap carcinogenic toxins
- Accidental ingestion of toxic litter by children is a major concern
- Impacts on wildlife



(Tobacco Info, 2010, Canadian Council for Tobacco Control, 2009, Canadian Cancer Society, 2012)

2. Economic Impact

In addition to the hundreds of millions that will be saved from wildfires, there are economic benefits to the community in terms of workplace productivity, health, business growth.

The World Health Organization (WHO) has noted that the tobacco industry argues smoke free legislation results in economic downfall (bars, restaurants, et cetera). Most often an argument used is that smoking bans will cost the hospitality industry 30% of its business. This claim has not been verified in any smoke-free jurisdiction (WHO, 2011). In most cases objective studies demonstrate that smoke-free legislation has a neutral or positive impact on business.

“Not a single scientifically objective study has found a negative economic impact of smoke-free legislation.”

WHO, 2011



Economic Impact

- Tobacco use kills more than **6,000** British Columbians each year.
- Tobacco use costs the BC economy **\$2.3 billion** annually
- Tobacco-related litter can outnumber other types of litter by as much as 3 times
- Decreased cost of cleaning parks and outdoor municipal-managed properties



(Canadian Cancer Society, 2010; Vancouver Parks & Recreation, 2010; Government of Alberta, 2009)

3. Health impact

a. Wildfires

The main components of wildfire smoke are particulate matter, carbon monoxide, volatile organic compounds, mercury, ozone, and pollutant mixtures.

Health effects associated with wildfire smoke range from eye, nose, or throat irritation to reduced lung function, bronchitis, exacerbation of asthma, and increased risk of death (Elliott, 2014).

Health effects that are known or suspected to be caused by wildfire smoke, based on the current state of the evidence:

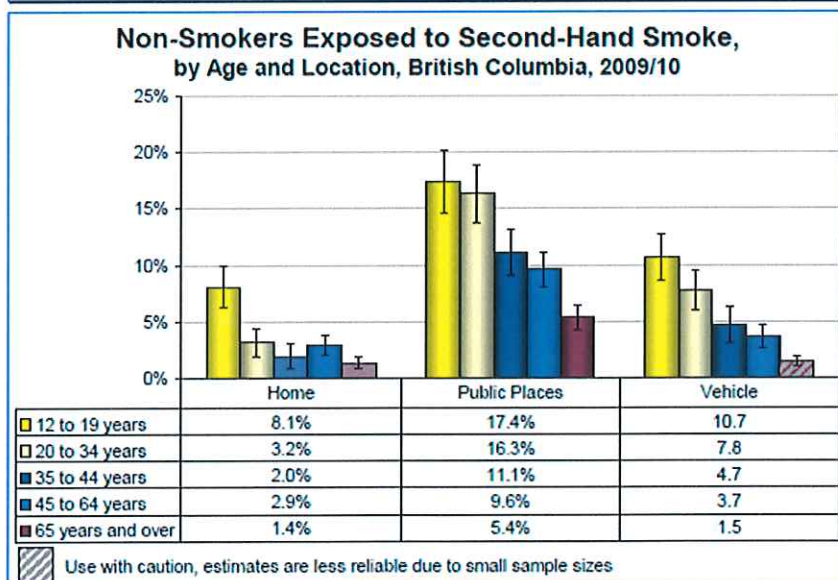
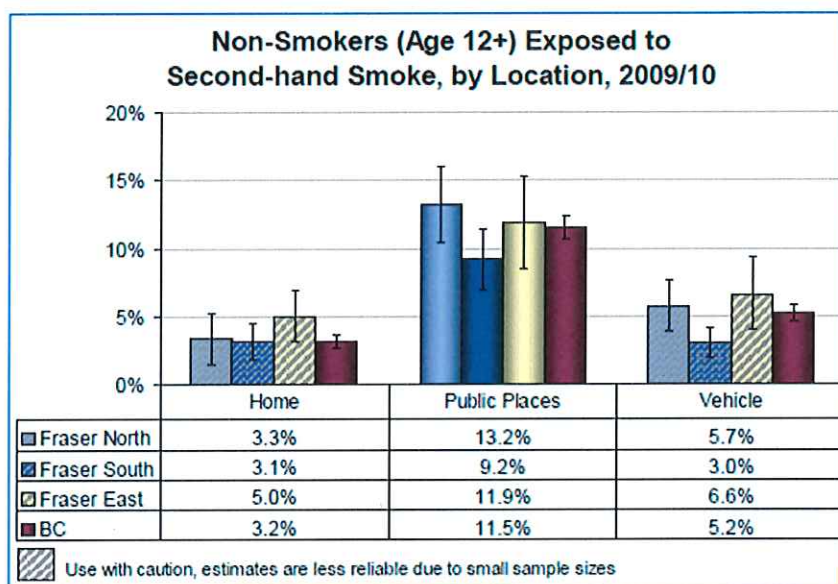
- Asthma and COPD exacerbations
- Bronchitis and pneumonia
- All-cause mortality
- Cardiovascular outcomes
- Adverse birth outcomes
- Childhood respiratory disease
- Anxiety
- Symptoms such as: eye irritation, sore throat, wheeze and cough

Wildfire smoke events often occur during hot periods. Health risks may be compounded if heat waves and smoke occur concurrently as many of the same populations are vulnerable to both heat and smoke (Elliott, 2014)

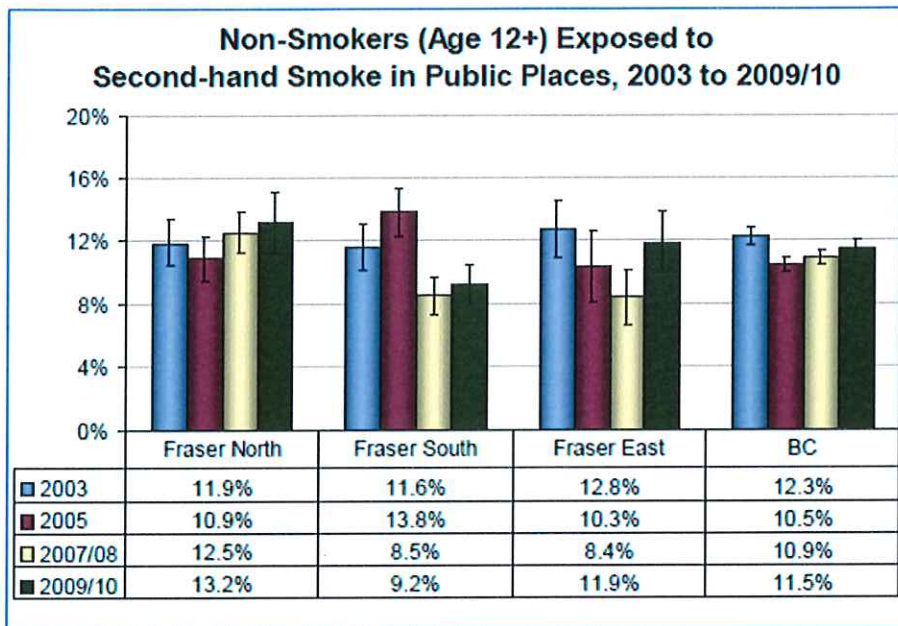
The International Agency for Research on Cancer (IARC) has classified outdoor air pollution as carcinogenic to humans. Epidemiologic evidence consistently demonstrated an increased risk of lung cancer in case-control studies in Europe, North America and Asia (Elliott, 2014). Most of the exposure in these studies is to urban air pollution from a variety of sources (e.g. transport, power generation, industrial activity, biomass burning). There is no reason to believe that wildfire smoke exposure did not contribute to the overall exposures in these studies, however, it is not possible to estimate the effect of exposure of a single wildfire event (Elliott, 2014).

b. Second Hand Smoke Exposure

Exposure to second hand smoke and its effects is greater than most realize. Public places are the most common location for reported exposure in the Fraser Valley, with those aged 12 – 34 reporting exposure more frequently than those over 35.



Note: Bars represent point estimates; whisker lines represent 95% confidence intervals.
 Source: Statistics Canada, Canadian Community Health Survey, 2009/10 (Cansim Table 105-0502).



Note: Bars represent point estimates; whisker lines represent 95% confidence intervals.
Source: Statistics Canada, Canadian Community Health Survey, 2003, 2005, 2007/08 and 2009/10.

Health and Business Analytics, Fraser Health Authority, 2012

In Chilliwack, the “My Health, My Community” survey indicates there has been no improvement in exposure to second hand smoke in public places since 2009/10.

➔ EXPOSED TO **SECOND HAND SMOKE** IN PUBLIC PLACES



Fraser Health, 2015

c. Tobacco Use – The Reality (Canadian Cancer Society BC Yukon)

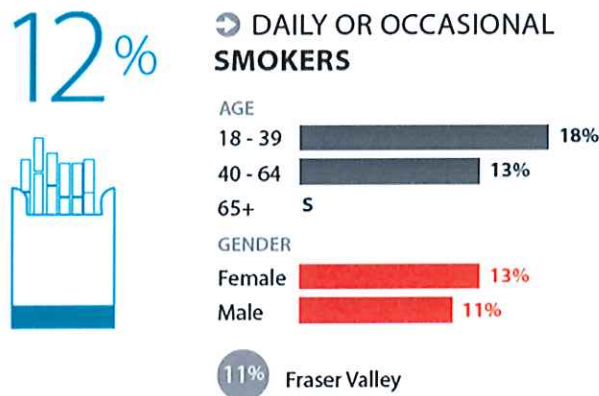
In Canada, tobacco causes 30% of all cancer deaths, and is related to more than 85% of lung cancer cases. Tobacco is the only legal product that kills 1 of every 2 people when used as intended.

Second-hand smoke is extremely toxic. There is no safe level of exposure to second-hand smoke. It contains over 4,000 chemicals and at least 50 of these are known to cause cancer.

Lung cancer is the 2nd most commonly diagnosed cancer in Canada (excluding non-melanoma skin cancers).

The Canadian Cancer Society BC & Yukon called on all British Columbians to bring the current smoking rate down to 9 per cent by 2020 in order to reduce tobacco-related deaths. While BC continues to lead the country with its low tobacco use rates, reduction of rates has plateaued and tobacco use continues to be the leading cause of preventable deaths and cancer deaths in BC and Canada (Canadian Cancer Society, 2013).

The Ministry of Health in BC has set a target of 10% smoking rate by 2023 (BC Ministry of Health 2014). Currently in Chilliwack the overall rate is 12%, with the highest use among those aged 18 - 39.



Fraser Health, 2015

d. Children and Second Hand Smoke

Children who grow up in smoke free communities are less likely to use tobacco as adults.

Those who are exposed to second hand smoke:

- Are 50% more likely to suffer lung and breathing problems
- Have an increased risk of developing asthma later in life
- Experience greater impacts than adults due to developing immune and respiratory systems

Canadian Cancer Society, 2012 Tobacco Free Kids

According to the McCreary Adolescent Health Survey, 2014, 25% of School District 33 students had tried smoking – 6% first tried at the age of 9 or younger, 18% tried before

age 15. Across Fraser East, 22% of students reported being exposed to second hand smoke at least some of the time (Poon et al., 2014).

e. Adults and Second Hand Smoke

Each year in BC up to 110 non-smokers die due to exposure to second hand smoke (SHS). Any exposure will increase risk of lung cancer, heart disease, and/or respiratory problems.

Also, exposure can lead to heart attacks and strokes.

A number of people believe indoor SHS is the real concern and not outdoor SHS. However, second-hand smoke is extremely toxic. Stanford University researchers examined particles in outdoor smoke under various conditions. The study revealed:

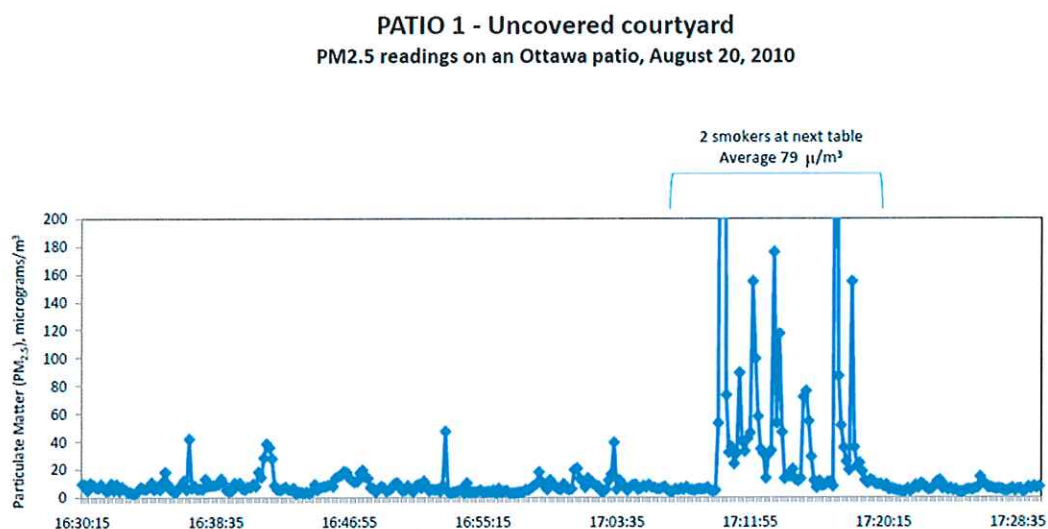
- A person near an outdoor smoker could breathe in smoke that could be 10 or 100 times more concentrated than normal background air pollution levels.
- Depending on air conditions, average levels of smoke within 0.5m from a single cigarette source are comparable to indoor levels.

Klepeis et al.,2007

f. Outdoor smoking

In a study conducted in Ottawa, fine particulate matter was measured in an outdoor setting before and after smoking occurred. This graph shows levels of fine particulate matter (PM 2.5) on a patio, before smokers lit up and when they were smoking at the next table. Note the jump in PM2.5 readings when the cigarettes were smoked.

Fine particulate matter is particulate matter that is 2.5 microns in diameter and less. It is also known as PM2.5 or respirable particles because it penetrates the respiratory system further than larger particles (Kennedy, 2014).



Kennedy, 2007



Smoke Free Outdoor Public Spaces



Sound public health policy that:

- Increases motivation for smokers to quit or cut back
- Models smoke-free living for children and youth, and de-normalizes smoking behaviour
- Decreases tobacco related waste and fire risk, and
- Ensures healthy public outdoor spaces for all.

(Stanford University, 2007)

g. Protect the public

According to the Clean Air Coalition of BC, surveys conducted over the last five years have consistently demonstrated strong public support for smoke-free outdoor public places. "The most recent poll of British Columbians commissioned by the Heart and Stroke Foundation, BC & Yukon in the fall, 2012 showed over 70% of British Columbians are in favour of smoke-free parks, playgrounds and beaches" (Clean Air Coalition of BC, 2013).

The economic benefits of smoke free bylaws are:

- Lower insurance costs
- Risk mitigation around potential hazards
- Improved health of population
- Cleaner air

The City of Ottawa implemented a 100 per cent smoke-free workplace and public places bylaw in 2001, with no designated smoking rooms. After accounting for trends, seasonal variations, and general economic conditions, the Ontario Tobacco Research Unit found no evidence that the smoke-free bylaw adversely affected restaurant and bar sales (Ministry of Health Promotion, 2006).

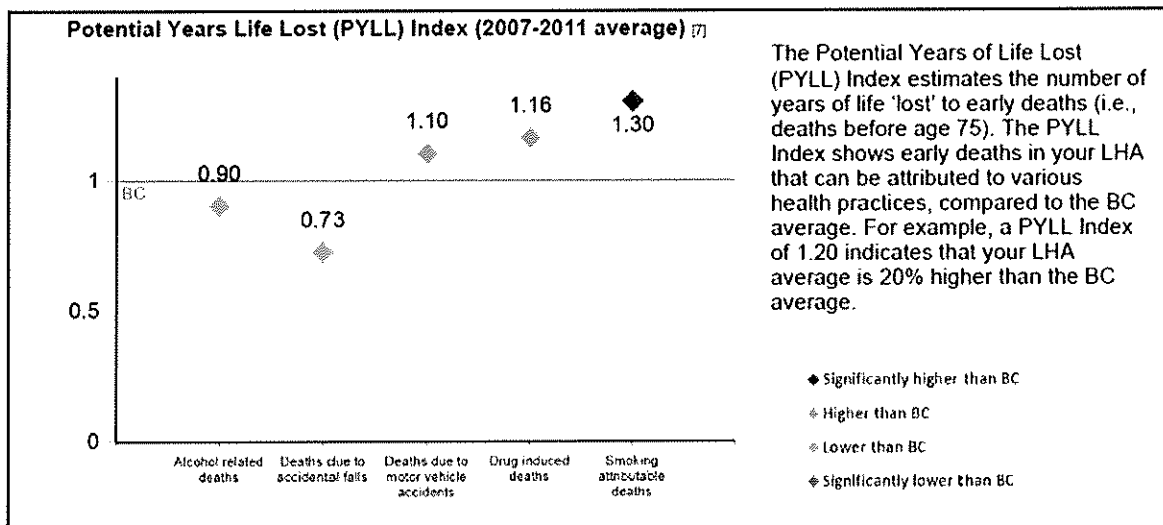
Smoke-free spaces are easier to clean and maintain with no costly servicing of ventilation equipment. Smoke-free workplaces result in increased employee productivity, lower insurance costs and lower risk of fire. Most importantly, smoke-free bars and restaurants have had overwhelmingly positive effects on the health of workers and Customers (NSRA, 2004).

Over 100 studies have found no impact on restaurant and bars sales resulting from indoor bans in these venues, and many of these establishments did not have outdoor patios where smokers could go outside to smoke. In Canada, four provinces, seven large cities, and many smaller communities legislated bans in these outdoor venues between 1996 and 2012, and none have reported economic harm from the ban. Further, there are potential economic benefits to businesses that have smoke-free policies. For example, costs to set-up and maintain a smoke-free designated area and costs from higher insurance rates are eliminated with smoke-free policies. There is also the potential for increased patronage from non-smokers who were formerly deterred by the smoke (FERENCE & MUIR, 2013).

h. Health Impacts of Smoke Free Spaces

A recent literature review by the World Health Organization found a 10 - 17% reduction in acute heart attack risk in communities that adopted smoke free policies. The highest protective effect was found among non-smokers and younger persons. This protective effect strengthened over time (WHO, 2014).

Chilliwack would benefit from a ban on outdoor smoking even in the absence of any wildfire risk. Chilliwack has an average rate of smoking-attributable deaths that is 30% above the BC average on the Potential Years of Life Lost Index (PYLLI) (PHSA, 2014)



(PHSA, 2014)

The prevalence and incidence of several chronic conditions linked to tobacco use is higher in Chilliwack:

Disease	Prevalence per 10000, 2011-2012	
	BC	Chilliwack
Cardiovascular	475	590
Chronic Obstructive Pulmonary Disease	605	698
	Incidence per 100,000, 2010	
All Cancers, Female	464	504
All Cancers, Male	583	673

Source: BC Vital Statistics Agency 2011 – Fraser Health Community Health Atlas

The standardized mortality ratio (SMR)* and Potential Years of Life Lost Index (PPLYI) for several preventable tobacco-related chronic conditions are also higher in Chilliwack than the BC average:

	SMR	PPLYI
Cancer, all sites	1.18	1.15
Lung cancer	1.27	1.35
Ischemic heart disease	1.15	1.36
Cardiovascular disease	1.04	1.51
Diseases of the Respiratory System	1.35	1.49
Chronic Lung Disease	1.38	1.57

Source: BC Vital Statistics Agency 2011 – Fraser Health Community Health Atlas

* A SMR (Standardized Mortality Ratio) compares the number of deaths from a specific condition observed in a region, with the number that would be expected if the region had the same age-specific death rates as the province.

6. By-law best practices

a. Enforcement

The following are BC examples of enforcement and compliance experiences:

Kelowna – Parks services will focus on voluntary compliance through education. City of Kelowna bylaw enforcement officers have the authority to issue tickets to offenders. A public education campaign conducted in partnership with Interior Health was key to this initiative (<http://planh.ca/success-stories/kelownas-citizens-breathe-free-smoke-free-parks>).

Vancouver – The Park Board’s primary goal is voluntary compliance with the smoke-free bylaw through education, but sometimes enforcement is necessary. Park Rangers and City of Vancouver bylaw enforcement officers all have the authority to issue tickets. <http://vancouver.ca/your-government/park-board-smoking-regulation-bylaw.aspx>

Pemberton – In the community of Pemberton they utilized an approach that supports the bylaw that focussed on education, awareness and changing social norms. This approach was key to the successful implementation of the bylaw. <http://planh.ca/success-stories/pemberton-sets-bar-high-gold-standard-smoking-bylaw> (Klitch, 2015).

b. Increasing Compliance

Education of the community is one important method for increasing compliance without active enforcement. People who understand what the restrictions are and why they are in place will be more likely to comply. One way to do this is through media campaigns, notices in newspapers, posters and word of mouth. Another way to frame the message about smoke-free spaces is to highlight the benefits to smokers who wish to cut back or quit, in addition to the benefits of reducing fire and environmental risks to the public.

7. Conclusion

The information contained in this document clearly highlights a number of benefits to introduce a smoke-free bylaw in the city of Chilliwack, BC. Environmental and economic research and data illustrates clear and timely positive impacts on public safety, protection and health.

The City of Chilliwack is to be commended for their leadership in this important initiative.

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