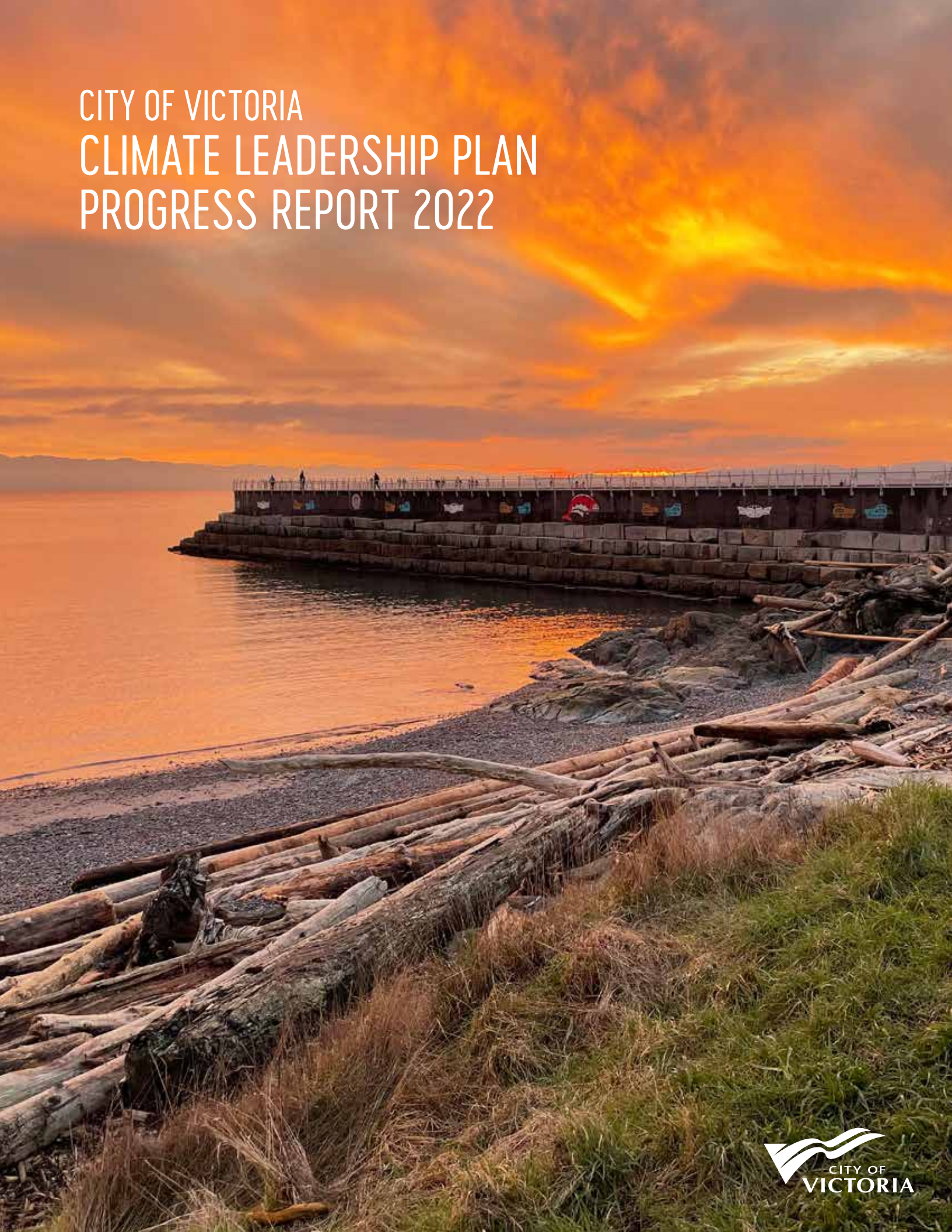
CITY OF VICTORIA

CLIMATE LEADERSHIP PLAN PROGRESS REPORT 2022



CITY OF VICTORIA

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The City of Victoria is located on the traditional territories of the Songhees and Esquimalt Nations.

Cover image by Brandon Williamson

INTRODUCTION

In 2018, the City of Victoria released the Climate Leadership Plan which identifies goals, targets and actions to reduce greenhouse gas emissions and respond to the impacts of climate change. Through the implementation of this plan, the City has provided resources, innovation and leadership to advance climate initiatives that aim to cut emissions and ensure the resilience of Victoria's vibrant community, but the City cannot do it alone. Achieving the Climate Leadership Plan targets will require active participation from all Victorians to transform the buildings that we live and work in, the way we move throughout the city and how we prepare for climate risks.

In October 2022, the United Nations Environment Programme released the 2022 Emissions Gap Report which indicated that without an urgent system-wide transformation, global greenhouse gas (GHG) emissions will not limit warming below two degrees Celsius as outlined in the Paris Agreement. Current policies and recent national commitments point to a 2.8 degrees Celsius temperature rise by the end of the century, leading to devastating impacts. Further, the Sixth Assessment Report from the Intergovernmental Panel on Climate Change finds that climate change has already pushed our systems beyond their ability to adapt and delivers a dire warning about the consequences of inaction. These are urgent messages that, now more than ever, we need to significantly limit GHG emissions, respond to the impacts that we are already experiencing and effectively plan for future risks.

To provide an update on how the City has progressed the goals, targets and actions of all five sectors in the Climate Leadership Plan (CLP), the City produces Progress Reports every two years. This report is the second CLP Progress Report; the first was released in 2020, two years after the release of the CLP. In 2019, the City acknowledged the threat of climate change to the community by declaring a climate emergency, recognizing that previous efforts to limit the risks and impacts were insufficient. In response, the City identified six High Impact Initiatives (HIIs) that had the potential to achieve rapid community wide emissions reductions. Since 2019, the City has taken significant steps to implement the HIIs which are identified in the sector sections of this report. However, further action and increased momentum is required to meet the City's emissions reduction targets and ensure that Victoria is resilient to the current and future impacts of climate change.

Camas in bloom at Beacon Hill Park

COMMUNITY EMISSIONS & TARGETS

As outlined in the Climate Leadership Plan, the City of Victoria has committed to achieving an 80 per cent reduction in community greenhouse gas emissions compared to 2007 levels and a shift to 100 per cent renewable energy by 2050. To effectively create a baseline for emissions reduction strategies, community wide greenhouse gas inventories are produced annually that report on emissions from activities such as transportation, buildings and waste. In 2021, community wide greenhouse gas emissions were approximately 314,000 tonnes of carbon dioxide equivalent [1], a 24 per cent reduction from 2007 levels.

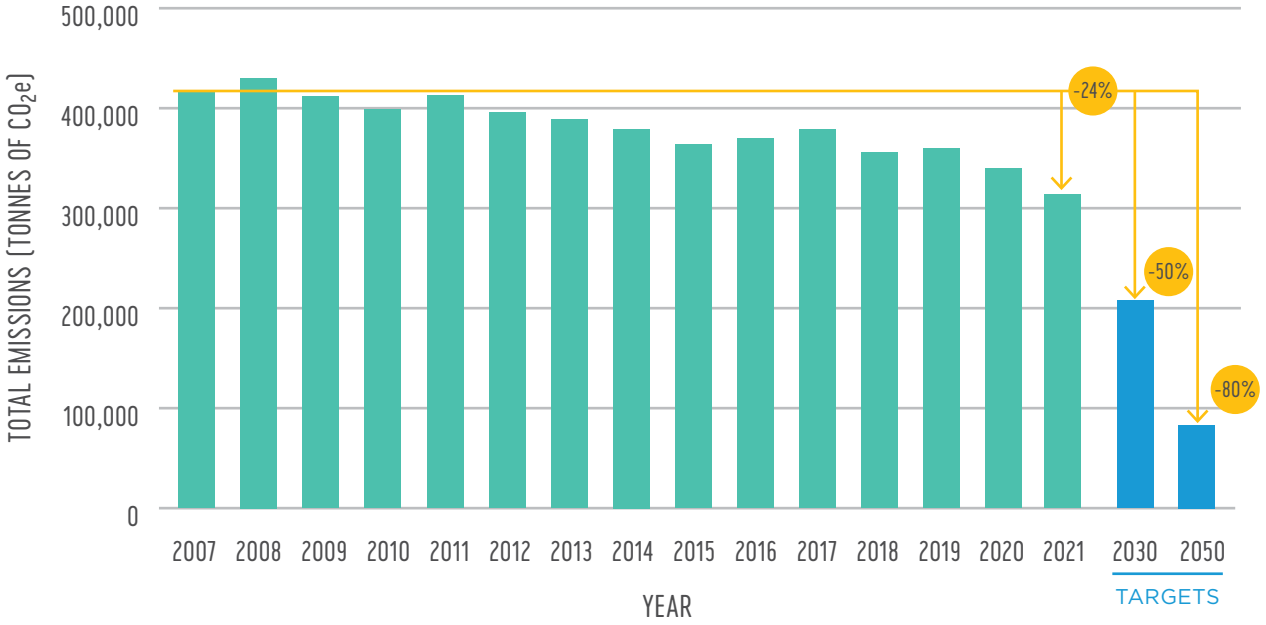
Municipal governments are fundamental to achieving GHG emission reductions as they have significant influence on development and land-use decisions that shape the pattern of energy use within communities. To achieve long-term and cost-effective emission reductions, municipalities must first understand the sources of community GHG emissions. To do this, the City hires a third-party consultant to complete community GHG inventories every year that follow two common standards: the Community Energy and Emissions Inventory (CEEI) and the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC Basic+). The data used in this report is from the 2021 CEEI aligned inventory and is the baseline reporting standard for most municipalities in British Columbia. The GPC Basic+ inventory is a global reporting standard that the City uses to report community GHG emissions annually to CDP (formerly the Carbon Disclosure Project) which is a requirement for the City as a signatory to the Global Covenant of Mayors.

1 Carbon dioxide equivalent (CO_2e) is a term used as a comparison of the relative climate impact of different GHGs which have varying global warming potentials (GWPs). CO_2e takes into account not only the amount of carbon dioxide (CO_2) emitted, but also the emissions of other GHGs, such as methane and nitrous oxide. These gases are converted to CO_2 equivalents using their GWPs and the total emissions are expressed in terms of the amount of CO_2 that would have the same warming effect.

Inner Harbour during sunset

The figure below shows Victoria's progress in reducing community GHG emissions since 2007.[2] The long-term trend shows that as of 2021, community emissions have dropped by approximately 24 per cent since 2007, however, this rate of reduction needs to be much greater to put Victoria on track to meet the GHG emissions reduction targets in the CLP. It should be noted that the COVID-19 pandemic has played a role in the reduction of GHGs over the last two years with marked changes in how people moved throughout the city, purchased goods and accessed services. Some of the changes observed during the pandemic and the resulting emissions reductions may be temporary as they do not reflect structural changes in economic, transport or energy systems.

COMMUNITY GHG EMISSIONS



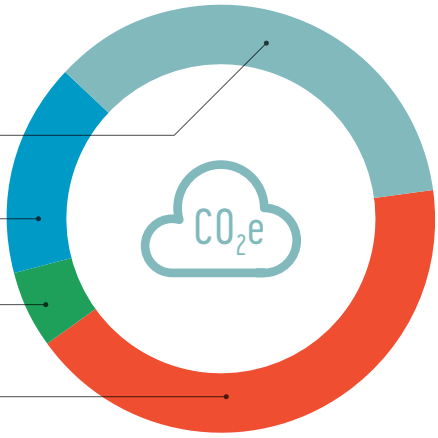
The top factors contributing to the decrease in community emissions observed in 2021 include a reduction in emissions from heating oil, gasoline used for vehicles, the production of electricity as reported by the Province and from the landfill as reported by the Capital Regional District (CRD). As the latter two factors include changes in how emissions are measured[3], it is likely that the associated reduction in emissions can not be attributed to mitigation actions taken in 2021.

2 Yearly emissions figures have changed slightly from those in the CLP due to emissions updates of the 2007 baseline year. This type of update is a common practice to ensure that figures remain comparable year to year and as accurate as possible. There is a minor increase in most of the previous years' emissions due to a discontinued source of transportation information and switching to a more consistent source of building energy consumption data.

3 The Province recently updated the approach used to calculate the emissions associated with electricity supply; previously, the GHG intensity of electricity was calculated based on all imported electricity rather than the portion required for domestic consumption. Additionally, the CRD raised the estimate of the Hartland landfill's gas capture rates which impacted the calculation of waste-related emissions resulting in an overall decrease in emissions from the sector.

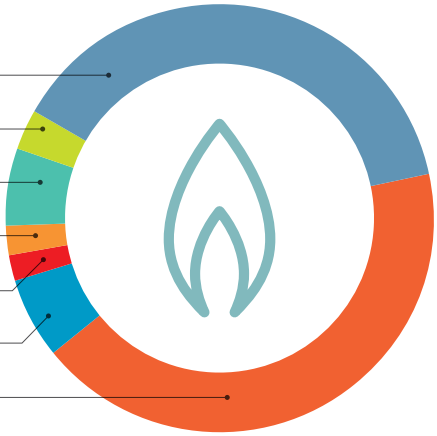
The following figures show the breakdown of the 2021 community GHG emissions in Victoria by sector and fuel type, and the distribution of renewable and non-renewable energy sources.

2021 EMISSIONS BY SECTOR (314,826 tCO_2e)



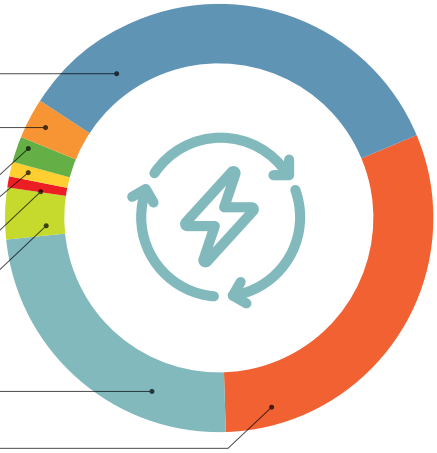
- 36% COMMERCIAL, INSTITUTIONAL, INDUSTRIAL AND MULTI-UNIT RESIDENTIAL
- 16% SINGLE FAMILY HOMES
- 6% SOLID AND LIQUID WASTE
- 42% ON-ROAD TRANSPORTATION

GHG EMISSIONS BY FUEL TYPE



- 38% GASOLINE
- 3% ELECTRICITY
- 6% DIESEL
- 2% WOOD
- 2% PROPANE
- 6% HEATING OIL
- 42% NATURAL GAS

CURRENT RENEWABLE AND NON-RENEWABLE ENERGY MIX



- 35% RENEWABLE ELECTRICITY
- 3% WOOD
- 2% BIODIESEL AND ETHANOL
- <1% RENEWABLE NATURAL GAS
- 1% NON-RENEWABLE ELECTRICITY
- 4% HEATING OIL AND PROPANE
- 24% GASOLINE AND DIESEL
- 31% NATURAL GAS

Transportation and buildings continue to be the largest sources of GHG emissions in Victoria. In the buildings sector, a significant reduction in the number of oil heated homes has led to an observable decrease in residential emissions with households switching to either natural gas, which burns with less emissions than oil, or to electric heat pumps which produce significantly fewer operating emissions than both oil and gas systems. Natural gas continues to be the most significant source of emissions from buildings with no discernible community decrease in natural gas emissions. In fact, new residential natural gas connections have continued to increase in Victoria.

In the transportation sector, both a reduction in regional fuel sales and the City's recent survey data on vehicle kilometres travelled suggest that Victorians have been driving less over the past couple of years. The 2021 Statistics Canada Census also found that 30 per cent of residents were working from home. However, the total number of registered vehicles has increased, and the average fuel efficiency of vehicles is declining as trends continue to shift towards larger vehicles such as SUVs and trucks. An update to the CRD Origin Destination Household Travel Survey, expected in 2023, will provide more insight into regional transportation related GHG emissions.

Due to a largely renewable electricity supply, approximately 40 per cent of all energy consumed in Victoria is from renewable sources; this has not changed since the release of the CLP. This can be partially attributed to the relatively inexpensive cost of fossil fuels. The switch to renewable energy will continue to be challenging and further programs will be required to encourage residents to make the switch to electric. With respect to non-renewable energy sources, the percentage of heating oil has decreased while the percentage of natural gas has increased. With the target of 100 per cent renewable energy use by 2050, there is still work to be done to ensure that the necessary infrastructure and regulatory environment is in place to support this transition.

Overall, the 2021 GHG inventory shows progress towards meeting the City's emissions reduction targets, but additional and enhanced measures are required. The City is now eight years and approximately 100,000 tC02e away from the interim 2030 target to reduce community GHG emissions by 50 per cent compared to 2007 levels. To meet this target, emissions reductions must be sustained at an average of 12,000 $tC0_2e$ per year, or three per cent per year over the next eight years. Achieving the 2030 and 2050 community GHG emissions targets will require bold action to overcome barriers and unlock opportunities for emissions reductions and will take a coordinated effort with the broader community.

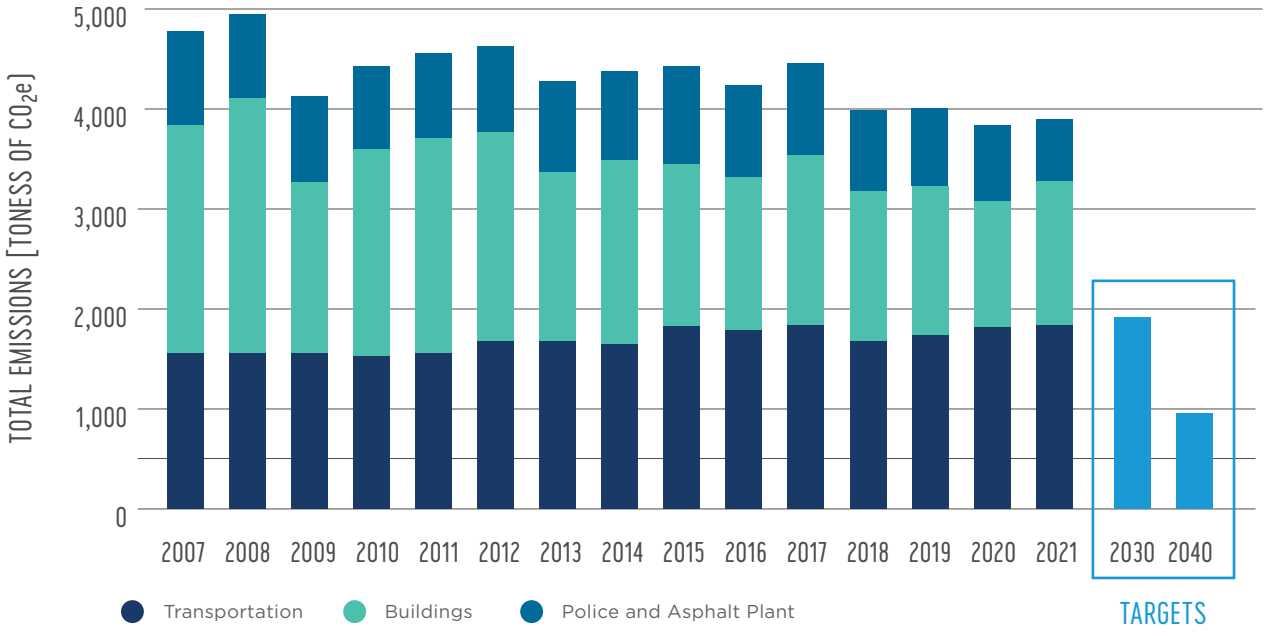
The Gorge Waterway at Jutland Road

CORPORATE EMISSIONS & TARGETS

Municipal operations refer to the activities and services provided by the City such as maintaining roads and infrastructure, garbage collection, managing parks and public spaces, providing emergency services and local government administration. The Climate Leadership Plan defines the City's role to lead by example and reduce greenhouse gas emissions from municipal operations by 60 per cent by 2030 and 80 per cent by 2040. Additionally, by 2040, all City facilities will be renewably powered and 80 per cent of the City fleet will be renewably powered.

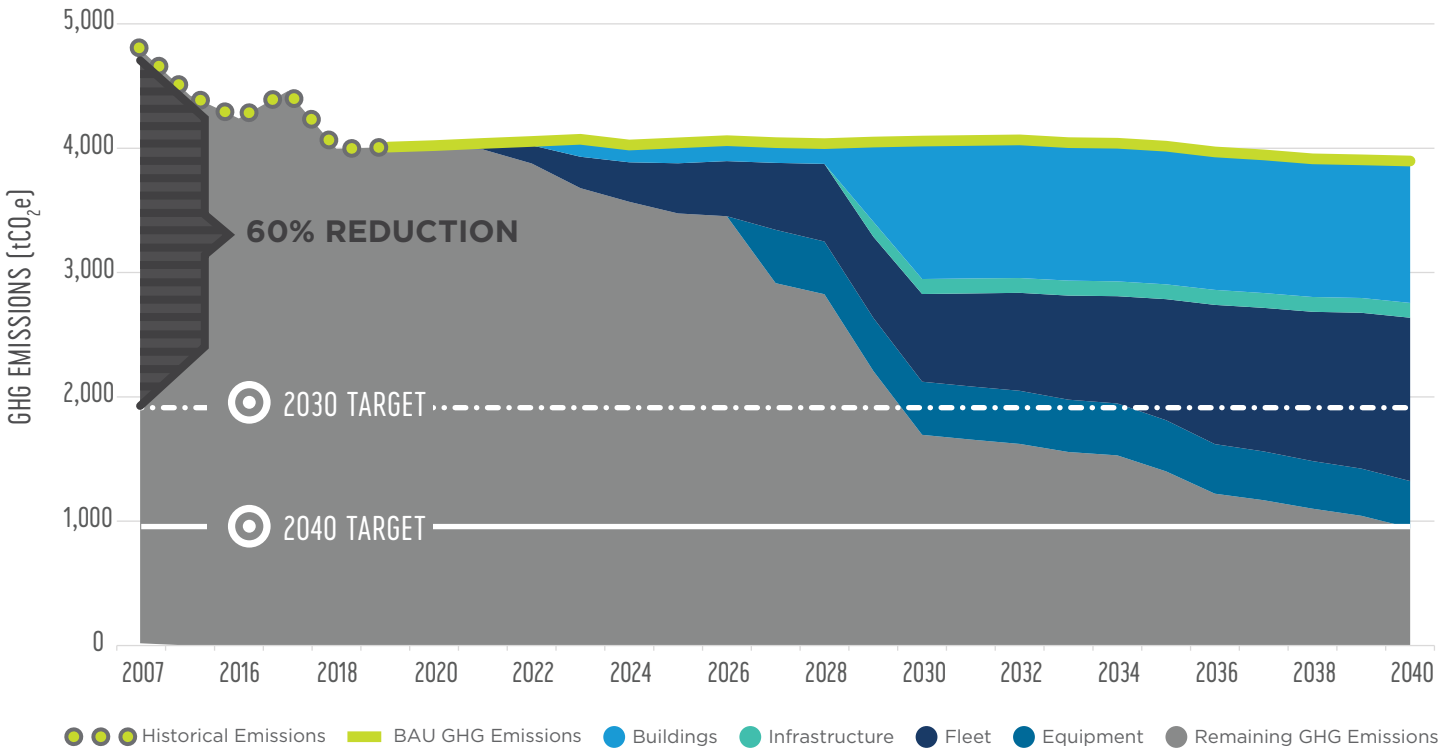
In September 2021, Council adopted the Corporate Energy and Emissions Management Plan (CEEMP) which is a corporate-wide, ten-year management plan that focuses exclusively on reducing energy consumption, making the switch to renewable energy and reducing GHG emissions resulting from the City's operations and service delivery to Victoria residents. Corporate emissions only account for about one per cent of total community emissions, but the City plays a vital role in enabling strong community action through policy and program development in addition to promoting emissions reductions throughout the community. The City has reduced its corporate GHG emissions by approximately 18 per cent since 2007 as shown in the figure below.

CORPORATE GHG EMISSIONS



The reduction in corporate emissions since 2007 can be attributed to fewer building assets, an electricity supply that has a lower GHG intensity, increased energy efficiency of facilities and recent HVAC upgrades at City Hall. This reduction is in line with the emissions pathway outlined in the CEEMP that is necessary to achieve the City's corporate targets. With the introduction of the CEEMP in 2021, the City decided to expand the corporate emissions inventory to include the operations of the Victoria Police Department and the City-owned asphalt plant. These emissions were previously out of scope for the reporting requirements of the provincial Climate Action Revenue Incentive Program (CARIP). In the 2021/2022 financial year, the CARIP was discontinued and was later replaced by the Local Government Climate Action Program. The City now calculates its corporate emissions for all the assets over which the City has operational control.

The CEEMP also identifies and measures emissions and sets reduction targets at the department level to guide corporate actions, enabling the City to prioritize and integrate energy and GHG emissions reduction programs throughout all municipal operations. The CEEMP utilized modeling to estimate future corporate emissions, scanned best practices by leading municipalities and consulted with City staff to identify a set of GHG reduction measures and develop a framework to track progress and support decision-making to reach the corporate targets set by the CLP.



In the figure above, both the 2030 and 2040 corporate targets are indicated with mitigation measures for varying aspects of City operations to meet them. Supplementary plans have also been prepared to guide certain aspects of the CEEMP, such as the Green Fleet Plan which analyzed the fuel consumption metrics of each City vehicle to identify and prioritize which assets would be suitable for replacement with electric options to meet the required emissions reductions. In 2023, a Green Buildings Plan will be finalized and provide further guidance on how to reduce emissions from City-owned facilities. Without such plans in place, the yellow line indicates how emissions might track under a 'business as usual' scenario.

The list below highlights examples of how the City has made progress to reduce GHG emissions and improve energy efficiency in corporate operations and service delivery.

Reduced annual electricity consumption by over 2,000 megawatt hours by upgrading 96 per cent of streetlights to LEDs, saving approximately $250,000 in utility bills annually

Executed a low carbon electrification project utilizing an electric boiler and heat pump technology for space heating at the City Hall campus, reducing over 60 tCO_2e annually

Upgraded City-owned parkades and corporate offices to LED lighting, reducing annual corporate emissions by 10 tCO_2e and saving approximately $120,000 in utility bills annually

Executed continuous optimization projects to improve the energy efficiency of building systems at various City facilities, saving approximately $20,000 in utility bills annually

Identified and initiated energy improvement projects for City-owned facilities that are estimated to reduce corporate emissions by 30 tCO_2e and save approximately $30,000 in utility bills annually

Developed and adopted the City's Green Fleet Plan which established new fleet procurement practices promoting the purchase of electric vehicles to replace existing internal combustion engine vehicles, reducing emissions from the City fleet by 707 tCO_2e by 2030

As of December 2022, the City owns and operates 20 electric vehicles (EVs) and eight hybrid vehicles - the City anticipates the delivery of 20 EVs in 2023, bringing numbers in line with the targets outlined in the Green Fleet Plan

Departmental carbon emissions are now tracked annually through the financial planning process to provide accountability and aid decision makers in realizing corporate and departmental GHG emissions reductions

MUNICIPAL EMISSIONS

2019	2020	2021
4,008 tCO_2e	3,833 tCO_2e	3,904 tCO_2e

Additional information on the actions that the City is taking to reduce corporate GHG emissions can be found in the Municipal Operations section of this report.

SECTOR GOALS, TARGETS & ACTIONS

The goals, targets and actions defined in the Climate Leadership Plan are organized by sector: Low Carbon High-Performance Buildings, Low Carbon Mobility, Low Carbon Waste Management, Municipal Operations and Adapting Early. In each section, high-level goals describe broad climate action objectives and are supported by more detailed targets and actions to reduce energy consumption and GHG emissions, transition to renewable energy and prepare Victoria for climate impacts. This Progress Report identifies the City's progress as of 2022 on the goals, targets and actions of the CLP since its release in 2018 and since the last Progress Report which included progress up to the end of 2020. Information on the progression of priority actions identified in the last Progress Report is provided in the sections below. The progression of targets and actions are classified using the terms described below:


GOALS


TARGETS


ACTIONS


HIGH IMPACT INITIATIVE

TARGETS

REACHED: the key components of this target are complete

ON TRACK: work is progressing and the target is anticipated to be met in the designated time frame

EARLY STAGES: work has progressed, but the pace of effort will need to increase before it can be considered on track to meet the target in the designated time frame

FALLING BEHIND: the work is not progressing fast enough to meet the target within the designated time frame

MISSED: the target was not met within the designated time frame

ACTIONS

FUTURE ACTION: the action has not yet been started or is on hold, slated for development in the future

EARLY STAGES: the action has been initiated, early work has begun, but requires additional work and resources to develop and implement

UNDERWAY: the action has been developed beyond early stages and work is actively underway

COMPLETE: the action has been fully implemented

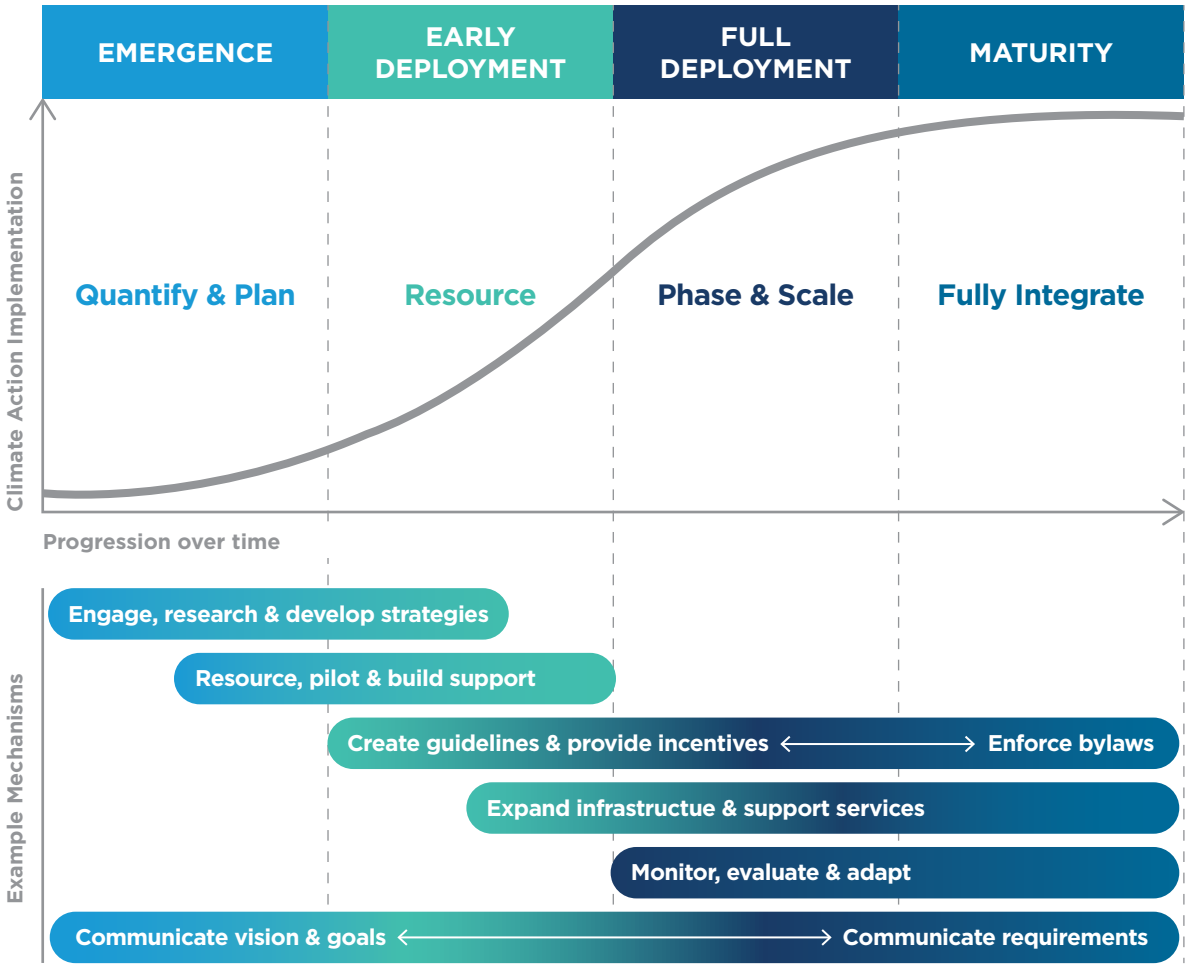
When the City declared a climate emergency in 2019, six High Impact Initiatives (HIIs) were identified to achieve emissions reductions rapidly to help meet the CLP targets. These HIIs are identified using the icon above (✳) within the sector action tables below.

Sector actions that were identified as priority actions in the 2020 Progress Report have been further updated in this report to show how they have progressed in the last two years.

MATURITY SCALE

Municipalities are well positioned to take climate action because they are closest to the communities that they serve and have a greater understanding of GHG emissions sources and the resources to address them. They also have the ability to develop and implement targeted, localized policies and programs that can effectively reduce emissions and address climate impacts, but their application does not always follow a linear path. The implementation of climate action initiatives often follows an 'S-curve' pattern where progress is slow at first as programs are developed, then accelerates as barriers are overcome and levels off as they are adopted and widely used. This is because many climate programs and projects are dependent on the maturity of new technologies and markets as well as the community's readiness to adopt them. The figure below describes the typical stages of maturity that that are experienced as municipal climate action initiatives are developed and advance through to maturity.

STAGES OF CLIMATE ACTION MATURITY



Adapted from the CleanBC Roadmap to 2030

The local government focus evolves as programs advance through the maturity scale and can be categorized into four key stages: Quantify & Plan, Resource, Phase & Scale and Fully Integrate. These stages form a progressive scale from initial concept through to continuous improvement of climate action initiatives through regular municipal processes. Common strategies or mechanisms used by municipalities to progress initiatives are generally associated with the different stages of the S-curve as illustrated at the bottom of the figure, although this is not an exhaustive list.

The emergence phase is the initial phase of the S-curve during which the program or initiative is first introduced, and engagement, research and planning are undertaken to develop strategies. The early deployment phase is the next phase when programs transition from planning into implementation. Resourcing of staff and financing is determined, and municipalities may pursue funding opportunities to ensure capacity is available to fully implement the program. During this phase, projects may be piloted and business cases developed to evaluate methods and build support. Behaviour changes are encouraged through the expansion of infrastructure and services, the provision of incentives, and the creation of standards and guidelines. The next phase is full deployment when programs become more widely adopted and growth accelerates. During this phase, investments are scaled up and more stringent policies and bylaws may be phased in. The final phase is the maturity phase when the initiative has reached its maximum potential and the changes have been mandated, standardized and fully integrated. Throughout and beyond the maturity phase is ongoing monitoring and evaluation of programs to ensure that they can be modified and evolve with changing conditions and community response over time.

The spectrum below is used to identify where each CLP target in the five sector sections are within the maturity stages from Quantify & Plan through to Fully Integrate.

Summer 2022 free, secure bike valet pilot project at City Hall

LOW CARBON HIGH-PERFORMANCE BUILDINGS

Buildings make up half of Victoria's community emissions. The City's main strategies to reduce emissions from buildings are to regulate construction of new buildings to low carbon standards, and support fuel switching and energy efficiency retrofits of existing buildings. The City's initiatives to reduce emissions from both new and existing buildings complement provincial and federal programs including providing incentives and support for home energy retrofits, and advancing emissions requirements for new buildings.

Through CleanBC, the Province has set a target to reduce emissions from buildings by 40 per cent by 2030 and plan to require that all new buildings are zero carbon ready by 2030. In addition to the BC Energy Step Code, carbon pollution standards will be added to the BC Building Code, providing local governments with the ability to limit greenhouse gas emissions from new construction in advance of the 2030 requirement. For existing buildings, the Province has also made commitments through the CleanBC Roadmap to 2030 to implement new high efficiency standards for heating and hot water equipment and introduce home energy labelling.

Building under construction on Wharf Street

GOAL

All buildings are highly efficient.

TARGETS

By 2030, all new buildings are 'net-zero energy ready'.

By 2050, all existing buildings meet new high efficiency standards.

PROGRESS

ON TRACK: The City is on track to achieve this target through implementation of City bylaws that will require new buildings to be zero carbon ready by 2025. The City has worked in collaboration with neighbouring municipalities, including the District of Saanich, to develop a phased adoption schedule of the BC Energy Step Code and the forthcoming provincial carbon pollution standards for new buildings. The City has funded a Senior Energy Specialist position to support these initiatives and coordinate industry training with partners such as BC Hydro and the Province.

EARLY STAGES: The City is working on multiple initiatives to ensure that all existing buildings meet high efficiency standards. The City is providing input on provincial initiatives such as the development of a retrofit code for existing buildings and the creation of the highest efficiency standards for all new and replacement space and hot water heating equipment. The City is also partnering on regional programs to support building owners to prepare for and comply with future efficiency requirements. These include the CRD's Home Energy Navigator, the Building Owners and Managers Association's (BOMA) 2030 District and the current development of a regional Strata Energy Advisor Program. The City is exploring mandatory energy benchmarking which will help to quantify the energy used and emissions created from larger buildings.

GOAL

All buildings are powered by renewable energy.

TARGETS

PROGRESS

By 2030, heating oil is phased out.

ON TRACK: Through the Oil to Heat Pump Program, which was launched in April 2020, the City provided $450,000 in top-up incentives for homeowners to make the switch to electric heat pumps, including electrical panel upgrades. As of July 2022, the program was fully subscribed with more than 260 homes converted from fossil fuel heating to heat pumps and 37 electrical panel upgrades completed. The City continues to promote provincial and federal incentives and use targeted approaches to systematically eliminate oil tanks and limit the rebound to natural gas. After completing targeted household surveying, it is estimated that approximately 500 to 550 oil tanks remain in residential homes in Victoria.

By 2050, all buildings exclusively use renewable energy.

EARLY STAGES: This target guides the City's climate action policy and program development for both new and existing buildings. The BC Energy Step Code and the forthcoming provincial carbon pollution standards have been developed to support the move away from fossil fuel use in new buildings. The City is promoting the benefits of using renewable energy, such as electricity, through the City's Climate Friendly Homes campaign. The City also partners with other local governments and the CRD on regional programs. These include the CRD's Home Energy Navigator, BOMA's 2030 District and the current development of a Strata Energy Advisor Program. Plans are also being developed to expand fuel switching retrofit support for more building types.

ACTIONS	2020	2022
Adopt the BC Energy Step Code, creating a roadmap towards net-zero energy ready buildings by 2030.	UNDERWAY	COMPLETE/ ONGOING

▶ **2020 Priority Action Update:** The City collaborated with the District of Saanich, the District of Central Saanich and the CRD to establish an adoption schedule for the BC Energy Step Code and the future provincial carbon pollution standards for new buildings. All new buildings in Victoria will be required to be zero carbon ready by July 1, 2025 as outlined in the July 21, 2022 Council Report.

Renew the City's Sustainability Checklist to include Step Code requirements for new buildings, as well as other sustainable building design elements that align with City goals.	EARLY STAGES	EARLY STAGES
Support the development of a 'Building Centre of Excellence' to showcase leading-edge design and construction practices and to foster a high-performance culture within Victoria's building industry.	EARLY STAGES	EARLY STAGES
Develop a strategy for reporting and tracking embodied energy and emissions — those associated with materials extraction, production and delivery — in new construction projects.	EARLY STAGES	EARLY STAGES
Design and deliver an innovative program for bundled and easy-to-achieve home energy retrofits.	UNDERWAY	COMPLETE/ ONGOING

▶ **2020 Priority Action Update:** The City worked with the CRD and the District of Saanich to design a regional home energy retrofit support program to improve energy efficiency and reduce emissions from single family residences. This program, the Home Energy Navigator, was launched in November 2022 and provides free enhanced support to homeowners at any stage of the retrofit process. Services include virtual home energy evaluations, quote reviews, rebate application support and other retrofit planning guidance. This is an ongoing service that will be provided by the CRD.

ACTIONS	2020	2022
Collaborate with heritage organizations to identify and promote energy retrofitting opportunities for homeowners.	EARLY STAGES	EARLY STAGES
Advocate for the development of a compulsory Canada/B.C.-wide home energy labelling program and, in the interim, implement a voluntary energy disclosure program.	UNDERWAY	UNDERWAY
Advocate for utilities and other levels of government to develop consistent energy-efficiency incentives and funding mechanisms. Explore opportunities for innovative financing mechanisms.	UNDERWAY	COMPLETE/ ONGOING
Design and deliver customized deep energy retrofit programs for **rental apartment buildings**.	EARLY STAGES	UNDERWAY
Design and deliver customized deep energy retrofit programs for **commercial buildings**.	EARLY STAGES	EARLY STAGES
Design and deliver customized deep energy retrofit programs for **strata residential buildings** (e.g., condominiums).	FUTURE ACTION	UNDERWAY
Support the development of a Victoria 2030 District or a comparable voluntary energy benchmarking program for commercial buildings.	UNDERWAY	COMPLETE/ ONGOING
Advocate for a compulsory provincial energy benchmarking program for large and complex buildings.	UNDERWAY	COMPLETE/ ONGOING

ACTIONS	2020	2022
Implement a transition plan to phase out heating oil systems in residential, commercial and institutional properties by 2030.	UNDERWAY	UNDERWAY

▶ **2020 Priority Action Update:** The City provided $450,000 in incentives through the Oil to Heat Pump Program to help homeowners make the switch to a heat pump, including electrical panel upgrades when necessary. Further targeted outreach is planned to ensure that all residential, commercial and institutional properties are not using oil for space heating by 2030, specifically highlighting the Province's new income qualified incentive for homeowners who may have financial barriers.

Remove regulatory barriers to promote the installation of renewable energy systems, supported by planning guidance and education tools.	EARLY STAGES	UNDERWAY
Assess opportunities to accelerate renewable natural gas uptake in residential, commercial and institutional buildings.	EARLY STAGES	EARLY STAGES
Assess and report on opportunities for implementing district energy systems in the city.	EARLY STAGES	EARLY STAGES

When the City declared a climate emergency in 2019, three High Impact Initiatives were identified to rapidly reduce emissions from buildings. They include the acceleration of BC Energy Step Code requirements for new buildings, the development of a regional home energy retrofit program and accelerated oil to heat pump incentives. Each of these initiatives is identified in the actions list above with this symbol

LOW CARBON MOBILITY

On-road transportation accounts for 42 per cent of community greenhouse gas emissions. The main strategies for reducing emissions in this sector include electrification of private, shared and commercial vehicles, mode shift from driving to walking, transit, and cycling and reducing the overall demand through land use and regulatory measures. While fuel use information is gathered annually through greenhouse gas emissions inventories, mode shift data is only collected every five years through the Capital Regional District Origin Destination Household Travel Survey and is used to better understand the changing travel patterns of residents; the next update is expected in 2023.

The Province set a target to reduce transportation sector emissions by 30 per cent below 2007 levels by 2030. This requires aggressive investments in public, shared and active transport, promoting sustainable land use to reduce the need for long-distance travel and providing incentives to companies that adopt low-carbon technologies and practices. At the federal scale, there are funding programs including the Active Transportation Infrastructure Fund, the Public Transit Fund and the Zero-Emissions Vehicle Infrastructure Program that further support the switch to electric mobility.

EV fast chargers in VicWest

GOAL

All Victorians have access to low carbon, high-performance and affordable multi-modal transportation.

TARGETS

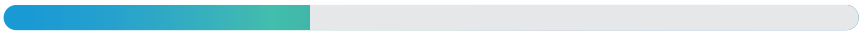
By 2030, 25 per cent of all trips by Victoria residents are taken by public transportation.

PROGRESS

EARLY STAGES: The City continues to advocate for public transit as the highest priority for regional investment to both the Province of BC and the Victoria Regional Transit Commission. Victoria is increasingly providing dedicated curb space for transit and handyDART services, making investments in paving, sidewalks and signal priority technologies to support service delivery, and expanding or upgrading bus shelters to improve passenger comfort. Victoria is the only municipality with a Youth Universal Bus Pass program and continues to support transit-oriented design for new private land development. In 2017, 12 per cent of all trips to, from and within Victoria were made by public transit. If only considering trips within the municipality, this number decreases to seven per cent. New data will be available in late 2023 to help the City understand overall trends in mode share and trip characteristics for residents five years old and above over a 24-hour period.

By 2030, 100 per cent of BC Transit buses in Victoria are renewably powered.

EARLY STAGES: BC Transit is continuing to expand the use of hybrid and electric buses in the Capital Region through its Low Carbon Fleet Program and is targeting 100 per cent of their fleet to be electric by 2040. The Victoria Regional Transit Committee Transit Facility Master Plan identifies modernization projects at both the Victoria transit centre and the Langford transit centre to support electrification needs. The Victoria transit centre is expected to get its first ten electric buses in 2023 and the new View Royal handyDART facility which is planned to open in 2024 will have a mix of electric and gas buses. In addition to electrification, renewable natural gas and renewable diesel fuel are expected to be used to support near term GHG reductions.



TARGETS

By 2030, Victoria residents choose walking and cycling for 55 per cent of all trips.

PROGRESS

EARLY STAGES: The City continues to invest in infrastructure to support mode shift (crosswalks, pathways, sidewalks and bike lanes) and deliver encouragement and evaluation programs. Expansion of shared mobility services, such as car share, along with demand management initiatives, such as enhanced bike parking, within new private developments supports more options for residents to walk and cycle. In 2017, 26 per cent of all trips to, from and within Victoria were by walking and cycling. If only considering trips within the municipality, this number increases to 50 per cent. New data will be available in 2023 to help the City understand overall trends in mode share and trip characteristics.

Quantify & Plan | Resource | Phase & Scale | Fully Integrate

GOAL

Vehicles in Victoria are powered by renewable energy.

TARGETS

By 2030, renewable energy powers 30 per cent of passenger vehicles registered in Victoria, and 100 per cent of passenger vehicles are renewably powered by 2050.

PROGRESS

ON TRACK: In 2021, five per cent of passenger vehicles in Victoria were electric or hybrid electric vehicles and the Greater Victoria area continues to have some of the highest EV sales rates in Canada. Canada and the Province both have light-duty zero emission sales targets which are expected to further increase electric vehicle sales in Victoria. In Victoria, the high ratio of multi-unit residential buildings presents an additional barrier to broader EV adoption due to limited access to EV charging in these types of homes. In 2022, the City adopted the Electric Vehicle and Electric Mobility Strategy which outlines how the City will rapidly and significantly expand its public charging network to provide electric vehicle charging options throughout Victoria neighbourhoods. The Strategy includes plans to install more than 30 fast chargers and 650 Level 2 chargers, targeting 50 per cent in grant funding. Implementation is underway with the City installing 67 new chargers including its first fast charging station in 2022.

Quantify & Plan | Resource | Phase & Scale | Fully Integrate

TARGETS

By 2030, 30 per cent of commercial vehicles operating in Victoria are renewably powered.

PROGRESS

EARLY STAGES: Initiatives are underway at the provincial scale, including financial incentives, to encourage the adoption of light-duty EVs. Solutions for electrification of heavy-duty vehicles are being developed through the Advanced Research and Commercialization Program with a goal to address the technology gap for heavy-duty and long-haul commercial vehicles. The City's continued role will be providing charging infrastructure to support commercial operators, introducing differential fee structures for commercial loading permits of electric versus internal combustion engine commercial vehicles and providing priority allocation of curb space for electric commercial vehicles. In the future, there may also be consideration of municipal regulations such as zero emission zones within village centres and the downtown core.

GOAL
Smart land use minimizes transportation emissions.

TARGETS

By 2030, 100 per cent of Victoria's neighbourhoods are complete by design with substantial transportation system diversity.

PROGRESS

ON TRACK: Concentrating housing, services and population growth within the urban core and near large and small urban villages with mobility hubs can provide the critical mass to support increased use of shared mobility, public transit, cycling and walking. The City will continue to support the development of complete neighbourhoods with the expansion of its mobility networks and services to provide residents with access to seamless, clean mobility options.

ACTIONS	2020	2022
Complete the City's Sustainable Mobility Strategy, Go Victoria, which will allow the City to develop the management systems, programs and other tools to optimize and transform the movement of people, goods and services.	COMPLETE/ ONGOING	COMPLETE/ ONGOING

▶ **2020 Priority Action Update:** The City has continued to implement Go Victoria through the delivery of new infrastructure, programs and policies which support the electrification of private, shared and commercial vehicles, and facilitate increased mode shift to walking, transit, cycling and shared mobility. Progress continues to be made on the more than 100 actions, with an increasing emphasis on asset renewal and road safety strategies to protect vulnerable users, demand management through pricing, programs and regulations, and integration of new technologies and services to support clean, seamless mobility options for everyone.

	Work with municipal partners to implement smart city technologies that improve safety, affordability and convenience for public transit, walking, cycling, car-sharing and ride-sharing.	EARLY STAGES	EARLY STAGES
✳	Invest annually in design and construction of new walking and cycling infrastructure, including secure bike parking in the downtown core and in village centres.	UNDERWAY	UNDERWAY

▶ **2020 Priority Action Update:** Over the past two years, the City has upgraded or added 43 crosswalks and 13 traffic signals, introduced 14.7 kilometers of All Ages and Abilities cycling infrastructure, replaced or upgraded ten transit shelters and delivered five major sidewalk improvement projects. The City also provided the Youth Universal Bus Pass program, a community bike shelter program and piloted a free valet service at City Hall for bicycles, strollers and other mobility devices.

ACTIONS	2020	2022
Expand electric vehicle charging stations in City parkades, recreation centres, community centres and public spaces.	UNDERWAY	UNDERWAY
Invest in transit-signal priority measures to reduce transit wait times in the downtown core.	UNDERWAY	UNDERWAY
Design and implement an electric vehicle ecosystem strategy, including design guidelines for new development projects, to promote and support the adoption of electrified personal, public and commercial vehicles.	EARLY STAGES	UNDERWAY

▶ **2020 Priority Action Update:** The Electric Vehicle and Electric Mobility Strategy was adopted in March 2022 and outlines the City's plan to install over 650 Level 2 EV charging stations and more than 30 fast charging stations. In 2022, the City installed 67 new public EV charging stations. The 2022 Financial Plan includes a new Electric Vehicle Infrastructure Program with a budget of $8.5 million over six years. The City is targeting approximately $6 million of additional investment from other levels of government for a combined total investment of $14.5 million in EV charging infrastructure.

When the City declared a climate emergency in 2019, three High Impact Initiatives were identified to reduce emissions from the transportation sector. They were to increase the City's active transportation infrastructure network, develop a RapidBus system to support mode shift and provide zero carbon mobility incentives to increase electrification of vehicles. Each of these initiatives is identified in the actions list with this symbol

ACTIONS	2020	2022
Expand the Active & Safe Routes to School program to all Victoria elementary schools.	UNDERWAY	UNDERWAY
Introduce an electric bicycle incentive program in partnership with CRD and the Province.	EARLY STAGES	FUTURE ACTION
Promote and incentivize comprehensive transportation demand-management (TDM) strategies for new development projects.	EARLY STAGES	UNDERWAY

▶ **2020 Priority Action Update:** The City continues to support TDM measures in new development projects to encourage low-carbon mobility such as transit passes or car share memberships for residents, car share vehicles and driving credits, as well as enhanced bicycle parking and amenities such as maintenance and e-bike charging stations. Measures may be proposed voluntarily or negotiated as a part of parking variance requests. In 2023, the City will be recommending further modernization of parking regulations and expanded TDM measures.

Assist commercial operators in their transition to a renewably powered fleet.	FUTURE ACTION	FUTURE ACTION
Pilot a sustainable urban freight improvement program for downtown using compact electric logistics vehicles and cargo-bicycles.	FUTURE ACTION	FUTURE ACTION
Sponsor community-led events, educational programs and celebrations that encourage use of low carbon transportation.	UNDERWAY	UNDERWAY
Invest in education and promotional programs for Victoria households, informed by behavioral insights, to increase use of public transit and active transportation.	FUTURE ACTION	FUTURE ACTION
Develop a transportation GHG information strategy in partnership with the CRD and ICBC, supported by technology to facilitate transportation GHG planning and action.	FUTURE ACTION	FUTURE ACTION

ACTIONS	2020	2022
Advocate for energy performance requirements in provincial ride-sharing regulations.	COMPLETE/ ONGOING	COMPLETE/ ONGOING
Expand car share services in the downtown core and village centres.	UNDERWAY	UNDERWAY
Advocate for significantly improved commercial vehicle performance, higher fuel efficiency, and tighter air quality standards, monitoring and reporting.	UNDERWAY	UNDERWAY
Work with port authorities to supply on-site renewable energy for marine vessels.	FUTURE ACTION	FUTURE ACTION
Advocate to the provincial government to require ICBC to offer distance-based or pay-as-you-drive automobile insurance.	COMPLETE/ ONGOING	COMPLETE/ ONGOING
Partner with the CRD to undertake a regional pricing analysis on effective, fair and long-term mobility options such as decongestion charges.	FUTURE ACTION	FUTURE ACTION
Invest in programs that support transportation demand management for businesses and public institutions operating in Victoria.	FUTURE ACTION	FUTURE ACTION
Implement rapid transit on major corridors and micro transit services within neighbourhoods.	UNDERWAY	UNDERWAY
Support the expansion of electric buses, including BC Transit and other commercial fleets, through infrastructure and permit programs.	UNDERWAY	UNDERWAY

LOW CARBON WASTE MANAGEMENT

Landfilled waste accounts for about six per cent of community emissions. The City of Victoria provides community solid waste management services, including curbside residential garbage and organics collection, and residential yard and garden waste drop-off. The City regulates activities in the community to minimize waste sent to the landfill and encourages the diversion of valuable materials as part of a circular economy. The City's waste reduction initiatives are guided by Zero Waste Victoria, a 20-year plan to reduce waste by 50 per cent across the community.

The Capital Regional District owns and operates the region's only landfill and plays a critical role in meeting the City's waste-related emissions reduction targets. The Capital Regional District has introduced several initiatives over the past five years to mitigate and capture landfill methane emissions while producing clean energy in the form of renewable natural gas. The Province sets requirements for landfill emissions, has provided local governments with funding opportunities to divert organics and is currently advancing a Circular Economy Strategy to help realize the environmental and economic benefits of waste reduction.

Waste collection from new zero waste stations

GOAL

Organic materials are managed to avoid GHG emissions.

TARGETS

Eliminate 100 per cent of food and yard waste sent to the landfill by 2030.

Eliminate 100 per cent of other organic materials sent to the landfill by 2030.

Capture methane from collected organic waste to provide renewable energy by 2025.

PROGRESS

ON TRACK: In December 2020, Zero Waste Victoria was adopted, which contains 40 strategies to reduce waste; eight of these strategies directly target organic waste diversion. In 2021, changes to the City's curbside organics collection service resulted in a drastic reduction of landfilled yard waste. Additional initiatives are currently underway to divert organic waste from multi-unit residential buildings and commercial properties.

ON TRACK: Through Zero Waste Victoria, the City is advancing the elimination of other organic materials which are often more difficult to divert from the landfill, including clean wood waste and paper products. The City has taken action to divert salvaged wood material from demolished buildings through the Demolition Waste and Deconstruction Bylaw which was adopted in June 2022. The City is also helping to advance composting opportunities for food-soiled paper with the Province and packaging steward Recycle BC.

FALLING BEHIND: Organic material collected by the City is sent to an industrial composting facility that avoids the generation of methane emissions. The City has also worked with the CRD to consider opportunities that generate clean energy from organic materials. At this time, the CRD has determined that the business case does not support investment in an anaerobic digestion facility in the region but continues to monitor opportunities if market conditions change.

ACTIONS	2020	2022
Continually improve the residential kitchen and yard waste collection and diversion programs, including for multi-family residences.	UNDERWAY	COMPLETE/ ONGOING

▶ **2020 Priority Action Update:** In September 2021, the City's residential curbside waste collection service was enhanced, allowing residents to add yard and garden waste to their green bin. As a result, organics collection and composting has increased by 28 per cent from 2021 and yard waste landfill disposal has been reduced.

Foster behaviour change to reduce food waste through the 'Love Food Hate Waste' educational campaign.	UNDERWAY	UNDERWAY
Partner with the CRD to deliver a regional industrial treatment facility for organic waste by 2025.	UNDERWAY	FUTURE ACTION

▶ **2020 Priority Action Update:** In 2021, the CRD prepared a business case for a new compost/anaerobic digestion facility in the region to process organic waste. The CRD determined that current market conditions do not favour the investment in this facility at this time but continues to monitor for future opportunities.

Work with local stakeholders to reduce food waste from restaurants and divert it from the landfill.	FUTURE ACTION	FUTURE ACTION
Reduce additional sources of food waste in the city, such as from the commercial sector and tourism industry.	UNDERWAY	UNDERWAY
Partner with the CRD and neighbouring municipalities to get more value from organic waste through pilot programs that stimulate new demand and keep nutrients in the region.	FUTURE ACTION	FUTURE ACTION

ACTIONS	2020	2022
Work with stakeholders to reduce and divert other materials that produce methane when landfilled (e.g., wood, paper, textiles).	UNDERWAY	UNDERWAY

2020 Priority Action Update: In 2022, the City introduced the Demolition Waste and Deconstruction Bylaw that was developed in collaboration with representatives from Victoria's building industry to salvage reusable wood from demolished homes. The City is now exploring opportunities to expand the salvage of reusable building materials from commercial building demolitions and renovations. The City sends soiled paper collected curbside and from streets and parks for composting and is advancing soiled-paper composting in other sectors in the community.

City organic curbside collection

MUNICIPAL OPERATIONS

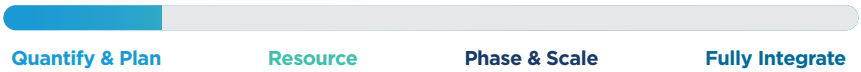
In 2021, emissions from corporate sources, or sources over which the City has direct control, were approximately 3,900 tCO_2e and account for about one per cent of total community emissions. Since 2007, the City has reduced its corporate emissions by 18 per cent. The Climate Leadership Plan's core planning principle is to lead and inspire action as the City has an important role to play in encouraging community participation in broader climate action efforts. Cities are integral in responding to the climate crisis as they are well-positioned to lead mitigation efforts to reduce emissions and address climate change impacts.

In September 2021, the City formally adopted the Corporate Energy and Emissions Management Plan (CEEMP) which provides a pathway for the City to reduce energy consumption, make the switch to renewable energy and reduce greenhouse gas emissions resulting from the City's operations and service delivery. In March 2022, the Green Fleet Plan was adopted and builds on the CEEMP, providing a strategy to reduce greenhouse gas emissions from the City's vehicle fleet.

New EVs added to the Fire Department fleet

GOAL

The City is a recognized leader in climate mitigation and adaptation action.

TARGETS	PROGRESS
By 2040, all City facilities are powered 100 per cent by renewable energy.	**ON TRACK:** Currently, 70 per cent of facilities that are owned and managed by the City are powered by renewable energy. The CEEMP outlines a pathway for transitioning all remaining City facilities to renewable energy by 2040 as their fossil fuel systems reach life expectancy. A Green Buildings Plan is currently in development to identify the capital resources required to transition remaining facilities to renewable energy. 
All new City facilities are renewably powered.	**ON TRACK:** This requirement has been integrated into the City's current practice for the design of newly constructed municipal facilities. The City will formally update the existing Green Building Policy through the development of the Green Buildings Plan in 2023 to formalize this target. 
By 2025, all City power tools and small engine-driven equipment are renewably powered.	**FALLING BEHIND:** Approximately 25 per cent of the City's small equipment has been electrified with the replacement of gasoline and diesel-powered equipment with battery powered alternatives as soon as they are available and can meet the City's operational requirements. The City is planning to replace the entire fleet of brush cutters and all small compaction equipment with battery powered alternatives in 2023, aiming to bring the total to 50 – 60 per cent by the end of 2023. The City is now targeting 95 per cent of small equipment to be electrified by 2025 and is actively seeking alternate renewable fuel options for the remaining five per cent of equipment that electric-powered options are not forecast to be available to meet the City's needs. 

TARGETS

By 2040, 80 per cent of the City fleet is electrified or renewably powered.

PROGRESS

ON TRACK: The CEEMP identifies a strategy to achieve this target by 2040. In March 2022, the Green Fleet Plan was adopted and provides clear direction on actions and policies required to support the transition from fossil fuel powered vehicles to EVs and other renewably fueled transportation alternatives. The Green Fleet Plan identifies which fleet vehicles are most appropriate for electrification and the capital resources and infrastructure investment required for this transition. Currently, the City owns and operates 20 EVs and eight hybrid vehicles. Procuring EVs in 2022 has been challenging, however the City anticipates the delivery of 20 EVs in 2023.

GOAL
The City takes integrated and informed climate action.

TARGETS

By 2020, capital and operating plans are informed by climate data, carbon pricing and the City's GHG reduction targets.

PROGRESS

REACHED IN 2022: The CEEMP was adopted in September 2021 and identifies measures and emissions reduction targets at the department level to guide corporate actions and enable the City to prioritize and integrate energy and GHG emissions reduction programs with other relevant City operating plans, standards, capital expenditures and regulations.

TARGETS

By 2022, the City has developed a triple bottom line accounting system that guides City business planning by assessing and balancing environmental and social risks and financial costs and opportunities.

PROGRESS

MISSED: The City is working on multiple initiatives to assess social, economic and environmental risks, and financial costs and opportunities brought on by climate change. The City has also been developing strategies for incorporating these considerations into the City's planning processes. The completion of the CEEMP and the incorporation of carbon allocations into the City's financial planning process is an important step towards reaching this target.

GOAL

The City will provide timely and accurate data supporting strong climate mitigation and adaptation actions.

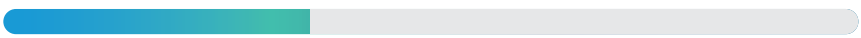
TARGETS

By 2022, partner with other local governments and the region to develop a community-accessible Energy and GHG information management system (EGIMS) to define, communicate and track community energy and GHG reduction across all sectors.

PROGRESS

MISSED: The City publicly reports community energy use and GHG emissions annually. Every two years, the City partners with the CRD on a region-wide community energy and GHG inventory and every other year with the District of Saanich on a joint community GHG inventory. These inventories define, communicate and track community energy and emissions reduction across all sectors.

The Province and utility providers continue to provide building-related energy data that help define and track community energy and emissions reductions. However, the level of detail in the data is often not fine enough to evaluate the effects of new policies and interventions. A joint vehicle-kilometers travelled study was commissioned in 2022 by the City and the District of Saanich to better understand GHG emissions resulting from on-road transportation in the region. A comprehensive GHG information management system is maintained as a vison but is on hold until more detailed data is available.



ACTIONS	2020	2022
Develop a corporate energy and emissions management plan — including a triple bottom line accounting system — to assess and balance environmental, social and financial risks and opportunities. The plan will also support deep energy retrofits for existing facilities.	UNDERWAY	COMPLETE/ ONGOING

▶ **2020 Priority Action Update:** The City adopted the Corporate Energy and Emissions Management Plan (CEEMP) in September 2021 which outlines a pathway for achieving the City's 2030 and 2040 targets for reducing GHG emissions from corporate operations. The CEEMP has developed mechanisms to incorporate climate considerations into the City's financial planning process and identifies deep energy retrofits required for existing City-owned facilities. The implementation of the CEEMP will be ongoing and supported by supplemental plans such as the Green Fleet Plan and the Green Buildings Plan which is currently under development.

Incorporate climate action performance measures into the City's annual budgeting process.	UNDERWAY	COMPLETE/ ONGOING

▶ **2020 Priority Action Update:** Starting in 2022, departmental carbon allocations are now incorporated into the annual budgeting process. Annual progress for departmental emissions reductions are tracked against the pathways outlined in the CEEMP. The aim of incorporating carbon allocations into the annual Financial Plan is to aid decision makers in understanding how activities impact corporate and departmental GHG emissions.

Develop a Climate Action Economic Assessment Tool for both GHG mitigation and adaptation actions to identify the high-priority community programs that will deliver the most affordable GHG reductions for buildings, transportation and waste management.	EARLY STAGES	EARLY STAGES
Expand procurement policies to include sustainability performance criteria, including GHG production and avoidance of all types of waste.	FUTURE ACTION	FUTURE ACTION
Establish a two-year staff corporate energy and climate action position using matching funds from an external partner. Join BC Hydro's Corporate Energy Manager Program.	COMPLETE/ ONGOING	COMPLETE/ ONGOING

ACTIONS	2020	2022
Update the corporate building policy for new construction to reference BC Energy Step Code requirements and provide staff training to support its adoption.	EARLY STAGES	UNDERWAY
Formalize fleet electrification through the City's fleet master planning process.	EARLY STAGES	COMPLETE/ ONGOING

▶ **2020 Priority Action Update:** In March 2022, Council adopted the Green Fleet Plan which provides clear direction on the actions and policies required to support the widespread transition of the City's vehicle fleet from fossil fuel powered vehicles to EVs and other renewably fuelled transportation alternatives. Capital resources required to implement the Green Fleet Plan have been incorporated into the long-term Financial Plan.

Plan for City vehicle electrification systems and networks.	UNDERWAY	COMPLETE/ ONGOING
Where electric vehicles are not available, switch to low carbon fuels.	EARLY STAGES	EARLY STAGES
Implement fleet telematics to identify vehicle and operational energy use patterns to inform decision making.	UNDERWAY	UNDERWAY
Reduce per-vehicle GHG emissions through fleet operation and maintenance as well as vehicle right-sizing.	EARLY STAGES	UNDERWAY
Partner with other municipalities and orders of government to support development of the full suite of electric vehicles required by municipal fleets.	EARLY STAGES	UNDERWAY
Develop the City's web based GHG/energy education, awareness and information exchange portal to promote information sharing and empower the public to achieve measurable and trackable GHG reductions.	EARLY STAGES	UNDERWAY
Build an education program to improve staff capacity for energy and GHG management in day-to-day decision making.	FUTURE ACTION	FUTURE ACTION
Pilot new technologies in City-owned assets to assess suitability for broad community application.	UNDERWAY	UNDERWAY

ADAPTING EARLY

The City is developing a Climate Change Adaptation Plan that will identify both corporate and community adaptation actions to prepare for and respond to the impacts of climate change. The extreme weather events of 2021 revealed that impacts are occurring faster than expected in our region and that the City has more work to do to effectively prepare for current and projected risks. The cost to municipalities of dealing with extreme weather is rising, but it is estimated that for every dollar invested in adaptation for climate impacts, up to $15 in costs can be saved.

In June 2022, the Province released the Climate Preparedness and Adaptation Strategy which includes actions across provincial ministries. In November 2022, the federal government released Canada's National Adaptation Strategy: Building Resilient Communities and a Strong Economy. This Strategy comes with funding to help maintain and climate-proof public infrastructure, reduce the impacts of climate-driven disasters and restore ecosystems. It is evident that all orders of government acknowledge that climate impacts are already occurring, and that taking adaptation action now will result in building more resilient communities and avoid greater costs in the future.

Holland Point bluff restoration

GOAL

All climate-related risks to City infrastructure are minimized through early and wise planning and action.

TARGETS

Climate resilience is embedded into all City business.

The City's infrastructure and services are ready to protect and respond to the risks associated with a changing climate.

PROGRESS

FALLING BEHIND: As a result of the extreme weather events in 2021, impacts were felt across the city that highlighted the need to accelerate action to adapt and prepare for increasing climate risks. While the City has drafted a corporate chapter of the Climate Change Adaptation Plan, which includes adaptation actions for each City department, there are opportunities for actions to be updated to reflect the lessons learned from recent events. Additional resources are required to support and accelerate the full integration of climate change adaptation considerations across the organization.

FALLING BEHIND: While significant initiatives are underway to upgrade infrastructure, manage assets, update condition assessments, forecast climate impacts and adapt City processes to account for climate change impacts, the extreme weather events of 2021 highlighted that there is more work to be done. The City is taking a proactive approach to financial planning and investment to accelerate adaptation action. This includes developing prioritized programs and projects to prepare for the most significant anticipated climate impacts in the short term.

The increased frequency and severity of extreme weather events has also highlighted social vulnerabilities throughout the community and the need to expand the City's service delivery to provide support and resources to residents. An Extreme Heat Hazard Risk and Vulnerability Assessment (HRVA) was developed in 2022 which will inform an update to the City-wide all-hazards HRVA. This update is required to better understand the risks to City infrastructure and services from climate change.

GOAL

Victoria's natural environment flourishes in a changing climate.

TARGETS

Natural habitats support healthy fish, wildlife and plant populations and healthy ecosystem function.

PROGRESS

EARLY STAGES: The City's Parks and Open Spaces Master Plan guides the planning and management of City parks, including protection of the environment. The City is working to enhance and protect Victoria's biodiversity and adapt to climate change through the management of invasive species, protecting sensitive ecosystems, and increased plantings of native and climate adapted vegetation. The Urban Forest Master Plan identifies actions for improved management of trees on public and private lands over the next 50 years.

In July 2021, the Tree Protection Bylaw came into effect and applies to trees on private property. The Bylaw implements several recommendations in the Urban Forest Master Plan and aligns with leading practices and standards across the region, including the introduction of tree stocking requirements that will help grow Victoria's urban forest canopy cover over time as land is developed.

Quantify & Plan | Resource | Phase & Scale | Fully Integrate

GOAL

All Victorians are empowered and prepared for climate-related impacts and emergencies.

TARGETS

The community is knowledgeable and prepared to address the impacts from a changing climate.

PROGRESS

FALLING BEHIND: The City engaged a community working group of residents in the identification of climate risks and vulnerabilities to develop the community chapter of the Climate Change Adaptation Plan. This chapter will provide further information to the community on the impacts of climate change and the adaptation actions identified as priorities to prepare for them. The City was actively involved in the CRD Coastal Flood Inundation Mapping Project which includes information that has been provided to the community on potential coastal flooding risks due to sea level rise.

The City has been installing Neighbour Hubs which are physical structures that help to foster community connections between residents. They play a key role in preparing residents to help each other during and after emergency events. The City currently has three Hubs and plans to install two more in 2023. An all-hazards map for the region is also in the planning stages that will help the community better understand climate risks and how to prepare for them.

Quantify & Plan | Resource | Phase & Scale | Fully Integrate

TARGETS

The City incorporates best practices in risk communication covering all climate hazards.

PROGRESS

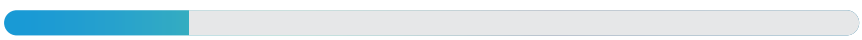
ON TRACK: As the impacts of climate change are already being felt in Victoria with the increasing frequency and severity of extreme weather events, the City provides information on available resources and how residents can prepare through the City's communication channels, including social media and its website. The heat dome in summer 2021 revealed that many Victoria residents are not prepared for extreme heat and that additional support is required. The City has developed Extreme Weather Response Plans which include resources for extreme heat and cold weather. These plans identify how the City collaborates with external stakeholders and internal departments on extreme weather response as well as public communications.

The City's new VictoriaReady web pages on Extreme Weather and Extreme Heat Resources contain information on how to prepare for various weather events. The City participates in the Regional Emergency Management Partnership which has plans to develop a local emergency program coordination and communications plan for regional hazards in 2023. Future goals include an all-hazards dashboard to communicate regionally specific hazard information, including climatic hazards.

Climate resilience enhances quality of life for all Victorians, especially the most vulnerable.

EARLY STAGES: The City's approach to adaptation planning involves an assessment of how existing vulnerabilities in the community are intensified by climate change. The community chapter of the Climate Change Adaptation Plan will include actions to address impacts to the health and well-being of the community, including specific considerations for equity denied populations.

The City has also been working with municipalities and organizations across the country to learn about best practices for building climate resilience and how to engage appropriately and respectfully in this work. As climate change can have significant impacts on a community's quality of life and overall well-being, the City is involved in multiple regional initiatives to respond to the impacts of extreme heat on vulnerable populations which experience disproportionate impacts. This work includes heat vulnerability mapping and health initiatives to better understand how equity denied populations are impacted by extreme heat events and the interventions that are required.



ACTIONS	2020	2022
Develop the business case for adaptation to demonstrate benefits of taking early action. (Combined with action: Study how the direct and indirect impacts of climate change will affect the local economy).	EARLY STAGES	EARLY STAGES

▶ **2020 Priority Action Update:** Due to resourcing contraints, this action has been deferred to 2023 when additional capacity is expected.

Conduct a community-wide climate vulnerability and risk assessment.	EARLY STAGES	COMPLETE/ ONGOING

▶ **2020 Priority Action Update:** The City engaged with community stakeholders to conduct a Community Climate Risk & Vulnerability Summary Report which was supplemented by expert knowledge and reviewed against existing risk assessments across the region. The Summary Report will be revisited at regular future intervals as climate science and the City's capacity to respond over time changes. The Summary Report was included in the February 24, 2022 Climate Update to Council.

Assess how existing City plans incorporate climate risk and identify opportunities to align with ongoing and future City business.	COMPLETE/ ONGOING	COMPLETE/ ONGOING

▶ **2020 Priority Action Update:** The City assessed how existing plans incorporate climate risks as part of the development of the corportate chapter of the Climate Change Adaptation Plan. This chapter will help integrate adaptation into the City's day-to-day operations and increase resilience to future climate impacts.

Seek funding, investment and partnership opportunities to enhance the speed and quality of adaptation initiatives.	UNDERWAY	UNDERWAY
Minimize flood risks through natural and engineered stormwater infrastructure.	UNDERWAY	UNDERWAY
Analyze the economic, social and environmental implications of adopting a Flood Construction Level.	UNDERWAY	UNDERWAY

▶ **2020 Priority Action Update:** With support from the City, the CRD completed the Coastal Flood Inundation Mapping Project in 2021. The Project recommends the application of Flood Construction Levels across the region. In late 2022, the Province restarted the consultation process for the development of a B.C. Flood Strategy that will enhance the flood resilience throughout the province. Analysis of flood management plans will continue in 2023 with the goal of providing a recommendation to Council on the creation of Flood Construction Levels for Victoria.

ACTIONS	2020	2022
Study how the direct and indirect impacts of climate change will affect the local economy.	UNDERWAY	UNDERWAY
Engage community members in refreshing the Climate Adaptation Plan and include actions for sectors beyond the municipal corporation (e.g., residents).	UNDERWAY	UNDERWAY

▶ **2020 Priority Action Update:** Since December 2020, the City has been engaging with a community working group representing a diverse array of local expertise on the development of the community chapter of the City's Climate Change Adaptation Plan. This chapter is focused on developing community-based adpatation actions to improve the resilience and preparedness of the broader community to the projected and current impacts of climate change.

Create a community-wide monitoring and evaluation framework to assess resilience and demonstrate progress.	EARLY STAGES	EARLY STAGES
Consider future climate impacts when designing and retrofitting City buildings.	UNDERWAY	UNDERWAY
Study the interdependencies between infrastructure systems to minimize cascading effects.	FUTURE ACTION	FUTURE ACTION
Continue to integrate climate change impacts in environmental management decisions.	UNDERWAY	UNDERWAY
Increase native plantings on City-owned and managed land to enhance biodiversity and support ecosystem migration.	COMPLETE/ ONGOING	COMPLETE/ ONGOING
Support CRD initiatives and investments to acquire, expand and protect green spaces across the region.	UNDERWAY	UNDERWAY
Explore the creation of Environmental Development Permit Areas or other mechanisms to protect and enhance shoreline and marine habitats.	FUTURE ACTION	UNDERWAY

ACTIONS	2020	2022
Work with partners to engage, educate and influence the general public to manage privately owned urban forest to be resilient to climate change.	UNDERWAY	UNDERWAY
Develop or amend landscaping guidelines to encourage private developments to use native tree stock that is adapted/resilient to future climate change.	COMPLETE	COMPLETE
Integrate climate adaptation with work being done on local and regional food security, where appropriate.	UNDERWAY	UNDERWAY
Continue to improve public communication methods in advance of extreme weather events.	UNDERWAY	COMPLETE/ ONGOING
Continue to integrate climate risks into emergency preparedness and recovery planning.	UNDERWAY	COMPLETE/ ONGOING
Support projects and programs that increase resilience in populations vulnerable to climate change.	EARLY STAGES	UNDERWAY
Collaborate with community partners to expand public knowledge of the impacts of climate change and the preparation required for all Victorians.	EARLY STAGES	UNDERWAY
Compile a resource that communicates private sector responsibilities for climate adaptation and connects them to resources and programs that will help them mitigate risks.	FUTURE ACTION	FUTURE ACTION

LOOKING AHEAD

Over the past two years, the City has progressed the six climate emergency HIIs in addition to many of the actions outlined in the CLP to ensure that the City's climate goals and targets are met. Most of the HIIs have moved from planning to implementation and the City's role is shifting to resourcing and scaling projects as implementation moves into the early deployment and full deployment stages of the maturity scale. Looking forward, it will be important to continue accelerating the deployment of existing programs and initiatives as well as managing program costs and risks as implementation scales up.

The City will need to continue addressing challenges, working cooperatively with the community and other regional partners, and incorporating lessons learned. The past two years have highlighted that climate impacts are already being felt in Victoria and that the City is not yet prepared. Adaptation planning will require increased focus and attention to meet stated targets and build resilience throughout the community. The following are some of the key considerations for continued climate action implementation over the next two years:

BUILDINGS

- Continue to advance low carbon new construction and retrofits through building requirements and continued outreach with industry and the community
- Expand retrofit programming and introduce new initiatives for larger building types, including multi-unit residential and commercial buildings

WASTE

- Continue exploring and integrating the opportunities of a circular economy through the implementation of Zero Waste Victoria

MUNICIPAL OPERATIONS

- Finalize the Green Buildings Plan to accelerate emissions reductions from City-owned buildings and continue implementing the Green Fleet Plan
- Begin exploring opportunities to reduce embodied emissions associated with City operations

TRANSPORTATION

- Continue to enable the shift to zero emissions vehicles through expansion of the City's public charging network and programs to support increased use of e-mobility devices as outlined in the Electric Vehicle and Electric Mobility Strategy and begin planning for expanded EV charging access within multi-unit residential buildings
- Continue to facilitate mode shift through the expansion of transit, cycling, walking and shared mobility networks and support investments in infrastructure renewal as outlined in Go Victoria
- Continue to introduce measures that support managing demand for curbside uses, including parking pricing, to align with the City's hierarchy of priorities outlined in the Official Community Plan and Go Victoria

ADAPTING EARLY

- Continue to better understand and manage climate change impacts on City operations, incorporate estimated costs into future financial plans and determine the cost of inaction
- Increase the focus and attention on climate adaptation planning and determine the additional resources required for asset renewal to reduce the impacts of extreme weather events
- Finalize the corporate and community chapters of the City's Climate Change Adaptation Plan
- Update the city-wide HRVA and Business Continuity Plans to include impacts from extreme weather events

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The CLP is a living document designed to evolve with the scientific understanding of GHG mitigation and improved climate response strategies. As the Plan approaches five years since it was released in 2018, it is prudent to begin planning an update to adjust the targets and actions to be reflective of changing conditions and recent learnings. The update could include adding new measures and metrics, and revising actions based on emerging best practices.

The City will continue to produce Progress Reports every two years to track progress on GHG emissions reductions and the implementation of climate actions. This will allow time for programs to be implemented and take effect and provide sufficient time to review data and make course adjustments as necessary to meet the City's climate targets.

CITY OF VICTORIA
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