



City of Chilliwack

Corporate 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 Corporate Climate Action Plan puts forward a plan to rapidly reduce greenhouse gas emissions from the City of Chilliwack's corporate activities – cutting 50% of emissions from 2010 levels by 2030, and becoming a carbon neutral organization by 2050. This will be achieved by transitioning to an electric fleet, completing energy retrofits in City-owned facilities, ensuring new buildings and district energy use zero carbon energy sources, recovering resources wisely to minimize waste, and hosting zero waste City events.

Table of Contents

Plan Summary	ii
Table of Contents	iii
1. Background	4
1.1 Purpose of this Corporate Climate Action Plan.....	4
1.2 Climate Change Globally, and in the City of Chilliwack	4
1.3 GHG emissions from corporate operations.....	4
1.4 Climate Action Plan Development Process	6
2. A Path Forward.....	7
2.1 Business as usual.....	7
2.2 Targets	8
2.3 Corporate Action Areas.....	9
2.3.1 Fleet.....	9
2.3.2 Facility Retrofits	11
2.3.3 New facilities and district energy	12
2.3.4 Resource recovery (waste management, wastewater treatment)	13
3. Implementation and monitoring.....	15
Appendix A: Modelled scenario assumptions	17

1. Background

1.1

PURPOSE OF THIS CORPORATE CLIMATE ACTION PLAN

The City of Chilliwack (the City) has identified climate change as a priority for action both at the corporate and community level. The City retained Pinna Sustainability to support a process whereby background information and context was gathered, input was received from City staff, stakeholders and the public, and two climate action plans were developed – one focused on corporate operations (this plan) and one focused on community-scale activities.

This document provides a baseline greenhouse gas (GHG) emissions assessment of corporate activities, a set of targets for reducing GHG emissions from these activities, and a prioritized list of policies and practices to reduce emissions that are to be implemented by the City. The Community Climate Action Plan is a separate document that focuses on addressing GHG emissions in Chilliwack associated with transportation, buildings, waste and the management of natural areas.

1.2

CLIMATE CHANGE GLOBALLY, AND IN THE CITY OF CHILLIWACK

When Canada signed the Paris Agreement in 2015, the Federal government committed alongside other countries to keep global warming below 2°C, and as close to 1.5°C as possible. 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 tourism¹.

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. These changes will have major impacts on the City's corporate owned assets and may affect the conditions in which they operate, some that would not have been predicted when initially designed.

Recognizing the urgency to act, Canada, the province of BC, and many other jurisdictions have established GHG emission reduction targets aligned with the goal to keep global temperatures below a 1.5°C increase—that is, targeting to reduce emissions 40 to 45% by 2030, from 2007 levels, and to reach net-zero emissions by 2050. Addressing climate change by rapidly reducing the amount of GHG emissions from municipal operations is an essential component of these larger targets. Canada's climate plan calls on the public sector to play an important role by (1) setting ambitious targets; (2) cutting emissions from government buildings and fleets; and (3) scaling up clean procurement². Defining and implementing this Corporate Climate Action Plan is an opportunity for the City to lead the community in the transition towards becoming carbon neutral.

1.3

GHG EMISSIONS FROM CORPORATE OPERATIONS

The City purchases fuel, electricity and contracted services in order to provide the community with a

variety of services, including emergency services (fire, policy, emergency preparedness), waste management

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

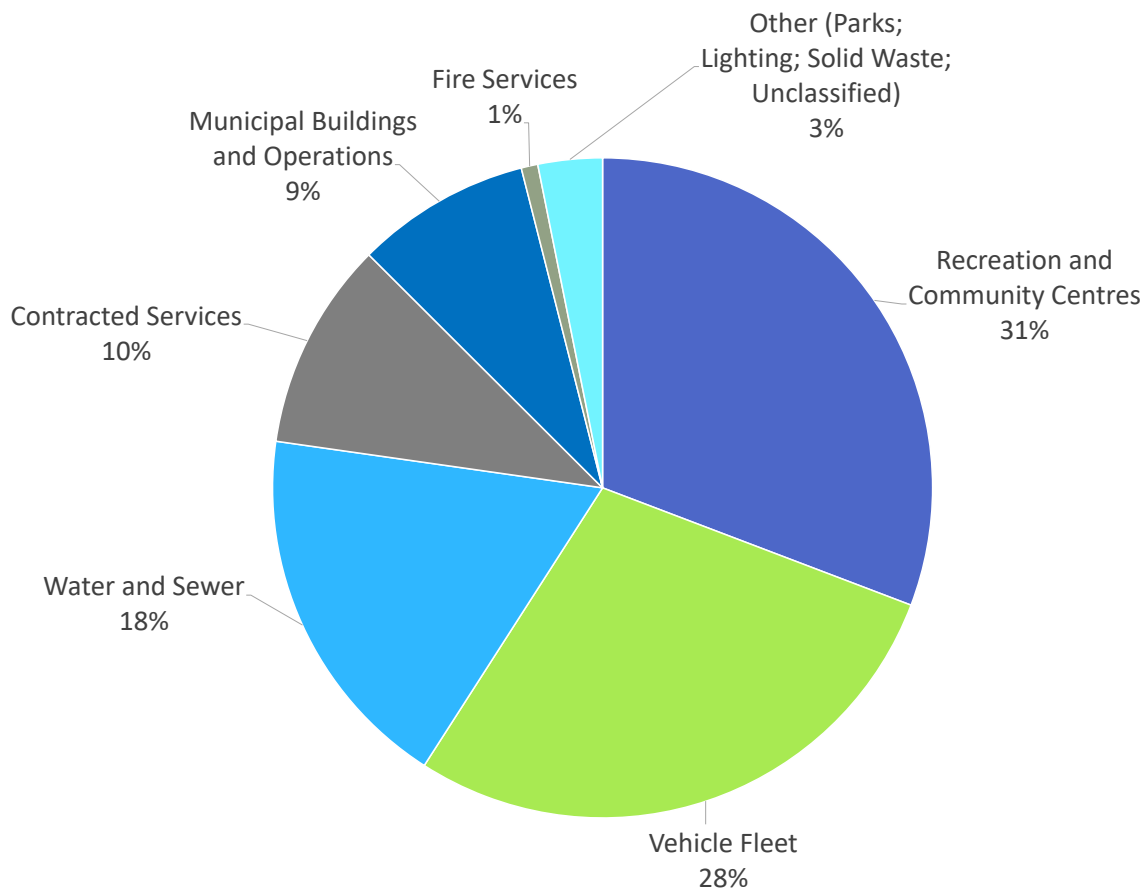
2 Pan-Canadian Framework on Clean Growth and Climate Change—<https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework.html>

(garbage, green waste), development planning and approval, recreation, parks and trails management, maintenance of roads and sidewalks, and many more. As a signatory of the provincial Climate Action Charter, the City has been tracking and reporting GHG emissions from City operations on an annual basis since 2010.

In 2019, City operations resulted in approximately 5,190 tonnes of CO₂e emissions³, approximately 1.3% of the community-scale GHG emissions. 2019 emissions

were relatively stable with 2010 emissions. Numerous initiatives have been carried out to reduce energy consumption and GHG emissions, but these efforts have been counteracted by increases/expansions to the City’s fleet, facilities, other infrastructure and equipment to service our rapidly growing community. The largest sources of GHG emissions in 2019 were the recreation facilities and community centres (31%), followed by the vehicle fleet (27%)—see Figure 1 and Table 1.

Figure 1. Chilliwack Corporate Emissions, 2019



³ Not included in this assessment because they are not with the City’s jurisdiction, includes: emissions from the BC Ambulance buildings and the RCMP building. In addition, the City is responsible for only 37% of the emissions of Fire Hall No. 1 downtown / Fraser Valley Regional District office, the remaining emissions are accounted for by the regional district.

Table 1. Chilliwack Corporate Emissions, 2019

Department	GHG Emissions (t CO₂e)	GHG Emissions Split (%)
Recreation and Community Centres	1,600	31%
Vehicle Fleet	1,470	27%
Water and Sewer	940	18%
Contracted Services	530	10%
Municipal Buildings and Operations	440	9%
Fire Services	40	1%
Other (Parks; Lighting; Solid Waste; Unclassified)	160	3%
Total	5,190	

1.4 CLIMATE ACTION PLAN DEVELOPMENT PROCESS

This Corporate Climate Action Plan was developed in tandem with the Community Climate Action Plan. While this plan focuses on corporate operations directly in the City’s control, the Community Climate Action Plan focuses on City efforts that influence activities affecting GHG emissions from buildings, transportation, waste management, and the management of our natural areas

across the community. Both plans were developed by an experienced project team including Pinna Sustainability and members of the Engineering team at the City, with input from staff in several departments.

2. A Path Forward

What will it take for the City to make a rapid transition to become a zero-emission organization? This section charts a path forward, identifying goals, objectives and actions in five key areas: fleet, existing facilities, new facilities and district energy, and resource recovery.

2.1 BUSINESS AS USUAL

Based on projections, Chilliwack is expected to see continued significant population growth, growing to 132,000 by 2040⁴. In order to maintain or enhance service levels for this growing population, the City will need to continue to expand its programs, facilities, infrastructure and other services.

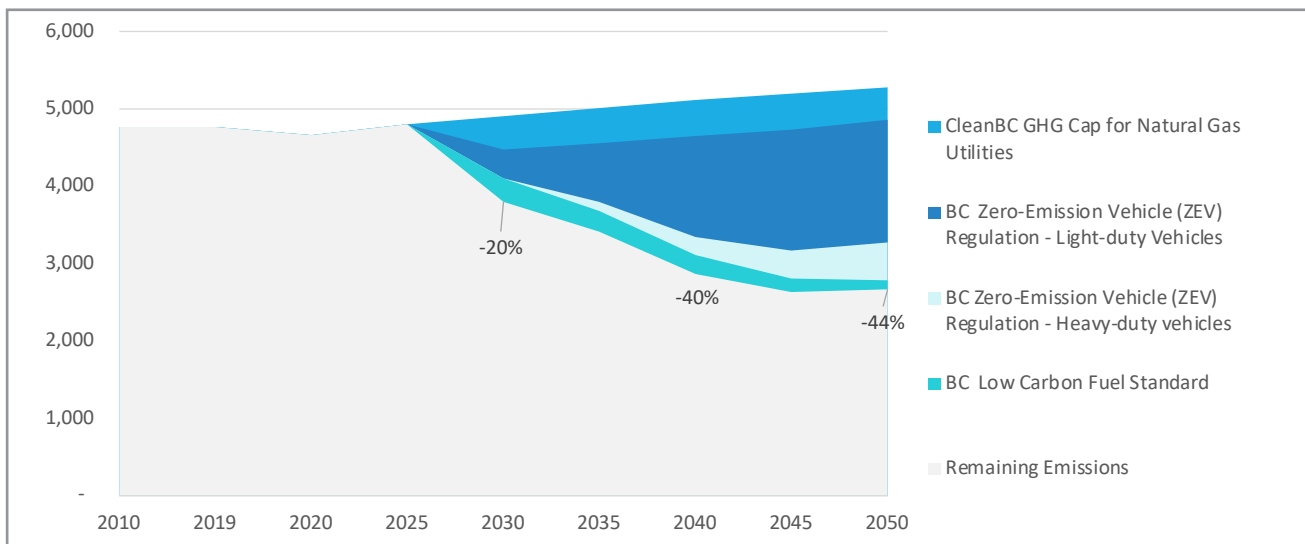
A business-as-usual scenario was developed to estimate the amount of emissions that may result over time when this growth is considered. This scenario assumes that provincial and federal governments implement the policies and regulations outlined in

The path looks at what outcomes are needed over the next two to three decades, while the objectives and actions are focused on concrete initiatives that will happen by 2030, focusing on the next five years.

existing policy, and that no further action is taken by the City. Figure 2 depicts the potential emission profile in the City’s corporate operations for business-as-usual. Based on this assessment, the City’s corporate emissions are expected to decrease over time by approximately 20% by 2030, and by 44% by 2050, relative to 2010. See Appendix A for a list of scenario assumptions.

Despite shifting into a downward emissions trend in this scenario, the shift is not rapid or significant enough to align with the global, federal and provincial targets to reduce the impacts of climate change.

Figure 2. City of Chilliwack Corporate GHG Emissions – Business as usual



Note: Percent changes are shown relative to 2010. Emissions from contracted services are included. Contracted services were not quantified in 2010, and thus they have been set to 2019 values for comparability.

4 2040 Official Community Plan – City of Chilliwack

2.2 TARGETS

This Corporate Climate Action Plan sets out an updated target to:

Reduce GHG emissions from Chilliwack’s corporate activities 50% from 2010 levels by 2030, and to become a carbon neutral organization by 2050.

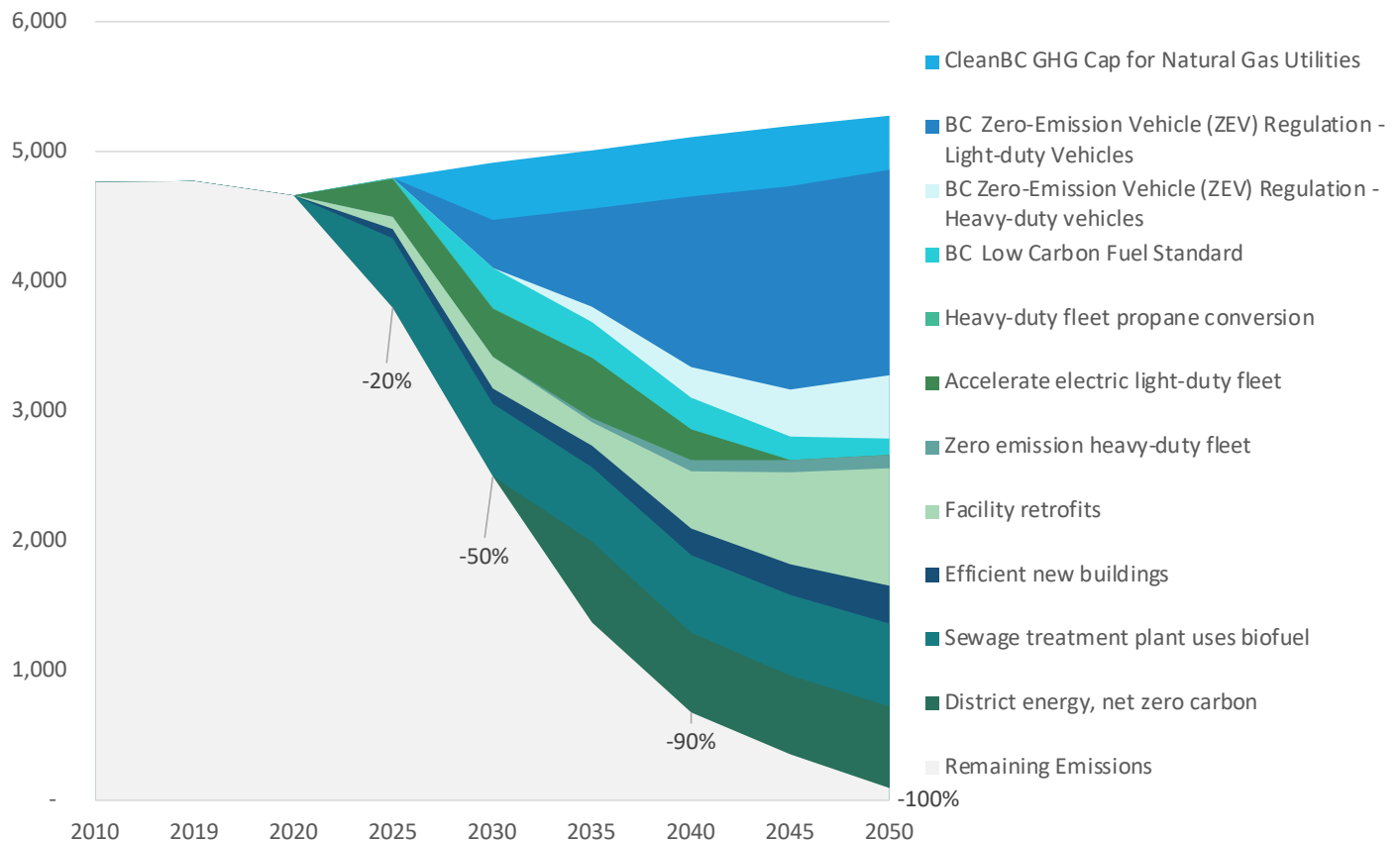
The following scenario highlights one pathway to achieve 50% by 2030 and become a carbon neutral organization by 2050. This scenario requires actions and choices made by the City to substantially reduce our emissions, including:

- 100% electric light-duty fleet purchases by 2030
- 100% zero emission heavy-duty fleet phase in between 2030 and 2050

- 1 to 2 major facility retrofits every year, with conversion to heat pumps as feasible
- New buildings are zero carbon
- District energy provides zero carbon heating (as applicable)
- Sewage biogas, landfill methane gas, and collected organics are used as resources by 2030, as feasible
- City events are zero waste

Figure 3 shows the potential emission pathway for the City’s corporate operations with the implementation of additional City initiatives on top of the business-as-usual assumptions.

Figure 3. City of Chilliwack Corporate GHG emissions – Carbon neutral scenario



2.3 CORPORATE ACTION AREAS

2.3.1 FLEET



The City operates a fleet of vehicles in order to conduct City business and provide the community with many services. Currently, the vehicle fleet accounts for 27% of corporate emissions. Electric light-duty vehicles are increasingly available and cost-effective over the vehicle lifetime, despite higher purchase costs⁵.

Heavy-duty electric trucks are rapidly developing, though in many cases are not fully commercially available yet. Some municipal applications, such as waste collection, are rapidly emerging opportunities for electrification—truck manufacturers are being driven to transition to electric trucks by government policies and large fleet owners. In addition to reducing emissions, electric garbage trucks will offer quieter streets⁶ and reduce air quality pollutants. Generally, these vehicles will have higher capital costs, as well as charging infrastructure costs, but significantly lower operating

costs. Fuel cell technology may be relevant for activities that involve heavy loads, long distances, and back-to-back operator shifts.

While electric vehicles continue to develop, renewable fuels may play an important interim role. “Drop-in” renewable fuels can be used interchangeably with conventional diesel or natural gas fuels and are currently available in limited quantities at higher cost. Supply is expected to increase over the coming decade. The proposed increase in Canada’s carbon tax will contribute to reduced cost relative to conventional diesel fuel.

Goal: Rapidly accelerate adoption of zero emissions fleet vehicles and fuels

Objectives:

- By 2030, 100% of the City’s light-duty fleet purchases will be electric
- 100% zero emission heavy-duty fleet phase in 2030-2050

What is already happening:

- By 2021, the City had already installed four public charging stations within the City of Chilliwack, and in 2022, the City approved the purchase of 20 new electric charging stations in six locations throughout Chilliwack.
- The City purchased five hybrid and one electric fleet vehicle.
- The City completed a propane conversion project for larger and heavier-duty vehicles.
- Most waste collection vehicles for the Curbside Collection Program run on compressed natural gas.

⁵ BC Hydro – Power smart – <https://electricvehicles.bchydro.com/learn/costs-of-electric-vehicles>

⁶ Preparing for the Future of Electric Garbage Trucks – <https://www.mswmanagement.com/collection/collection-vehicles/article/21213526/preparing-for-the-future-of-electric-garbage-trucks>

ACTIONS:

ACTION: Investigate opportunities to use fuels with higher renewable content and/or lower GHG emissions in fleet vehicles over the short term.

RESPONSIBLE DEPARTMENT / CHAMPION: Operations

RESOURCE REQUIREMENTS: Staff time to reach out to fuel suppliers and negotiate purchase agreements. Potential collaboration or involvement with collective purchasing groups.

TIMEFRAME: Short (2023)

KEY PERFORMANCE INDICATOR: GHG emissions generated from fleet vehicles.

ACTION: Incorporate low carbon requirements into the next procurement process for waste collection.

RESPONSIBLE DEPARTMENT / CHAMPION: Engineering

RESOURCE REQUIREMENTS: Staff time to identify RFP language, or potential RFI process to inform the requirements.

TIMEFRAME: Medium (2024-2027)

KEY PERFORMANCE INDICATOR: GHG emissions generated from waste collection service.

ACTION: Replace all light-duty fleet vehicles to electric at time of renewal.

RESPONSIBLE DEPARTMENT / CHAMPION: Operations

RESOURCE REQUIREMENTS: Increased capital investment per vehicle (approximately \$45,000), for a total replacement cost of \$12 to \$15 million for EV, relative to \$6 to 7 million for internal combustion engine vehicles. Reduced operating costs anticipated to payback the additional vehicle capital cost. Refer to separate action for associated infrastructure investment.

TIMEFRAME: Long (2023-2032)

KEY PERFORMANCE INDICATOR: Percent of light-duty fleet vehicles that are electric.

ACTION: Develop an “electric first” policy to evaluate and prioritize electric options for all new fleet purchases.

RESPONSIBLE DEPARTMENT / CHAMPION: Operations

RESOURCE REQUIREMENTS: 0.10 FTE staff time to establish a policy and to research options for new vehicle purchases, including monitoring medium and heavy-duty trials at other municipalities.

TIMEFRAME: Short (2023-2026)

KEY PERFORMANCE INDICATOR: Percent of all fleet vehicles that are electric.

ACTION: Evaluate and install EV charging infrastructure to support fleet transition plans.

RESPONSIBLE DEPARTMENT / CHAMPION: Operations

RESOURCE REQUIREMENTS: Apply for BC Hydro incentive program to support preparation of an EV Ready fleet and infrastructure plan that evaluates fleet charging needs over time and identifies immediate charging requirements. Costs to install EV chargers at City facilities may be in the range of \$1 million/year for 10 years. The infrastructure plan will provide access to further incentives (e.g., BC Hydro fill fund up to 50% of infrastructure costs outlined in the EV Ready fleet plan).

TIMEFRAME: Long (2023-2032)

KEY PERFORMANCE INDICATOR: Number of fleet charging stations installed.

ACTION: Evaluate feasibility of using e-bikes to replace some staff vehicle trips, and engage with staff to pilot a program.

RESPONSIBLE DEPARTMENT / CHAMPION: Operations / Engineering

RESOURCE REQUIREMENTS: Staff time for planning, coordination; ~\$4,000 to purchase an e-bike for the pilot program.

TIMEFRAME: Short (2023-2026)

KEY PERFORMANCE INDICATOR: Number of kilometres by e-bike.

2.3.2 FACILITY RETROFITS



The City of Chilliwack owns and operates several buildings, ranging from large recreation centres with pools and ice rinks, to small park buildings. The energy used at these facilities results in 40% of the City's corporate GHG emissions. The City's facilities that produce the most GHG emissions include: Sewage Treatment Plant, Chilliwack Landing Leisure Centre,

Cheam Leisure Centre, Operations Centre, and Municipal Hall.

Opportunities to substantially reduce emissions from existing facilities will vary, depending on the building age, size, use, and the age of the assets (boilers, etc.). Transitioning existing facilities toward zero emissions operation will involve a combination of significant energy efficiency upgrades (typical potential to reduce energy use 25-40%), together with fuel-switching (ideally to electric heat pumps where feasible). For facilities with very high heat loads (e.g. pools), renewable natural gas may be an alternative if heat pump technology is not sufficient. In some cases, facility replacement may be a preferred option where the asset has reached the end of its life. Careful assessment and planning will be needed to chart the path forward for these retrofits.

Goal: Net-zero emission municipal buildings

Objectives:

- 1 to 2 major facility retrofits every year, including conversion to heat pumps as feasible

What is already happening:

- The City is currently working on a City Hall expansion which includes a 20,000 square foot expansion. This incorporates energy efficiency measures from Step 3 of the BC Energy Step Code.

- The City is working on a waste heat capture project for the Chilliwack Landing Leisure Centre pool. This project is estimated to decrease GHG emissions by 550 tonnes per year and was partially funded through a grant from CleanBC. The total project cost is \$700,000.
- The City identifies opportunities for energy efficiency upgrades as equipment needs replacement and upgrading (e.g. switching to LED lighting, installing heat pumps).

ACTIONS:

ACTION: Establish a corporate energy manager position to conduct facility energy studies and strategically move forward initiatives.

RESPONSIBLE DEPARTMENT / CHAMPION: Recreation and Culture

RESOURCE REQUIREMENTS: Co-funding for staff position may be available from BC Hydro or FortisBC.

TIMEFRAME: Short (2023)

KEY PERFORMANCE INDICATOR: Staff position hired

ACTION: Conduct facility energy assessments to identify retrofit opportunities and timelines for all major facilities, and integrate into capital planning process.

RESPONSIBLE DEPARTMENT / CHAMPION: Recreation and Culture

RESOURCE REQUIREMENTS: Staff time to manage study; Consultant fees to undertake assessment.

TIMEFRAME: Short (2023-2026)

KEY PERFORMANCE INDICATOR: Major facility retrofits are incorporated into capital plans.

2.3.3 NEW FACILITIES AND INFRASTRUCTURE



Procurement of new facilities provides an opportunity to build net-zero energy from the outset. Buildings last for decades. New development is the most cost-effective way to reduce the overall GHG emissions from buildings, while avoiding investing in infrastructure that is likely to be “stranded” over the coming decades. Currently, the City is planning to build one new recreation facility in the next ten years.

The Province has committed to updating the BC Building Code to require that all new buildings are zero carbon by 2030. The Province, and many local governments, are already starting to design and build to this standard—demonstrating that it is possible, and charting the course for all other buildings to follow suit over the coming years. In Surrey, the Clayton Community Centre recently opened, a facility that uses 90% less energy and was built to Step 5 in the BC Building Code⁷.

Based on analysis conducted for the Province, net-zero ready design can be achieved in public sector buildings with incremental additional capital cost to the project. However, significant operational cost savings are realized over the lifetime of the facility (including libraries and recreation centres without a pool)⁸.

The Provincial government has a goal to have all new government facilities use 100% clean energy starting in 2022. Further, through a commitment in the CleanBC Roadmap to 2030, the Province will require that all government procurement, spending and funding will be screened for climate outcomes, and they will establish zero carbon requirements for new public sector buildings by 2027, beginning with performance standards in 2023⁹.

Goal: Zero carbon new buildings and infrastructure

Objectives:

- New buildings and infrastructure are zero carbon
- District energy provides zero carbon heating (as applicable)

What is already happening:

- In 2012, the City of Chilliwack worked with consultants to conduct a planning study to identify opportunities for integrating energy systems among City-owned, Provincial and other facilities and buildings in the Chilliwack Landing Leisure Centre Neighbourhood.
- In 2020, City Council approved a budget to begin converting the City’s existing streetlights to LED. The benefits of this program will be a reduction in maintenance and energy consumption. As of March 2022, 1,200 of 2,800 high pressure sodium fixtures have been retrofitted to LED.
- Continued working with the BC Ministry of Forests to obtain groundwater licenses for the two groundwater drinking water wells installed in 2016 in the Marble Hill area in the Eastern Hillside to reduce energy consumption for pumping water from the valley floor to the higher elevations. Continuous pumping was not possible due to non-approval of groundwater licenses from the Province.
- Commenced groundwater exploration program to find high quality groundwater in the Eastern Hillside Area to reduce energy consumption for pumping water from the valley floor to the higher elevations.

⁷ <https://www.surreynowleader.com/home/city-of-surrey-to-officially-open-the-clayton-community-centre/>

⁸ http://energystepcode.ca/app/uploads/sites/257/2019/07/BC-Step-Code-Public-Sector-Buildings-Report-rev2_1.pdf

⁹ <https://www2.gov.bc.ca/gov/content/environment/climate-change/clean-buildings>

ACTIONS:

ACTION: Develop a net-zero carbon policy for all new City facilities in 2025 and beyond.

RESPONSIBLE DEPARTMENT / CHAMPION: Recreation and Culture / Engineering

RESOURCE REQUIREMENTS: Staff time or consultant to research and develop policy

TIMEFRAME: Short (2023-2026)

KEY PERFORMANCE INDICATOR: Development and implementation of policy.

ACTION: Advance assessment for a district energy system in the Chilliwack Landing area, including feasibility assessment and engagement with potential partners.

RESPONSIBLE DEPARTMENT / CHAMPION: Engineering

RESOURCE REQUIREMENTS: Staff time to coordinate planning and engage with partners to establish an MOU; consulting fees for feasibility study.

TIMEFRAME: Medium (2024-2027)

KEY PERFORMANCE INDICATOR: MOU with partners in place; feasibility assessment completed.

2.3.4

RESOURCE RECOVERY (WASTE MANAGEMENT, WASTEWATER TREATMENT)



The City is responsible for waste management, including landfill operations and management of collected organic waste, as well as the collection, treatment and residual disposal of wastewater. These waste streams can also be an opportunity, as they are potential sources of energy or nutrients that have value for use in other purposes.

The City of Surrey biofuel facility provides an example of resource recovery where collected organic waste from the community is processed through an anaerobic digester to create high quality compost, and the gases produced during that process are captured, refined and pumped into the FortisBC natural gas network for sale as renewable natural gas¹⁰.

Goal: Waste streams are recovered for highest and best use

¹⁰ <https://www.surrey.ca/services-payments/waste-collection/surrey-biofuel-facility>

Objectives:

- Sewage biogas, landfill methane gas, and collected organics are used as resources by 2030, as feasible
- City events are zero waste

What is already happening:

- Completed installation of a stand-alone biogas heating system to run the industrial high strength wastewater pre-treatment facility at the WWTP. Working on increasing gas production at the pre-treatment facility to facilitate beneficial use.

- Completed a Biogas Feasibility Study at the WWTP to evaluate options to upgrade biogas to biomethane and ultimately sell it to FortisBC. Planning to complete a Business Case Analysis to determine the most suitable option to deal with excess biogas at the WWTP.
- Received funding from Infrastructure Canada to design and construct an Organic Food Waste Receiving and Pre-Processing Station & Digester #4 at the WWTP.
- Landfill gas is captured at the Bailey Sanitary Landfill. Landfill gas management and community waste reduction efforts are covered under the Community Climate Action Plan.

ACTIONS:

ACTION: Pursue the conversion of biogas to be suitable for the FortisBC grid.

RESPONSIBLE DEPARTMENT / CHAMPION: Engineering

RESOURCE REQUIREMENTS: Staff time to research options, manage infrastructure upgrades and ongoing operation. Financing for capital upgrades will be required.

TIMEFRAME: Long (2028-2032)

KEY PERFORMANCE INDICATOR: Quantity of gas sold to FortisBC; reduction in quantity of biogas flared.

ACTION: Carry out WWTP infrastructure upgrades to improve biogas capture.

RESPONSIBLE DEPARTMENT / CHAMPION: Engineering

RESOURCE REQUIREMENTS: \$5.41 million, as allocated in CMP, and staff time to plan and coordinate work.

TIMEFRAME: Medium (2026-2028)

KEY PERFORMANCE INDICATOR: Quantity of gas captured.

ACTION: Develop a zero-waste procurement policy for City facilities and City events.

RESPONSIBLE DEPARTMENT / CHAMPION: Engineering

RESOURCE REQUIREMENTS: Staff time or consultant fees to develop a new policy

TIMEFRAME: Short (2023-2026)

KEY PERFORMANCE INDICATOR: Policy developed and implemented.

3. Implementation and monitoring

This Corporate Climate Action Plan focuses on the efforts the City of Chilliwack can take to help its corporate operations to transition to a zero-carbon organization.

The Corporate 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:
Fleet				
Investigate opportunities to use higher renewable content / low GHG emissions fuels in fleet vehicles	Operations	Staff time	Short (2023)	GHG emissions generated from fleet vehicles.
Incorporate low carbon requirements into the next procurement process for waste collection	Engineering	Staff time	Medium (2024-2027)	GHG emissions generated from waste collection service
Replace all light-duty fleet vehicles to electric at time of renewal	Operations	\$12 - 15 million for EV, relative to \$6-7 for internal combustion vehicles	Long (2023-2032)	Percent of light-duty fleet vehicles that are electric.
Develop an “electric first” policy to evaluate and prioritize electric options for all new fleet purchases	Operations	0.10 FTE	Short (2023-2026)	Percent of all fleet vehicles that are electric.
Evaluate and install EV charging infrastructure to support fleet transition plans	Operations	Funding for a study to evaluate; Estimated ~\$1 million / year for 10 years for EV charging infrastructure	Long (2023-2032)	Number of fleet charging stations installed.
Evaluate feasibility of using e-bikes to replace some staff vehicle trips, and engage with staff to pilot a program	Operations / Engineering	Staff time	Short (2023-2026)	Number of kilometres by e-bike.

Action:	Responsible Department/ Champion:	Resource Requirements:	Timeframe:	Key Performance Indicators:
FACILITY RETROFITS				
Establish a corporate energy manager position	Recreation and Culture	Co-funding for staff position	Short (2023)	Staff position hired.
Conduct facility energy assessments and integrate into capital planning process	Recreation and Culture	Staff time; consultant fees	Short (2023-2026)	Major facility retrofits are incorporated into capital plans.
NEW FACILITIES AND DISTRICT ENERGY				
Develop a net-zero carbon policy for all new City facilities in 2025 and beyond	Recreation and Culture / Engineering	Staff time or consultant fees	Short (2023-2026)	Development and implementation of policy.
Advance assessment for a district energy system in the Chilliwack Landing area	Engineering	Staff time; consultant fees	Medium (2024-2027)	MOU with partners in place; feasibility assessment completed.
RESOURCE RECOVERY (WASTE MANAGEMENT, WASTEWATER TREATMENT)				
Pursue the conversion of biogas to be suitable for the FortisBC grid	Engineering	Staff time; financing for capital upgrades	Long (2028-2032)	Quantity of gas sold to FortisBC; reduction in quantity of biogas flared.
Carry out WWTP infrastructure upgrades to improve biogas capture	Engineering	\$5.41 million (allocated in CMP); staff time	Medium (2026-2028)	Quantity of gas captured.
Develop a zero-waste procurement policy for City facilities and City events	Engineering	Staff time or consultant fees	Short (2023-2026)	Policy developed and implemented.

Appendix A:

Modelled scenario assumptions

Assumptions for the business-as-usual scenario include the following:

- The current municipal hall expansion will result in a 25% increase in both electricity and natural gas use for that facility.
- One new recreation facility equal to The Landing Sports Centre will be added by 2025.
- Fleet, Contracted Services and Facility energy consumption increases at a rate of 25% of projected population growth.
- Utilities and Solid Waste Management energy consumption increases at a rate of 50% of projected population growth.
- Due to CleanBC commitment, the natural gas supply has 15% renewable content by 2030 (reducing the carbon intensity of natural gas use).
- Due to B.C. Zero Emission Vehicle (ZEV) Regulation, light-duty vehicles will become ZEV by 2045 through end-of-life replacement, phasing in from 2030.
- Due to CleanBC commitment, heavy-duty vehicles will be replaced by ZEVs by 2050, phasing in from 2035.
- Due to B.C. Low Carbon Fuel Regulation: All gasoline and diesel fuel is 20% less carbon intensive by 2030, relative to 2009.