



City of Chilliwack

# Community Climate Action Plan

August 16, 2022

# Plan Summary

Located on the traditional, ancestral, and unceded territory of the Stó:lō Coast Salish peoples, the City of Chilliwack is a diverse and lively community located in the Fraser Valley in the Lower Mainland of British Columbia. Known for its relatively mild climate which provides excellent growing conditions for a wide variety of crops and agricultural products, Chilliwack has a vision to be a healthy, engaged and sustainable community.

Climate change threatens our ability to achieve this vision for our community—we have already experienced more frequent extreme-weather events (droughts, floods, heat waves, fires), and it is predicted that events like these will continue to increase over the coming decades. Reducing emissions rapidly is vital to preserving our quality of life in Chilliwack.

This Climate Action Plan puts forward a plan for shifting the community to become a clean, carbon neutral community by 2050, and aiming to cut emissions 40% by 2030 (from 2007 levels) on the way to that end goal. This plan focuses on big ideas for how the City of Chilliwack can play a role in meeting those targets.

Big shifts will be needed to reduce our emissions rapidly, and they are all possible with the right mix of government support, policies, and personal choices. This includes switching all of our homes and businesses to use zero-emission heating sources (like electric heat pumps), continuing to build a compact, complete community where people can walk, roll, bike or take transit where they need to go, using zero-emission cars and trucks, and eliminating compostable waste from our landfill.

By working together with residents, businesses, partners and other levels of government, the City aims to meet these ambitious targets while at the same time continuing to build a healthy, engaged and sustainable community.

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# 1. Background

## 1.1 PURPOSE OF THIS COMMUNITY CLIMATE ACTION PLAN

This Community Climate Action Plan provides a baseline greenhouse gas (GHG) emissions assessment of the community of Chilliwack, a set of targets to eliminate

GHG emissions in line with provincial targets, and a list of big ideas for how the City of Chilliwack can play a role in meeting those targets.

## 1.2 CHILLIWACK CONTEXT

The City of Chilliwack is a diverse and lively community located along the Fraser Valley in the Lower Mainland of British Columbia, known for its relatively mild climate which provides excellent growing conditions for a wide variety of crops and agricultural products. As the second largest city in the Fraser Valley, Chilliwack is 261.3 km<sup>2</sup> and is adjacent to the Fraser River and Vedder River.

Located on the traditional, ancestral, and unceded territory of the Stó:lō Coast Salish peoples, Chilliwack's history began with First Nations settlement. In the mid 19th century, non-Indigenous settlers were attracted to Chilliwack for agriculture and Chilliwack evolved as an

agricultural community due to its location and growing conditions. While agriculture remains an important part of Chilliwack, the community is now primarily suburban. Over 100,580 people currently reside in Chilliwack with family-oriented neighbourhoods and a vibrant urban core. As the city continues to grow, so too will the demand for places to live, work, visit and play. This must be met with strategies to meet this growth, while minimizing its impact on the environment and considering future climatic conditions.

## Climate Projections

In Chilliwack, residents and businesses can expect to see the following as a result of climate change:



**MORE EXTREME  
HEAT DAYS**



**MORE INTENSE  
WEATHER EVENTS**



**LONGER  
DRY SPELLS**



**MORE  
PRECIPITATION  
IN THE FALL, WINTER & SPRING**

## 1.3

### CLIMATE CHANGE GLOBALLY, AND IN THE CITY OF CHILLIWACK

When Canada signed the Paris Agreement in 2015 alongside other countries, the Federal government committed to keep global warming below 2°C, and as close to 1.5°C as possible. In 2018, the [Intergovernmental Panel on Climate Change \(IPCC\)](#)<sup>1</sup> released a report which supported this goal and highlighted the case to strive for 1.5°C. By staying below 1.5°C, the globe will suffer fewer negative impacts of climate change, including the intensity and frequency of extreme events, and the impacts to resources, ecosystems, biodiversity, food security, cities, and tourism.

Taking action over the next few years will be critical if we are to attain this goal. The scientific community has warned us that there is just over a decade to fundamentally change the current emissions path to prevent global instability. The current quality of life and affordability of Chilliwack depends on our ability to reduce greenhouse gas emissions, both locally and globally.

The local climate has already changed. We have already experienced more frequent extreme-weather events

(droughts, floods, heat waves, fires), and it is predicted that events like these will continue to increase over the coming decades. In Chilliwack, residents have already begun to experience impacts of the changing climate including the heat dome that occurred in June 2021, and the flooding and landslides that occurred in November 2021.

Global climate models indicate that the temperature will increase over the century. Locally, this will result in more extreme heat days, longer dry spells in summer, more precipitation in spring, fall and winter, warmer winters, and more intense extreme weather events.<sup>2</sup> By the 2050s, Chilliwack can expect the following changes in our region, on average<sup>3</sup>:

- Annually, 83 days over 25 degrees Celsius, on average, a 100% increase from historic values
- Annually, 33 days over 30 degrees Celsius, three times more than historic values
- Significant decrease in summer precipitation (18% lower by 2050, on average)
- Increase in fall precipitation (8% higher by the 2050s) with more falling during extreme events

## 1.4

### CURRENT GHG EMISSIONS IN OUR COMMUNITY

Within our community, residents, businesses and organizations conduct activities daily that result in GHG emissions including: heating and cooling buildings, heating hot water, transporting people and goods, and disposing of organic waste in the landfill (such as food scraps, paper, wood). In 2018, these activities resulted in approximately 411,600 tonnes CO<sub>2</sub>e emissions. Figure 1 shows the core sources of GHG emissions in the community (see Appendix A for a table of emissions by source). In addition to these main sources of emissions that are more directly related to the City's areas of responsibility, there are several other sources of emissions in the community, and these are shown

in Figure 2 for interest. These other sources (such as agriculture and off-road equipment) are managed by other levels of government.

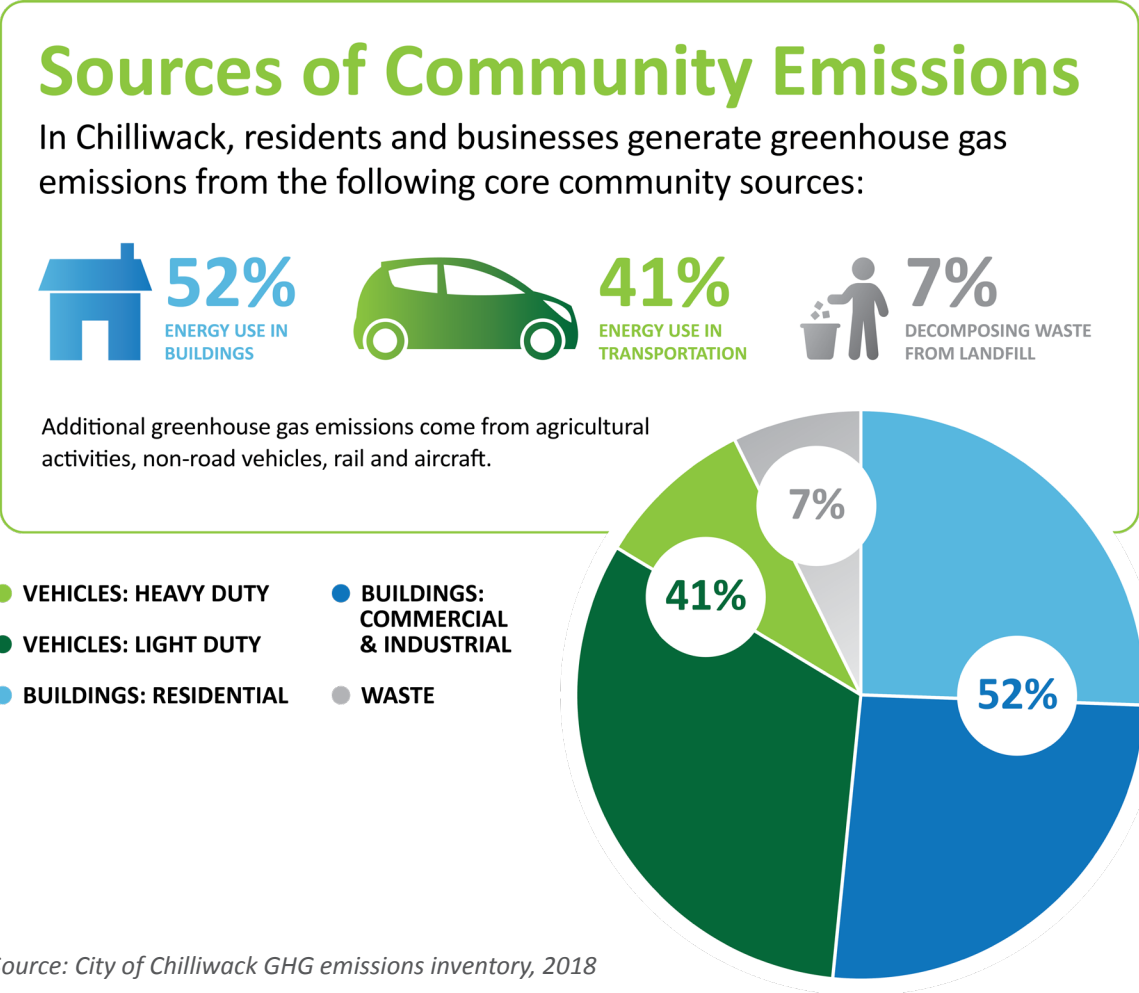
As Chilliwack continues to grow, GHG emissions will continue to grow as well, unless substantial changes are made to the amount of energy used, where the energy is sourced from, and how much waste accumulates. These changes are essential to achieving our climate goals.

1 Intergovernmental Panel on Climate Change Special Report—<https://www.ipcc.ch/sr15/>

2 <http://www.metrovancouver.org/services/air-quality/AirQualityPublications/ClimateProjectionsForMetroVancouver.pdf>

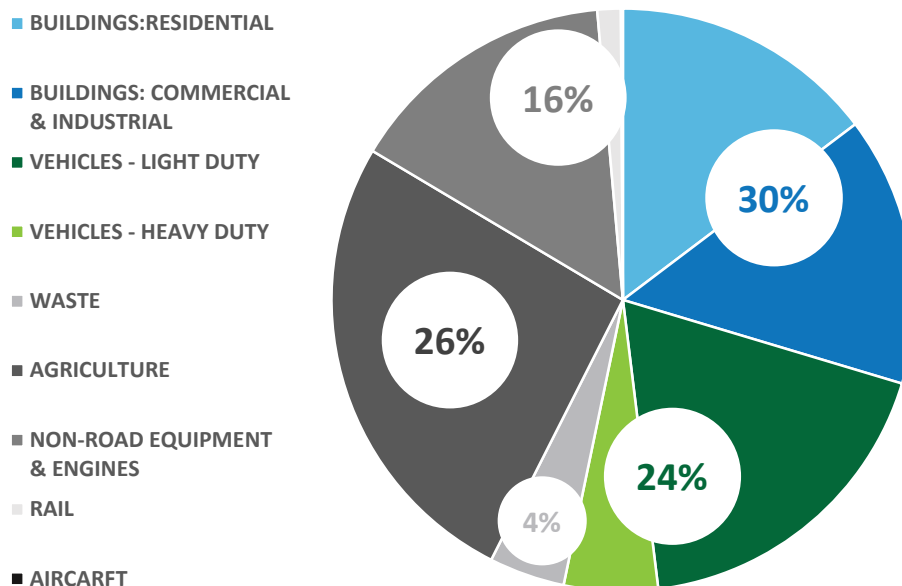
3 Projections sourced from PCIC data generated for the Chilliwack General Hospital site, published in [Moving Toward Climate Resilient Health Facilities for Fraser Health: Technical Briefing](#)

Figure 1. Core Community GHG Emissions in Chilliwack



Source: City of Chilliwack GHG emissions inventory, 2018

Figure 2. All Community GHG Emissions in Chilliwack, Including Sectors under Provincial and Federal Jurisdiction



## 1.5 AIR QUALITY IN CHILLIWACK

Air pollution can cause serious health impacts and environmental concerns. Adverse health impacts from exposure to poor air quality include respiratory symptoms, development of disease, and premature mortality<sup>4</sup>. Additional information on air quality and public health outcomes can be found in the [Fraser Valley Regional District Air Quality Management Plan](#).

Local air quality is affected not only by pollutants emitted in a community, but from across an airshed, defined by geography, weather, and prevailing wind conditions. Because Chilliwack and the Fraser Valley are located in the same airshed as Metro Vancouver and Whatcom County, activities in all of these

areas contribute to air pollution levels in Chilliwack, particularly when weather causes these pollutants to move up the valley and accumulate in the air around Chilliwack (typical of the daytime prevailing winds).

Air pollution and climate change are directly linked—GHG emissions and air contaminants are often produced by the same activities. In this region, activities such as on-road transportation, off-road machinery, residential and commercial heating, and livestock farming are amongst the largest emitters of both GHGs and air pollutants<sup>5</sup>. This relationship means that reducing community-based GHG emissions will contribute to improved local air quality.

## 1.6 CLIMATE ACTION PLAN DEVELOPMENT PROCESS

This Community Climate Action Plan focuses on efforts that can reduce GHG emissions that are produced by buildings, transportation, waste management, and the management of our natural areas. The Corporate Climate Action Plan focuses on efforts the City can take directly, including the management of City owned asset (Recreational facilities, sewer and water services, municipal buildings, fleets, and street lighting), parklands, fire services, and waste. The Community Climate Action Plan incorporates the ideas,

views and support of Chilliwack’s Mayor and Council, municipal staff, stakeholders within the community, and residents of Chilliwack. The plan was developed by an experienced project team including Pinna Sustainability and members of the Engineering team at the City. The following process took place to develop the Community Climate Action Plan.



<sup>4</sup> Health impacts of air pollution in Canada: estimates of morbidity and premature mortality outcomes. 2019. Health Canada. [http://publications.gc.ca/collections/collection\\_2019/sc-hc/H144-51-2019-eng.pdf](http://publications.gc.ca/collections/collection_2019/sc-hc/H144-51-2019-eng.pdf)

<sup>5</sup> <https://www.fvrd.ca/assets/Services/Documents/Air~Quality/2021%2009%2024%20AQMP%20-%20Final%20reduced.pdf>

## 1.7 ENGAGEMENT SUMMARY

To help shape the Community Climate Action Plan, potential GHG targets and potential actions were brought forward for public and stakeholder engagement. The table below summarizes the engagement events that occurred between March-May 2022.

Feedback was also sought through a public survey. Overall, consultation found that there is a high level

of concern amongst the public about climate change, with over 70% of survey respondents extremely or moderately concerned about climate change, and more than 60% indicating support for additional property taxes to fund the plan.

**Table 1. Summary of Public and Stakeholder Engagement, Spring 2022**

Date	Event
March 17	Transportation Advisory Committee
April 2	Cottonwood Mall Booth
April 12	Virtual Townhall
April 26	Stakeholder Workshop
April 27	Affordable Housing and Development Advisory Committee
April/May	Public and Stakeholder Consultation on Plan Initiatives



## 2. A Path Forward

Meeting the challenges presented by climate change in our region is reliant on action from all levels of government, as well as by industry, businesses, nonprofit and community organizations, and citizens.

### 2.1 TARGETS

This Climate Action Plan sets out an updated target to:

**Reduce GHG emissions from Chilliwack’s community activities 40% from 2007 levels by 2030, and to become a carbon neutral community by 2050.**

Over time, Chilliwack’s population is estimated to grow to 115,000 by 2030 and 150,000 by 2050, which is both a challenge and an opportunity in terms of rapidly transitioning the community to zero emission homes, transportation and waste.

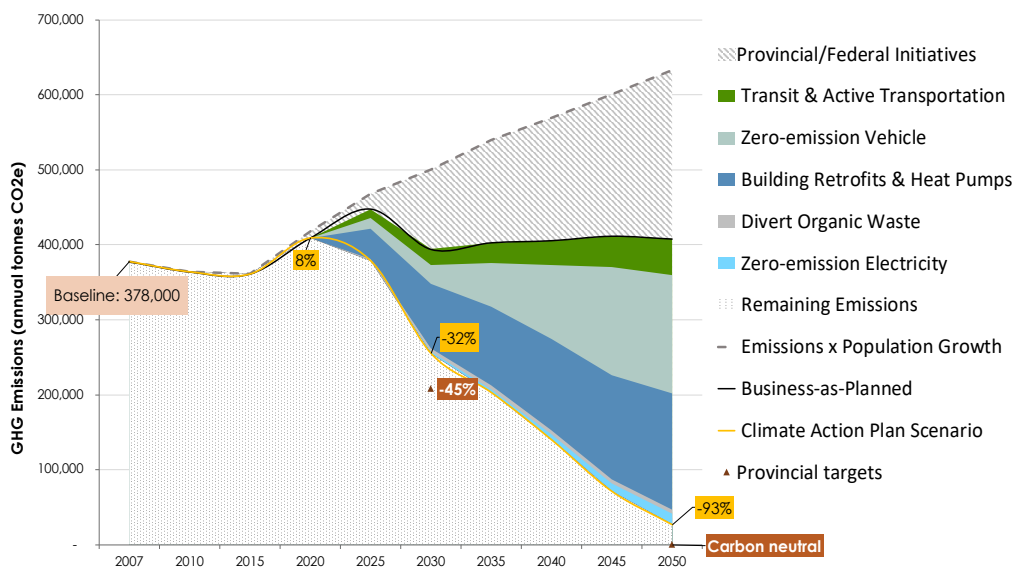
This plan sets out the role the City of Chilliwack can play to make these targets a reality. It will take effort from more than the City to meet those targets—the provincial and federal governments will play a key role

This Community Climate Action Plan presents a path for Chilliwack to both reduce its contributions to climate change, and to prepare for the changes to our climate that are already happening.

in implementing policies they have committed to, and in supporting communities to make big transitions in how we heat our homes, how we get around, and how we manage our waste while minimizing the impacts of climate change, particularly on those most vulnerable (see Appendix B for a list). Beyond governments, private industry, community groups and individuals will also need to play a role.

What will it take to cut emissions 40% by 2030 and become carbon neutral by 2050? The scenario illustrated in Figure 3 shows us one pathway to get there. It requires not only the implementation of provincial and federal government policies and regulations, but also actions and choices made by the City, all businesses, organizations and community members to substantially reduce our emissions.

**Figure 3. Chilliwack Carbon Neutral GHG Emissions Forecast (annual tons of CO<sub>2</sub>e)**



Actions to achieve the GHG reduction targets include:

- Residents use transit 5% and walk or roll 10% of trips by 2030
- 50% of light-duty and 20% of commercial vehicles are electric by 2030
- 40% of buildings use heat pumps by 2030 and 100% by 2050

## 2.2 CITY LEADERSHIP

The City of Chilliwack is responsible for delivering services to residents, including emergency services (fire, police, emergency preparedness), waste management (garbage, recycling, green waste), development planning and approval, recreation, parks and trails management, maintenance of roads and sidewalks, and many more. Delivery of these services currently results in GHG

- All new buildings are built to net-zero carbon standards starting in 2030, or as soon as is feasible
- 5 large natural area restoration projects are completed over 10 years
- 95% of organic waste is diverted from landfilling by 2040
- Landfill gas system has a collection efficiency of 75%

emissions from fleet vehicles, and from operating facilities and infrastructure. In addition to playing a role in helping the community become carbon neutral, the City is also committed to substantially reducing its operational emissions and becoming carbon neutral by 2050. The details of this transition are outlined in the Corporate Climate Action Plan.

## 2.3 COMMUNITY ACTION AREAS

### 2.3.1 TRANSPORTATION



Over 40% of GHG emissions in Chilliwack come from personal and commercial vehicles registered in the community. Over the last decade, the City and BC Transit have made investments to improve walking, cycling and

transit services, resulting in a 106% increase in transit rides since 2012<sup>6</sup>. However, driving remains the most common mode of transportation for commuting trips by far, with over 91% of trips made by car and 84% of these in single occupancy vehicle. Of the remaining trips, 4% are by walking, 2% are by transit and 1% are by bicycle<sup>7</sup>. According to a City survey, residents indicate they use other forms of transportation more often for trips other than commuting, but still primarily rely on cars (69%). When asked what transportation mode Chilliwack residents would prefer to use if conditions were ideal, 17% said walk, 23% said bike, and 20% said transit. Only 37% said car<sup>8</sup>. This indicates that if there are improved conditions for walking, cycling, and taking transit, many people will consider using these modes.

In addition, there has been an uptake of 40% in hybrid and of 140% in electric vehicles from 2018 to 2020<sup>9</sup>, indicating an increasing interest in zero emissions

6 <https://www.bctransit.com/documents/1529714950400>

7 <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CMACA&Code1=930&-Geo2=PR&Code2=59&SearchText=Chilliwack&SearchType=Begin&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=930&TABID=1&type=0>

8 <https://www.chilliwack.com/main/page.cfm?id=2970>

9 <https://public.tableau.com/app/profile/icbc/viz/VehiclePopulationIntroPage/VehiclePopulationData>

vehicles. Zero-emission options are increasingly available, and by 2030, over 90% of all light-duty vehicles sold in BC will be zero emission<sup>10</sup>.

**Goal:** Rapidly ramp up use of alternative and zero emission transportation options.

**Objectives:**

- Residents use transit 5% and walk or roll 10% of trips by 2030
- 50% of light-duty and 20% of commercial vehicles are electric by 2030

**What is already happening:**

- The City continues to support densification in Chilliwack’s urban corridors and the 2040 Official Community Plan (OCP) provides a detailed framework for managing this growth.
- BC Transit, in collaboration with FVRD and the City, recently completed the Transit Future Action Plan for Chilliwack, which currently targets a 3% mode share for transit by 2040.
- The City is developing an Active Transportation Plan to improve the safety and accessibility of Chilliwack’s walking and rolling infrastructure.
- The City is building new bike lanes and cycling facilities based on the Cycle Vision Plan (Airport/Broadway and Spruce/Britton corridors), sidewalks (Pedestrian Network Plan), trails (Greenspace Plan), and a multi-use pathway (Valley Rail Trail).
- The City has included provisions for EV charging stations in new residential development in the Zoning Bylaw, and is installing over 20 EV charging stations around the community.

**Figure 4. Key words from Chilliwack residents' ideas to reduce transportation emissions in the climate action survey.**



*Quote from Chilliwack’s public survey on how the City can take climate action:*

“Improving transit and active transportation, reducing parking spaces, eliminating parking requirements and improving the local economy, so Chilliwack residents can primarily work and shop in Chilliwack.”

10 [https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc\\_roadmap\\_2030.pdf](https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc_roadmap_2030.pdf)

## ACTIONS:

**ACTION:** Advocate to and collaborate with BC Transit to accelerate expanded transit services to support 5% transit mode share by 2030.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Engineering

**RESOURCE REQUIREMENTS:** Estimated \$283,000 per year to implement the new Transit Future Plan, including provincial funding. Expanded services not quantified at this time.

**TIMEFRAME:** Long (2023-2030)

**KEY PERFORMANCE INDICATORS:** Transit mode share.

**ACTION:** Implement the Draft Active Transportation Plan and the Cycle Vision Plan to support 10% walking / rolling mode share by 2030.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Engineering

**RESOURCE REQUIREMENTS:** Refer to Active Transportation Plan and Cycle Vision Plan budget. Funding opportunities include the National Active Transportation Fund, and the BC Active Transportation Infrastructure Grant Program.

**TIMEFRAME:** Long (2023-2030)

**KEY PERFORMANCE INDICATORS:** Walk / roll mode share.

**ACTION:** Investigate feasibility of providing or attracting alternative transportation programs such as e-bike sharing or car sharing.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Engineering

**RESOURCE REQUIREMENTS:** 0.15 FTE for staff research, analysis, potential RFI, and Council report.

**TIMEFRAME:** Medium (2026-2028)

**KEY PERFORMANCE INDICATORS:** Feasible share program option identified.

**EXAMPLE:** <https://www.dnv.org/streets-transportation/e-bike-share-pilot-program>

**ACTION:** Facilitate the implementation of EV charging in existing multi-family developments by promoting BC Hydro's EV Charger Rebate Program for apartment and condo buildings to stratas and building owners.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Engineering

**RESOURCE REQUIREMENTS:** 0.10 FTE for staff outreach, promotion and meeting coordination with building owners. Current funding from BC Hydro provides up to \$3,000 for planning, up to \$80,000 for infrastructure, and up to \$25,000 for chargers to support apartment/condo buildings.

**TIMEFRAME:** Short (2023-2026; while rebates last)

**KEY PERFORMANCE INDICATORS:** Number of apartment / condo buildings with EV infrastructure installed.

**ACTION:** Review standards for EV charging requirements in residential developments to ensure alignment with 50% EV ownership by 2030 and 100% before 2050.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Planning / Engineering

**RESOURCE REQUIREMENTS:** 0.10 FTE for review and potential modification.

**TIMEFRAME:** Short (2023-2026)

**KEY PERFORMANCE INDICATORS:** Percent of registered personal vehicles that are zero emission.

**ACTION:** Expand EV charging requirements to new commercial developments to support public and commercial fleet charging needs.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Planning / Engineering

**RESOURCE REQUIREMENTS:** 0.10 FTE for review and revision of this component of the Zoning Bylaw.

**TIMEFRAME:** Medium (2026-2028)

**KEY PERFORMANCE INDICATORS:** Completion of a policy for commercial EV charging infrastructure. Percent of registered commercial vehicles that are zero emission.

## 2.3.2 BUILDINGS



Buildings are the most significant source of GHG emissions in Chilliwack, contributing over half of all emissions in the community. While BC is fortunate to

have very low emission hydroelectricity, most buildings have heating and cooling systems that run on fossil fuels (primarily natural gas, but also oil, diesel, and some have wood burning appliances). Climate change projections anticipate hotter summer temperatures, which may require additional summer cooling.

As Chilliwack's population grows, new development provides an opportunity to build efficient, low carbon and resilient new residential buildings—features that will reduce costs for energy bills, while also improving comfort and indoor air quality. For existing buildings, retrofits will be needed to switch away from fossil fuels towards heat pumps and, ideally, to improve efficiency at the same time. This will reduce GHG emissions associated with heating, provide efficient summer cooling, and enable existing buildings to reduce their emissions, preparing residents for climate change.

**Goal:** Become a community with carbon free homes and buildings

### Objectives:

- 40% of buildings use heat pumps by 2030 and 100% by 2050
- All new buildings are built to net-zero carbon standards starting in 2030, or as soon as is feasible

### What is already happening:

- There are already examples of community buildings with low energy use, including commercial, retail, and educational buildings that have achieved a Leadership in Energy and Environmental Design (LEED) Standard.
- The City of Chilliwack has signed on to the Solar Hot Water Regulation, requiring new residential buildings to include the installation of conduits and structural improvements to support future installation of solar collections for a solar domestic hot water system.

*Quotes from Chilliwack's public survey on how the City can support climate action:*

“Providing grants. The reality is it is expensive for the average resident to go green whether that's updates on an existing home or buying an electric vehicle or even purchasing a bike.

“Encouraging and supporting retrofitting of homes and business with energy efficient systems and protecting existing green spaces and trees.

## ACTIONS:

**ACTION:** The City of Chilliwack will offer a municipal top-up rebate to the [CleanBC Better Homes and Home Renovation Rebate Program](#).

**RESPONSIBLE DEPARTMENT / CHAMPION:** Engineering

**RESOURCE REQUIREMENTS:** Minimal staff time (Province of BC administers the program). Top-up incentives, e.g. \$350 per retrofit for 200 homes (\$70,000). Some municipalities offer higher top-ups (e.g. \$2,000 per retrofit) to encourage more uptake, or to support lower income households.

**TIMEFRAME:** Short (2023-2026)

**KEY PERFORMANCE INDICATORS:** Number of home renovations incentivized annually.

**ACTION:** Track progress on the provincial Property Assessed Clean Energy (PACE) retrofit financing program that is currently being considered, and offer the program once enabled.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Finance / Engineering

**RESOURCE REQUIREMENTS:** 0.50 FTE, plus \$5000 for communications

**TIMEFRAME:** Short (2023-2026)

**KEY PERFORMANCE INDICATORS:** a) Program enabled by Province; b) Program established by City.

**ACTION:** Work with the building industry to build capacity to accelerate the energy efficiency requirements for new and existing buildings.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Building / Engineering

**RESOURCE REQUIREMENTS:** 0.30 FTE to develop and implement an engagement strategy, conduct public engagement, report to Council. Further resources will be needed to implement the outcomes of consultation.

**TIMEFRAME:** Short (2023-2026)

**KEY PERFORMANCE INDICATORS:** Number of participants engaged.

**ACTION:** Support builder education by partnering with BC Energy Step Code partners to offer [training](#) on how to build more energy-efficient buildings.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Building / Engineering

**RESOURCE REQUIREMENTS:** 0.10 FTE staff time for coordination of events plus \$2000 for hard costs associated with hosting sessions.

**TIMEFRAME:** Medium (2024-2027)

**KEY PERFORMANCE INDICATORS:** Number of participants trained annually. Number of sessions held annually.

**ACTION:** Support provincial requirements for low carbon building materials to accelerate the adoption of this policy.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Building / Engineering

**RESOURCE REQUIREMENTS:** 0.01 FTE to stay abreast of proposed policy changes, and draft council reports as required.

**TIMEFRAME:** Short (2023-2026)

**KEY PERFORMANCE INDICATORS:** Change to Provincial requirements to support low carbon building materials.

### 2.3.3 NATURAL AREAS



Natural environments provide a range of benefits to the community, from providing shade in the hot summer, to infiltration of rainfall and protection against erosion, natural environments reduce the severity of impacts that will increase with climate change. At the same time, natural areas provide us with cleaner air and can pull carbon from the atmosphere, storing it in the plants and soil (called carbon sequestration). What's more, green spaces have significant importance to the mental and physical health of residents, increasing the sense of community and creating places for recreation activities, for children to play and neighbours to meet and socialize.

#### ACTIONS:

**ACTION:** Develop and implement a restoration plan that aims to restore five sites with significant carbon sequestration potential over 10 years.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Engineering

**RESOURCE REQUIREMENTS:** 0.15 FTE for staff to develop the plan, apply for funding, and \$7,000 for consulting fees to support plan development. Implementation costs estimated to be upward of \$250,000 for five sites. Supportive funding may be available through federal programs, including: Natural Smart Climate Solutions Fund, 2 Billion Trees, and National Urban Parks.

**TIMEFRAME:** Short (2023-2026)

**KEY PERFORMANCE INDICATORS:** Plan completed and budget allocated to implement plan actions.

Climate change, however, impacts species and ecosystems and their ability to provide these services. From alterations to productivity, to increases in invasive species and loss of habitat due to changes in temperature and precipitation and a direct impact from drought and heat waves. As a result, they become more vulnerable and less resilient. By enhancing and protecting our natural areas, Chilliwack will ensure our natural beauty will continue to grow and thrive.

**Goal:** Restore and strengthen natural areas

#### Objectives:

- 5 large natural area restoration projects are completed over 10 years

#### What is already happening:

- The City planted 22,000 climate resilient trees on Mt. Thom with the help of volunteers.
- The City has completed riparian restoration and salmon habitat enhancement projects with school groups and other organizations on an on-going basis.
- The City plants trees annually to support and enhance Chilliwack's urban forest.
- A Tree Management Bylaw requires an evaluation of pre-existing trees and a plan to plant or retain trees in new developments.



**ACTION:** Develop an engagement strategy and materials for landowners to showcase opportunities to reclaim and restore natural areas.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Engineering

**RESOURCE REQUIREMENTS:** 0.15 FTE annually for 2 years for staff to develop a strategy, materials, and conduct ongoing outreach. Potential City role to provide resources (e.g. plants and materials), or facilitation to find external funding for identified projects. Potential funding from the provincially-funded Health Watersheds Initiative.

**TIMEFRAME:** Short (2023-2026)

**KEY PERFORMANCE INDICATORS:** Number of private restoration projects City-facilitated / supported.

**ACTION:** Develop a strategy to enhance Chilliwack's tree canopy and build on the 25% target in the Official Community Plan (Goal 4, Objective 4).

**RESPONSIBLE DEPARTMENT / CHAMPION:** Engineering

**RESOURCE REQUIREMENTS:** 0.30 FTE to research, conduct public engagement, and report to Council. Further resources will be needed to implement the outcomes of consultation.

**TIMEFRAME:** Short (2023-2026)

**KEY PERFORMANCE INDICATORS:** City tree canopy coverage.

## 2.3.4 WASTE



When organic-based waste (such as paper, wood, textiles, food, etc.) goes to the landfill, it breaks down slowly over time and releases methane gas, a potent GHG that is 24 times more powerful than carbon dioxide at trapping heat in the atmosphere<sup>11</sup>. By diverting compostable waste and recyclable materials from the

landfill, including composting our kitchen scraps and yard trimmings, recycling construction material and recycling plastic and paper packaging, we can reduce these emissions and generate other useful resources at the same time. Currently, curbside compostable waste and recyclable material collection in Chilliwack already diverts a high rate of waste per year, approximately 13,000 tonnes, or 70%.

Any compostable waste that has already been landfilled, or any new waste that is deposited, continues to produce GHG emissions for decades as the material slowly breaks down. The City's landfill has a landfill gas capture system to capture some of this methane, converting it to CO<sub>2</sub> emissions and lessening its impact on the climate. This system can continue to improve in efficiency to capture even more of the methane being released.

<sup>11</sup> <https://www2.gov.bc.ca/assets/gov/environment/climate-change/cng/methodology/2020-pso-methodology.pdf>

**Goal:** Increase the diversion of organic (compostable) waste from landfill and reduce methane released

**Objectives:**

- 95% of compostable waste generated each year is diverted by 2040
- Landfill gas system has a collection efficiency of 75%

**What is already happening:**

- There are currently regional sorting requirements for compostable waste and recycling for all industrial,

commercial, institutional, and residential sources under the FVRD Solid Waste Management Plan and supported by equivalent waste sorting requirements in the City’s Solid Waste Management Bylaw.

- The City is phasing in a compostable waste disposal ban for the Bailey Landfill, starting in 2022.
- The City implemented curbside compostable waste collection in 2017.
- The Single-Use Item Reduction Bylaw came into effect in April 2022.

**ACTIONS:**

**ACTION:** Invest in public education programs to divert organic waste, including curbside collection, commercial and multi-family organics diversion, home composting and pest management education.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Engineering

**RESOURCE REQUIREMENTS:** Accommodated within existing staff resources.

**TIMEFRAME:** Ongoing

**KEY PERFORMANCE INDICATORS:** Number of events or participants in education programs.

**ACTION:** Establish a bylaw to increase diversion of construction, land clearing and demolition waste, accompanied by education and resources.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Building / Engineering

**RESOURCE REQUIREMENTS:** 0.30 FTE to research, develop bylaw language, conduct public engagement, report to Council. Further resources will need to be allocated for education and enforcement of the new bylaw.

**TIMEFRAME:** Medium (2024-2027)

**KEY PERFORMANCE INDICATORS:** Bylaw adopted. Estimated waste diverted annually once implemented.

**EXAMPLE:** <http://www.metrovancouver.org/services/solid-waste/SolidWastePublications/DLCToolkit.pdf>

**ACTION:** Continue to improve the efficiency of the Bailey Landfill gas capture system to achieve 75% collection efficiency.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Engineering

**RESOURCE REQUIREMENTS:** Operating contractor and/or in-house 0.5-1.0 FTE

**TIMEFRAME:** Ongoing

**KEY PERFORMANCE INDICATORS:** Bailey Landfill gas collection efficiency (%).

### 2.3.5 AIR QUALITY AND AGRICULTURE



Air quality is important for our health and the environment. The City has already been working to make changes to improve air quality in the region, by supporting the Fraser Valley Regional District on an [Air Quality Management Plan \(AQMP\)](#). Further, we know that a large source of greenhouse gas emissions and air quality contaminants in the community are from agriculture, an economic driver and the livelihood of many residents of Chilliwack.

**Goal:** Help achieve the regional vision for healthy air and clear vistas that support a vibrant region.

#### What is already happening:

- The Fraser Valley Regional District recently updated the region's Air Quality Management Plan.
- The City updated the Open Burning Bylaw No. 5038 to align with BC Open Burning Smoke Control Regulation and reduce smoke emissions.

- Working in partnership with the Fraser Valley Regional District, outreach programs, including programs and rebates are offered to residents when they participate in the Wood Smoke Exchange Program.

#### ACTIONS:

All of the actions identified earlier aim to substantially reduce GHG emissions, and all have the co-benefit of also reducing air contaminant emissions. The following actions identified in the FVRD AQMP will be pursued by the City that are directly related to improving air quality beyond those identified above:

- Work with the FVRD and other municipalities in the region to align residential and outdoor burning regulations (AQMP actions #27, 30, 31).
- Coordinate with the FVRD to support planting of low-biogenic volatile organic compound-emitting tree species in the municipal tree planting program (AQMP action #54).

Although the City does not play a direct role in the agricultural sector, which is regulated and managed provincially, the City can play a small role to support a low emission agricultural sector through the following actions:

- Actively encourage the agricultural community to participate in programs that store carbon and reduce GHG emissions, such as the federal Agricultural Climate Solutions program.
- Incorporate a climate-friendly lens where the City participates in economic development and tourism events such as the tulip festival, farm tours, and farmer's markets.

**ACTION:** Collaborate with the FVRD, the Province, health and transportation authorities to address issues related to air quality.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Engineering

**RESOURCE REQUIREMENTS:** Accommodated within existing staff resources.

**TIMEFRAME:** Ongoing

**KEY PERFORMANCE INDICATORS:** Air quality contaminants of concern.

**ACTION:** Work with the agricultural sector to identify opportunities for sustainable farming practices and GHG emissions reductions.

**RESPONSIBLE DEPARTMENT / CHAMPION:** Engineering

**RESOURCE REQUIREMENTS:** 0.30 FTE to develop and implement an engagement strategy, conduct public engagement, report to Council. Further resources will be needed to implement the outcomes of consultation.

**TIMEFRAME:** Short (2023-2026)

**KEY PERFORMANCE INDICATORS:** Number of participants engaged.

### 3. Implementation and monitoring

This Climate Action Plan focuses on the efforts the City of Chilliwack can take to help the community rapidly transition to a low carbon community. The transition will require effort from government, residents, businesses and community organizations to ensure Chilliwack makes the necessary moves to minimize the impacts of climate change, and at the same time, invest in a clean and sustainable future for the community.

The Climate Action Plan will be led by the Engineering Department, but will involve collaboration with staff

across departments. The following table summarizes the action plan at a glance, including responsibilities, resource estimates, timeframe for implementation, and how actions will be tracked. Successful implementation will require increased annual city budgets, including allocating additional staff resources to champion the plan and actions, and other costs to fulfill the actions. Staff responsible for implementing the plan can also serve a vital role in seeking and securing funding to further support implementation.

Action:	Responsible Department/ Champion:	Resource Requirements:	Timeframe:	Key Performance Indicators:
<b>TRANSPORTATION</b>				
Accelerate expanded transit services	Engineering	\$283,000 per year	Long (2023-2030)	Transit mode share.
Implement the Draft Active Transportation Plan and Cycle Vision Plan	Engineering	Refer to Active Transportation Plan and Cycle Vision Plan budget	Long (2023-2030)	Walk/roll mode share.
Explore alternative transportation programs	Engineering	0.15 FTE	Medium (2026-2028)	Feasible share program option identified. Example: <a href="https://www.dnv.org/streets-transportation/e-bike-share-pilot-program">https://www.dnv.org/streets-transportation/e-bike-share-pilot-program</a>
Promote BC Hydro's EV Charger Rebate Program for apartment buildings	Engineering	0.10 FTE	Short (2023-2026; while rebates last)	Number of apartment / condo buildings with EV infrastructure installed.
Review standards for EV charging requirements in residential developments	Planning / Engineering	0.10 FTE	Short (2023-2026)	Percent of registered personal vehicles that are zero emission.
Expand EV charging requirements to new commercial developments	Planning / Engineering	0.10 FTE	Medium (2026-2028)	Completion of a policy for commercial EV charging infrastructure. Percent of registered commercial vehicles that are zero emission.

Action:	Responsible Department/ Champion:	Resource Requirements:	Timeframe:	Key Performance Indicators:
<b>BUILDINGS</b>				
<a href="#">Offer municipal top-up rebate green home upgrades</a>	Engineering	\$70,000	Short (2023-2026)	Number of home renovations incentivized annually.
Track and then offer Property Assessed Clean Energy (PACE) retrofit finance program	Finance / Engineering	0.50 FTE; \$5,000	Short (2023-2026)	a) Program enabled by Province; b) Program established by City.
Build capacity in the building industry for energy efficiency	Building / Engineering	0.30 FTE	Short (2023-2026)	Number of participants engaged.
<a href="#">Offer training with BC Energy Step Code partners</a>	Building / Engineering	0.10 FTE; \$2,000	Medium (2024-2027)	Number of participants trained annually. Number of sessions held annually.
Support provincial requirements for low carbon building materials	Building / Engineering	0.01 FTE	Short (2023-2026)	Change to Provincial requirements to support low carbon building materials.
<b>NATURAL AREAS</b>				
Restore five natural areas	Engineering	0.15 FTE; \$7,000; \$250,000	Short (2023-2026)	Plan completed and budget allocated to implement plan actions.
Showcase opportunities to reclaim and restore natural areas to landowners	Engineering	0.15 FTE	Short (2023-2026)	Number of private restoration projects City-facilitated / supported.
Enhance Chilliwack's tree canopy	Engineering	0.30 FTE	Short (2023-2026)	City tree canopy coverage.
<b>WASTE</b>				
Invest in public education programs to divert organic waste	Engineering	Existing staff resources	Ongoing	Number of events or participants in education programs.
Establish a bylaw to increase diversion of waste by the construction sector	Building / Engineering	0.30 FTE	Medium (2024-2027)	Bylaw adopted. Estimated waste diverted annually once implemented. Example: <a href="http://www.metrovancouver.org/services/solid-waste/SolidWastePublications/DLCToolkit.pdf">http://www.metrovancouver.org/services/solid-waste/SolidWastePublications/DLCToolkit.pdf</a>
Improve efficiency of the Bailey Landfill gas capture system	Engineering	0.5-1.0 FTE	Ongoing	Bailey Landfill gas collection efficiency (%).
<b>AIR QUALITY AND AGRICULTURE</b>				
Partner to address issues related to air quality	Engineering	Existing staff resources	Ongoing	Air quality contaminants of concern.
Identify opportunities for sustainable farming practices	Engineering	0.30 FTE	Short (2023-2026)	Number of participants engaged.

# Appendix A: Community energy and GHG inventory

**Table 1: Community Energy Use and GHG Emissions (2018, except where noted as 2015)**

Sector	Energy Use (GJ)	GHG Emissions (tCO <sub>2</sub> e)	GHG Emissions Split (%)
Buildings – Residential	3,557,206	105,300	26%
Buildings – Commercial and Industrial	3,263,410	107,000	26%
Vehicles – Light duty <sup>[1]</sup>	[1]	132,000	32%
Vehicles – Heavy duty <sup>[1]</sup>	[1]	37,300	9%
Waste	n/a	30,100	7%
<b>Total</b>	<b>6,787,053</b>	<b>411,600</b>	
<b>For Information only (2015)<sup>[2]</sup></b>			
Agriculture	n/a	186,800	
Non-road equipment and engines		107,800	
Rail		9,300	
Aircraft		800	

Table notes: [1] Mobile emissions for Chilliwack were estimated by Metro Vancouver based on the 2015 Lower Fraser Valley Air Emissions Report, and adjusted for population growth. Energy use values were not provided. [2] Agriculture and other mobile emissions are included for information purposes. These emission sources are generally managed by the provincial government and local governments generally have limited purview in this area. These emissions were estimated by Metro Vancouver based on the 2015 Lower Fraser Valley Air Emissions Report.

# Appendix B: Planned provincial and federal climate policies

Over the last decade, there has been increasing focus across the globe and across all sectors on the state of the earth's climate. This increased attention has manifested as key commitments at all levels of government, including:

**Paris agreement**<sup>12</sup>: An international commitment by 195 nations to keep global temperature rise well below 2°C this century, and to pursue efforts to keep the rise to 1.5°C above pre-industrial average.

**Canada GHG target**: Reduce GHG emissions 40-45% by 2030, relative to 2005 and net-zero emissions by 2050<sup>13</sup>.

**Pan-Canadian Framework on Clean Growth and Climate Change**<sup>14</sup>: A national strategy to take strong action on climate change based on four pillars: pricing carbon pollution, complementary climate actions, adaptation and resilience, and clean technology, innovation and jobs. It includes:

- **Calling on municipal governments to demonstrate leadership** by: “(1) setting ambitious targets; (2) cutting emissions from government buildings and fleets; and (3) scaling up clean procurement.”
- **Light-duty vehicle standards**: In addition to emission reduction standards for vehicles manufactured 2011 to 2025, the federal government also set a mandatory target for all light-duty vehicle and passenger truck sales to be zero-emission by 2035<sup>15</sup>.
- **Net-zero energy ready building codes**: “Federal,

provincial, and territorial governments will work to develop and adopt increasingly stringent model building codes, starting in 2020, with the goal that provinces and territories adopt a ‘net-zero energy ready’ model building code by 2030.”

**BC GHG targets**: Reduce GHG emissions 40% by 2030, 60% by 2040 relative to 2007, and to reach net-zero emissions by 2050 (as stated in the CleanBC Roadmap to 2030 released in November 2021).

**CleanBC**<sup>16</sup>: In 2018, the Province released a province-wide strategy to drive down GHG emissions while creating a stronger economy, which included actions to reduce BC's emissions approximately 75% of the amount needed to reach the 2030 target. In November 2021, the Province released an updated Roadmap that shows a path to meet the 2030 target. Actions that are of interest to local governments include:

## TRANSPORTATION & LAND USE

- **Reduce distance travelled**: work to reduce distances travelled in light-duty vehicles by 25% by 2030, compared to 2020 (urban planning, transit, active transport)
- **Mode share target**: increase share of personal / commuting trips by walking, cycling, transit to 30% by 2030, 40% by 2040 and 50% by 2050 (in 2019, 24% reported using sustainable modes to commute across BC)

12 <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

13 <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050.html>

14 <https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework.html>

15 <https://www.nrcan.gc.ca/energy-efficiency/transportation-alternative-fuels/electric-and-alternative-fuel-infrastructure/zero-emission-vehicle-awareness-initiative/22209>

16 <https://cleanbc.gov.bc.ca/>



- *Zero Emission Vehicle (ZEV) standard:* 100% light-duty vehicle sales by 2035, including 26% by 2026 and 90% by 2030
- *Medium and Heavy-duty standard:* plan to introduce new ZEV targets for medium- and heavy-duty vehicles, in alignment with the state of California
- *Low carbon fuel standard:* reduce lifecycle carbon intensity of fuel to 30% by 2030 (currently at 10%)

## BUILDINGS

- *BC Building Code:* 20% more energy efficient by 2022 and zero carbon by 2030
- *Renewable natural gas:* 15% renewable content in natural gas by 2030
- *Property Assessed Clean Energy program:* Proceed with next steps to establish financing for energy retrofits paid through local government property taxes

## WASTE

- *Organic waste:* 95% of organic waste diverted from landfills and turned into other products by 2030

## ELECTRICITY

- *100% Clean Electricity Delivery Standard for the BC Hydro grid (currently 98%)*

## LOCAL GOVERNMENT

- *Establish new program in 2022:* support local government climate actions through flexible, predictable funding

Many actions to reduce greenhouse gas emissions will also provide air quality benefits, but not all. All of the initiatives outlined above for reducing transportation emissions will also support reduced air pollutants. Other policies that will contribute to air quality improvements include:

### **Canadian Ambient Air Quality Standards (CAAQS):**

These standards drive air quality management across Canada and include standards for 2020 and 2025 for **nitrogen dioxide, sulphur dioxide, fine particulate matter and ozone**<sup>17</sup>.

### **BC Air Quality Objectives:**

BC has established air quality objectives for some pollutants, and in the case of fine particulate matter they are more stringent than the CAAQS<sup>18</sup>.

### **BC Air Regulations:**

The Province is responsible for controlling pollution from industry and businesses, primarily under the Environmental Management Act and Waste Discharge Regulation, as well as open burning (Open Burning Smoke Control Regulation) and woodstoves (Solid Fuel Burning Domestic Appliance Regulation).

### **Wood Stove Exchange Program:**

Approximately 9,000 wood stoves have been exchanged under this program since its inception in 2008, replacing old, smoky wood stoves for cleaner heating options including heat pumps, gas or pellet stoves and cleaner-burning wood stoves. This is offered locally through the Fraser Valley Regional District.

### **Code of Practice for Agricultural Environmental Management:**

This provincial regulation establishes various requirements for agricultural operations to protect air and water quality.

<sup>17</sup> [https://www.ccme.ca/en/current\\_priorities/air/caaqs.html](https://www.ccme.ca/en/current_priorities/air/caaqs.html)

<sup>18</sup> [https://www2.gov.bc.ca/assets/gov/environment/air-land-water/air/reports-pub/prov\\_aqo\\_fact\\_sheet.pdf](https://www2.gov.bc.ca/assets/gov/environment/air-land-water/air/reports-pub/prov_aqo_fact_sheet.pdf)