



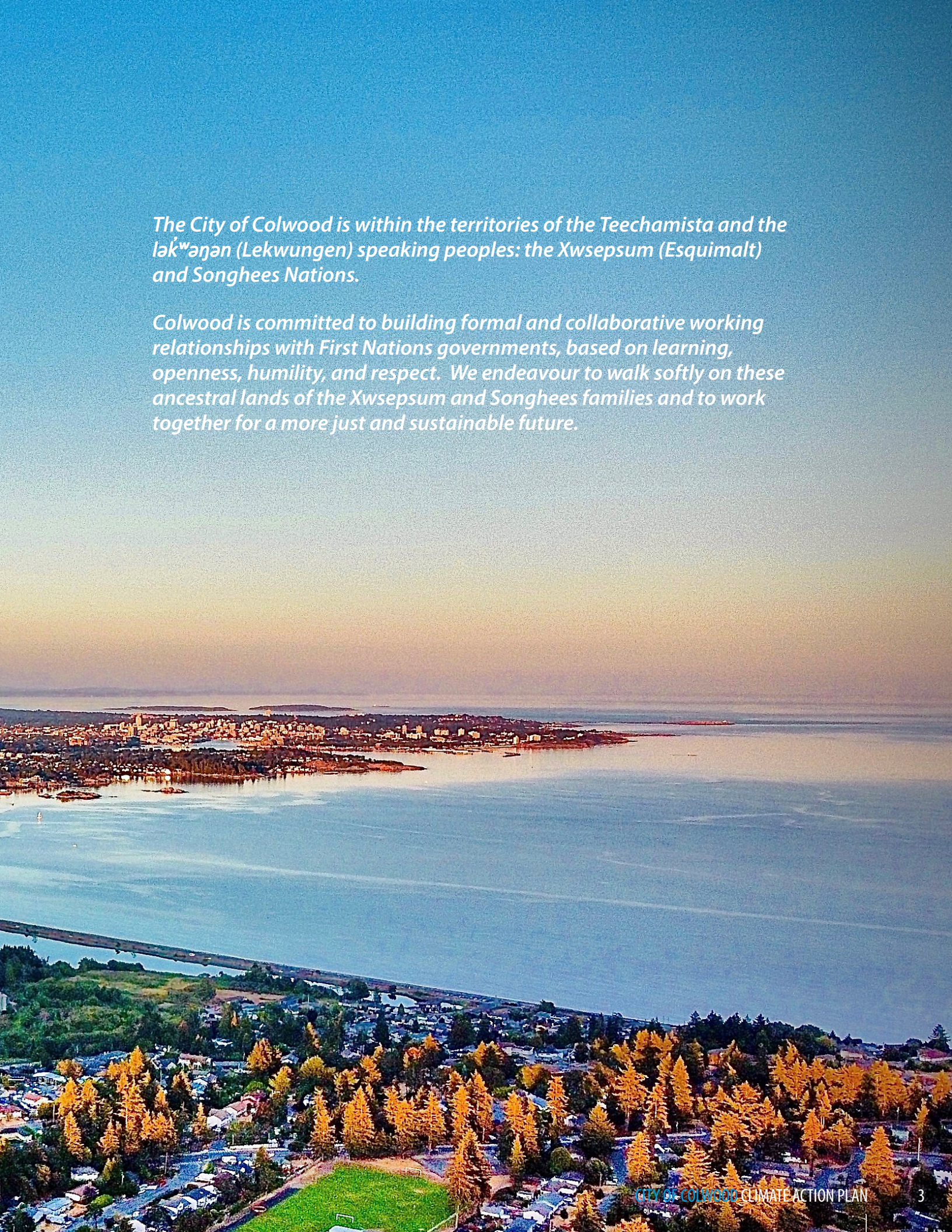
# City of Colwood **CLIMATE ACTION PLAN**

Adopted: August 28, 2023



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*The City of Colwood is within the territories of the Teechamista and the lək̓ʷəŋən (Lekwungen) speaking peoples: the Xwsepsum (Esquimalt) and Songhees Nations.*

*Colwood is committed to building formal and collaborative working relationships with First Nations governments, based on learning, openness, humility, and respect. We endeavour to walk softly on these ancestral lands of the Xwsepsum and Songhees families and to work together for a more just and sustainable future.*



# Acknowledgements

The Colwood Climate Action Plan was developed by the City of Colwood in collaboration residents and stakeholders and through the foundational report with the assistance of the Community Energy Association and FlipSide Sustainability. The plan builds on past work, including the ICLEI Report: Climate Change Adaptation Strategies for the City of Colwood (2020). Thank you to everyone who contributed to the development of this plan. **Together we are building a climate ready Colwood!**

## Residents

The residents of Colwood are strongly committed to climate action and have shown how much they value practical solutions to reducing our emissions and preparing for climate change. The dedication of residents and youth has already built the momentum for climate action in the community, including engaging with neighbours to become more resilient, growing their own food or buying locally grown food, and shifting to low carbon and active transportation like walking and cycling. Without this strong community support and commitment, it would be impossible to reach our goals.

## Mayor and Council

This project was undertaken through the direction of Mayor and Council. Their guidance, including the prioritization of resources, illustrates their commitment to taking strong action on climate change.

## Climate Action Team & Partners

A Climate Action Team came together to form the foundations of this plan, including staff and stakeholders. Stakeholders on this team included the Development Community, Royal Roads University, Island Health, the Capital Regional District, City Green, Capital Bike, WestShore Chamber of Commerce, and BC Transit. Their collective expertise, perspective, and creativity has shaped a Climate Action Plan for the community that is practical and impactful. The dedication of this team to reflect on the impact of their work on climate change, and vice versa is inspiring. We look forward to their continued support to move this plan into implementation.

# Executive Summary

The City of Colwood is taking action to protect our rapidly growing seaside community from the risks of climate change. Colwood is aligned with local governments in the region, across Canada and globally, acting urgently to reduce greenhouse gas (GHG) emissions while also preparing for a changing climate. In 2019, Colwood joined all other local governments in this region in declaring a Climate Emergency. This plan responds to the climate emergency and to the future we want: to reduce our emissions and switch to renewable energy, increase our resilience, and maximize co-benefits for improved quality of life and a resilient natural environment in Colwood.

## Vision

In 2050, the City of Colwood is a leader in integrated climate action and a community powered by renewable energy. We consider climate risk, emissions, and co-benefits in organization-wide decision making. We take resilience seriously in our built environment, among vulnerable residents, and in surrounding natural areas that support and provide services to our communities in multiple ways.

## Goals

This climate action plan includes reducing greenhouse gas emissions (mitigation), building climate resilience for a changing climate (adaptation), and maximizing the many co-benefits of integrated climate action such as benefits for human well-being and increased biodiversity protection. These goals align with provincial, national and global efforts to stabilize global temperatures and create resilient communities.



**Reduce Emissions**  
to net zero by 2050  
or sooner



**Build Climate Resilience**  
adapt to thrive



**Maximize Co-benefits**  
integrated planning



## Pathways

The City of Colwood's Climate Action Plan focuses on six pathways towards the vision and three overarching goals. Within the six pathways are strategies and actions to shift Colwood to net zero emissions (100% renewable energy), increasing climate resilience and maximizing the co-benefits of climate action.

## Climate Action Together

Achieving these climate goals requires collective action. Colwood has laid out this plan of action for what the city has control or influence over. This plan also identifies working collaboratively for collective action, including with residents, key stakeholders and organizations, our neighbours, First Nations, and senior levels of government.

## Immediate Priorities

In responding quickly to the climate emergency, our initial priorities include:

- **Climate leadership:** build capacity through a strong internal climate action team and integrate climate action into decision-making
- **Active transportation:** increase infrastructure & support for active transportation
- **Electric mobility:** develop and implement a strategy to accelerate electric mobility
- **Buildings:** implement measures to increase building efficiency, renewable energy & retrofits
- **Nature-based solutions:** develop approaches to protect & enhance ecosystem services
- **Urban tree canopy:** increase tree canopy guided by Urban Forest Strategy & equity planning
- **Community Action:** support community actions and networks, increasing individual actions

# Integrated Pathways

Six Pathways were identified to reach our vision and goals. These pathways build on the existing momentum in Colwood and prioritize actions to shift to net zero emissions, renewable energy, a community and natural areas resilient to the changing climate and maximize co-benefits.



## Municipal Leadership

Colwood is a well-managed city and a climate action leader, integrating climate resilience, zero emissions and renewable energy transitions and co-benefit opportunities into decision-making and municipal operations.

### Strategies

- M1** Ensure capacity for ongoing climate action and integrated decision-making
- M2** Update emergency planning and responses to prepare for climate changes
- M3** Ensure leadership in climate mitigation and adaptation transitions

## Transportation & Complete Communities

Colwood optimizes transit oriented, mixed density communities and connected, electrified and active transportation networks towards the target of zero emissions (renewable energy) and to advance community goals for accessibility, health, and increased quality of life. People of all ages and abilities move safely and conveniently through the city.



### Strategies

- T1** Prioritize climate resiliency of new development
- T2** Continue to prioritize increasing active transportation and connected networks
- T3** Support enhanced transit services and use
- T4** Promote affordable and accessible e-mobility

## Buildings & Infrastructure

Buildings and infrastructure in Colwood are built and retrofitted for zero emissions, climate resilience, co-benefits and are situated in low-risk areas.

### Strategies

- B1** Build zero emissions and resilient new buildings
- B2** Promote low carbon and resilient building retrofits
- B3** Ensure local energy accessibility and security







## Biodiversity & Nature-based Solutions

Biodiversity and ecosystem services are valued and protected in Colwood, increasing carbon sequestration and storage, moderating climate change impacts such as increasing sea-level rise and temperatures, and providing co-benefits such as for human health and well-being.



### Strategies

- N1** Develop a natural asset management plan and implementation policy
- N2** Protect and restore biodiversity and ecological connectivity
- N3** Prioritize nature-based solutions to integrate climate action, biodiversity protection and co-benefits

## Food & Zero Waste

The climate impact and waste of food and materials in Colwood is dramatically reduced and Colwood has transitioned to a zero-waste community. Residents have increased access to affordable, healthy and locally produced food.



### Strategies

- Z1** Reduce the climate impacts of food production and increase food security
- Z2** Reduce the climate impacts of waste through reduced consumption, zero waste, and supporting a circular economy

## Community Well-being & Eco-Innovation

Community members, businesses and organizations in Colwood are engaged and empowered and taking climate action, resulting in a resilient community with improved quality of life and a hub for thriving eco-innovation opportunities.



### Strategies

- C1** Engage, empower and support the community in climate action
- C2** Support and incentivize community eco-innovation & networks

Colwood is taking a Low Carbon Resilience (LCR) approach to respond to this crisis more effectively through integrated planning and actions for climate adaptation, mitigation, and co-benefits. This approach streamlines and mainstreams risk and vulnerability reduction (adaptation), emissions reduction (mitigation), and community co-benefits. This plan builds on the work Colwood is doing to become a climate ready community.



# 1. Responding to the Climate Emergency

In May 2019 Colwood joined all other municipal governments in this region in declaring a Climate Emergency. Locally and globally, addressing climate change is one of the most critical issues of our time. This plan is a response to the climate emergency and requires bold and collective action for success.

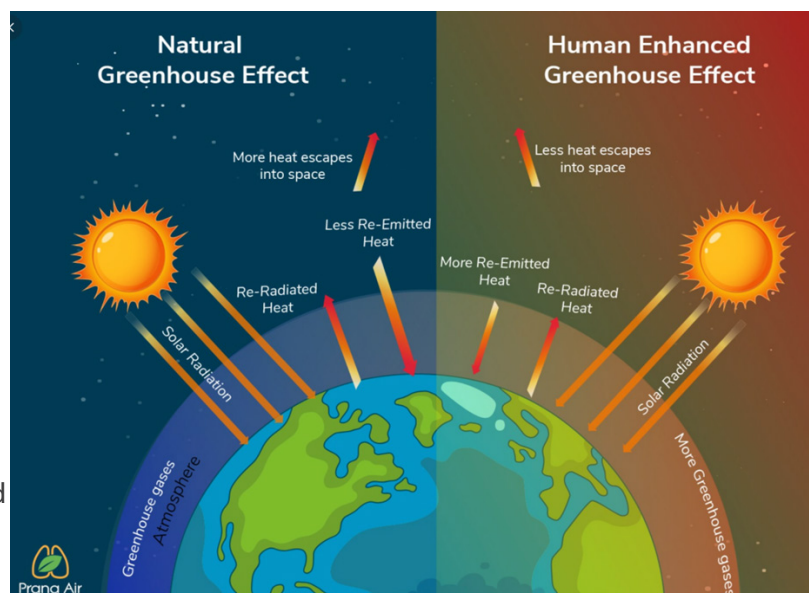
The Intergovernmental Panel on Climate Change (IPCC) has given dire warnings about the threat to human wellbeing and health of the planet. Immediate action is needed to keep warming below 1.5°C: to reduce the impacts, including avoiding severe and some irreversible impacts, and for people and nature to be able to adapt. Urgent and transformative action is needed as we are currently on track to far exceed this safer limit of warming. We must substantially reduce our emissions in the short term to minimize climate impacts in the long term.

## Understanding Climate Change

Climate change is a long-term increase in average temperatures and the range of weather conditions (including extreme) within a region. These changes include impacts such as rising sea levels and changes in the intensity and frequency of extreme events such as forest fires and storms.

Earth maintains a natural “greenhouse” from the sun’s heat stored in earth’s atmosphere, which supports life. As shown in this illustration, the climate is changing as the greenhouse effect is being enhanced from increased greenhouse gases (GHGs) trapped in the earth’s atmosphere. Currently, we are releasing GHGs into the atmosphere faster than they are being removed.

Human-caused climate change is occurring as greenhouse gases like carbon dioxide (CO<sub>2</sub>) are released into the atmosphere such as by the burning of fossil fuels (e.g. gasoline, diesel, heating oil and natural gas). Other greenhouse gases contributing to the changes include methane (such as from landfills) and nitrous oxide (such as from industrial agriculture). Releasing these gases increases the greenhouse effect and is warming the planet. This warming is leading to climate impacts such as extreme heat (like the heat dome in BC in 2021), increased flooding, droughts, and forest fires.



*The human enhanced greenhouse effect is trapping GHGs in our atmosphere, warming our planet. Image credit: Prana Air*

## Climate Change Risks in Colwood

For effective climate action, it is important to understand the local climate risks and vulnerabilities.

Colwood has valuable reports and assessments that provide the basis for understanding current and future climate hazards, the level of risk of the hazards, and the impacts or consequences. We will continue to work with partners and senior government for regular updates to risk assessments.

Key assessments that inform this plan:

- Climate Projections for the Capital Region (CRD, 2017)
- Climate Change Adaptation Strategies for the City of Colwood (ICLEI, 2020)
- Coastal Flooding and Tsunami Risk Analysis (Colwood, 2021)
- Risk and vulnerability assessment summarized in the Colwood Climate Planning Foundation Report (2022), including stakeholder analysis\* and additional assessment data from ClimateData.ca

\*Through the process for this plan, a team of internal and external stakeholders collaborated to complete a gap analysis and prioritization of climate impact statements. The climate impact statements identified locally relevant projected threats and how those changes are expected to affect the built, natural, social, and economic systems of Colwood.



Coastal flooding and inundation mapping showing scenarios on the Royal Roads University lands.  
Source: Associated Engineering & DHI Water & Environment Inc. mapping for City of Colwood.

## The Changing Climate in Colwood

We are already seeing climate impacts in the region and within Colwood, including heat waves, water shortages and increased extreme weather. The region is expecting changes such as hotter and drier summers, more and increasingly extreme winter storms, and sea level rise.

The CRD's Climate Projections for the Capital Region report (CRD, 2017) outlines what we are projected to experience in this region due to climate change:

- overall, more extreme climate events (intense storms and heat waves)
- increased precipitation in fall, winter, and spring
- decreased rainfall in summer
- more extreme hot days in summer
- warmer winter temperatures
- more frequent, intense and long-lasting rainfall events
- frequent heavy snowfalls in the short-term, less snow in the future



More rain in winter, fall, & spring



heat waves & droughts



food insecurity



**Extreme weather and sea level changes put people, infrastructure & nature at risk.**

wildfires



Sea level rise is an increasing risk, with low-lying and gently sloped beaches the most vulnerable.

Colwood Residents need to also expect:

- Layered impacts such as a heat dome occurring in conjunction with wildfires, leading to extremely poor air quality events.
- Damage to infrastructure, disruptions to transportation networks, and ecosystem impacts due to extreme weather and storm surges.
- Impacts to health, water supply, agriculture and local biodiversity.



warmer winters



extreme wind events & storms



storm surges

**The more substantially we act now will increasingly reduce the future impacts and severity of irreversible impacts.**

## The Opportunity: Call to Action

The Climate Emergency is a call to action to protect our community from climate risks and improve our quality of life. As we reduce our GHG emissions (such as burning of fossil fuels), enhance our GHG sinks (such as urban forests and natural areas that store/sequester carbon), and work to increase our resilience to a changing climate, we must make changes in our community. These changes include how we move (transportation systems), our buildings, our land use planning, the production and consumption of food and materials, and how we prepare for changes as a community.

As local governments act, we must consider what emissions we have control or influence over in our collaborations. Achieving climate goals requires collaboration from everyone: at the local and regional level to federal and global action.

Colwood's emissions come from:

- 'local' sources (created here "territorial emissions")
- 'global' sources (from local consumption)

Local consumption emissions include everything from the extraction of raw materials or production of food to processing and transport of materials that we consume. These are emissions that may be emitted elsewhere but are still ultimately our emissions.

## The City of Colwood's Role

This Climate Action Plan includes actions Colwood will take where we have direct or indirect control and direct or indirect influence. Colwood's climate action roles by area of control and influence:



## Colwood's Foundation of Climate Change

The City of Colwood has a strong commitment to and foundation for climate action. Colwood became a signatory of the BC Climate Action Charter in 2007 and has integrated climate considerations and climate actions into many plans, initiatives, and decision-making.

The City of Colwood has been building ongoing partnerships in this work and has an active community passionate about climate change action. As a local government, Colwood works within a larger climate policy landscape that includes regional, provincial and federal leadership

and initiatives. Within the region, the CRD is responsible for regional services that include the regional water supply, solid waste, wastewater treatment, regional parks, and more. The success of Colwood's climate planning and action depends on ongoing communication and collaboration.

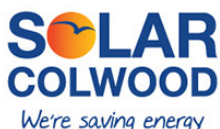
*The "OCP recognizes that community well-being is fully dependent upon the well-being of the ecosphere. Climate change is one of humanity's greatest challenges, and [the] OCP provides direction for both climate change mitigation (through GHG emission reductions) and adaptation." (Colwood OCP, 2018)*

## Highlights of Climate Action Foundation in Colwood



### Green Business Practices

Colwood City Hall was the first office on Vancouver Island to earn Green Certification from the Vancouver Island Green Business Certification (VIGBC). The Colwood Fire and Public Works Departments have since both earned certification.



### Solar Colwood

2011 – 2015 Solar Colwood program resulted in 1,000+ renewable energy and energy saving upgrades



### Climate Planning

2018 – 2020 Colwood was one of eight Vancouver Island communities in a collaborative adaptation assessment and planning program with ICLEI (International Council for Local Environmental Initiatives) Canada



### Climate Leader

2018 Colwood recognized as a Climate Leader by the province and the UBCM



### Electrifying Colwood Fleet

9 electric vehicles + 4 EVs on-order

## Integrated Planning in Colwood

This Climate Action Plan is integrated with other key plans and policies in Colwood as well as other community and regional partnership considerations.

Key Plans and Policies in Colwood:

- Official Community Plan (2018)
- Colwood Strategic Plan (upcoming in 2023)
- Parks & Recreation Master Plan (2021)
- Active Transportation Network Plan (2023)
- Master Transportation Plan (2015; update coming 2023)
- Waterfront Stewardship Plan (upcoming 2023)
- Plans in development, including: Urban Forest Strategy

Regional planning and programs:

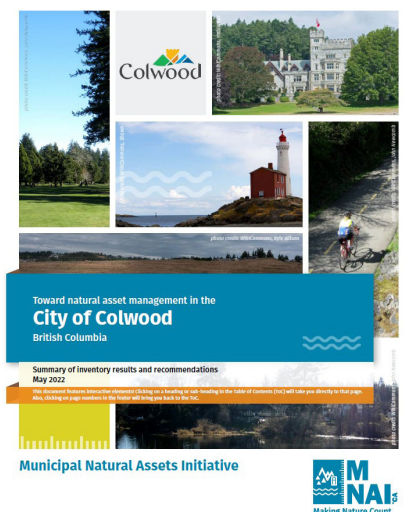
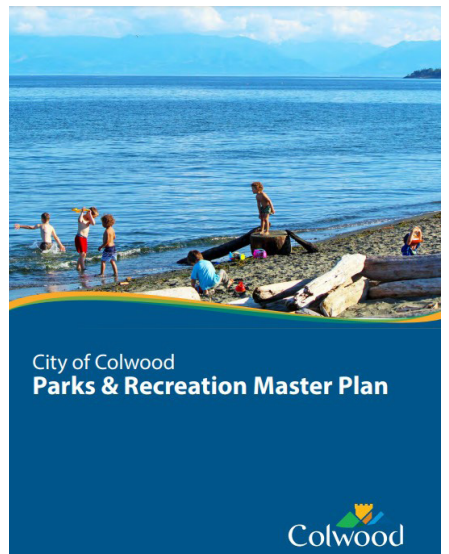
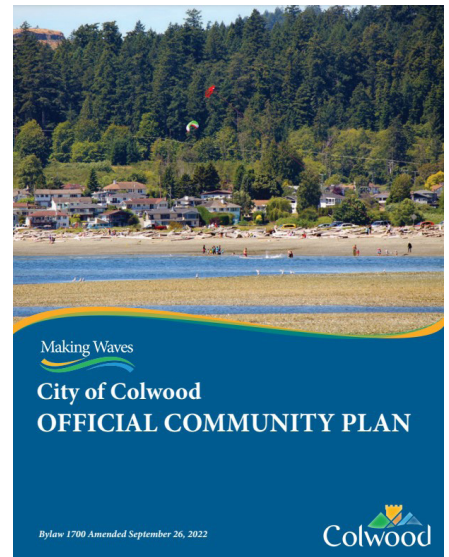
- Westshore Alert System
- CRD Climate Action Strategy (2021)
- Other related CRD regional plans and initiatives, including: Electric Vehicle Infrastructure Roadmap (2021) and energy retrofit reports

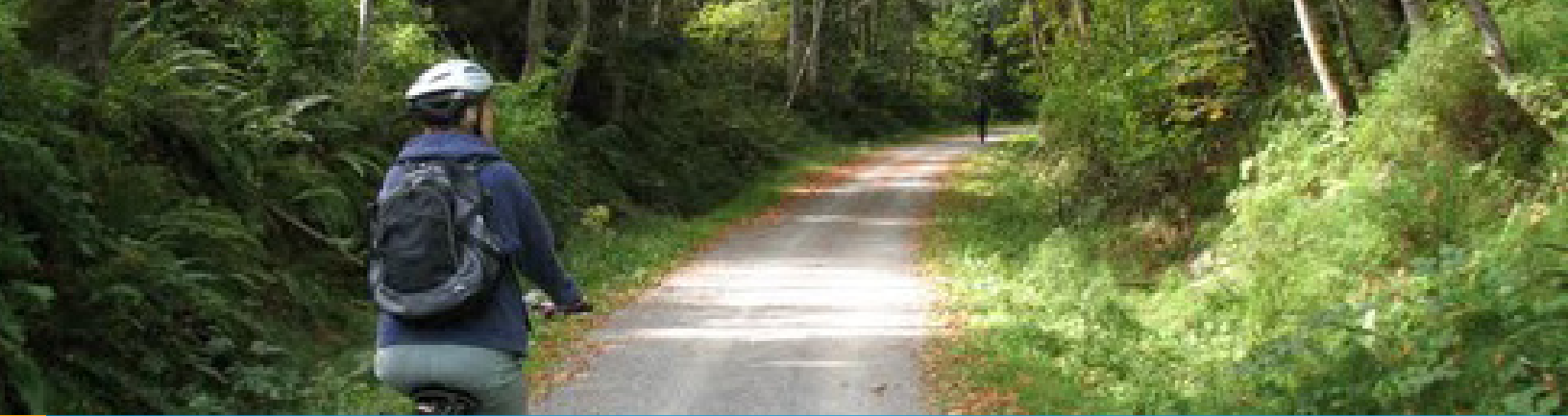
Community programs and partnerships:

- Good Neighbour Project
- Community groups such as CENiC (Citizen's Environment Network in Colwood)

Of note, Colwood has some key climate planning and related reports that contribute to this plan:

- ICLEI Canada Together for Climate Project, Climate Change Adaptation Strategies Report (2018 - 2020)
- Colwood mapping and assessments: coastal flooding/ inundation (2021) with Capital Region Coastal Flood Inundation report (2021)
- Toward Natural Asset Management in the City of Colwood (2021)

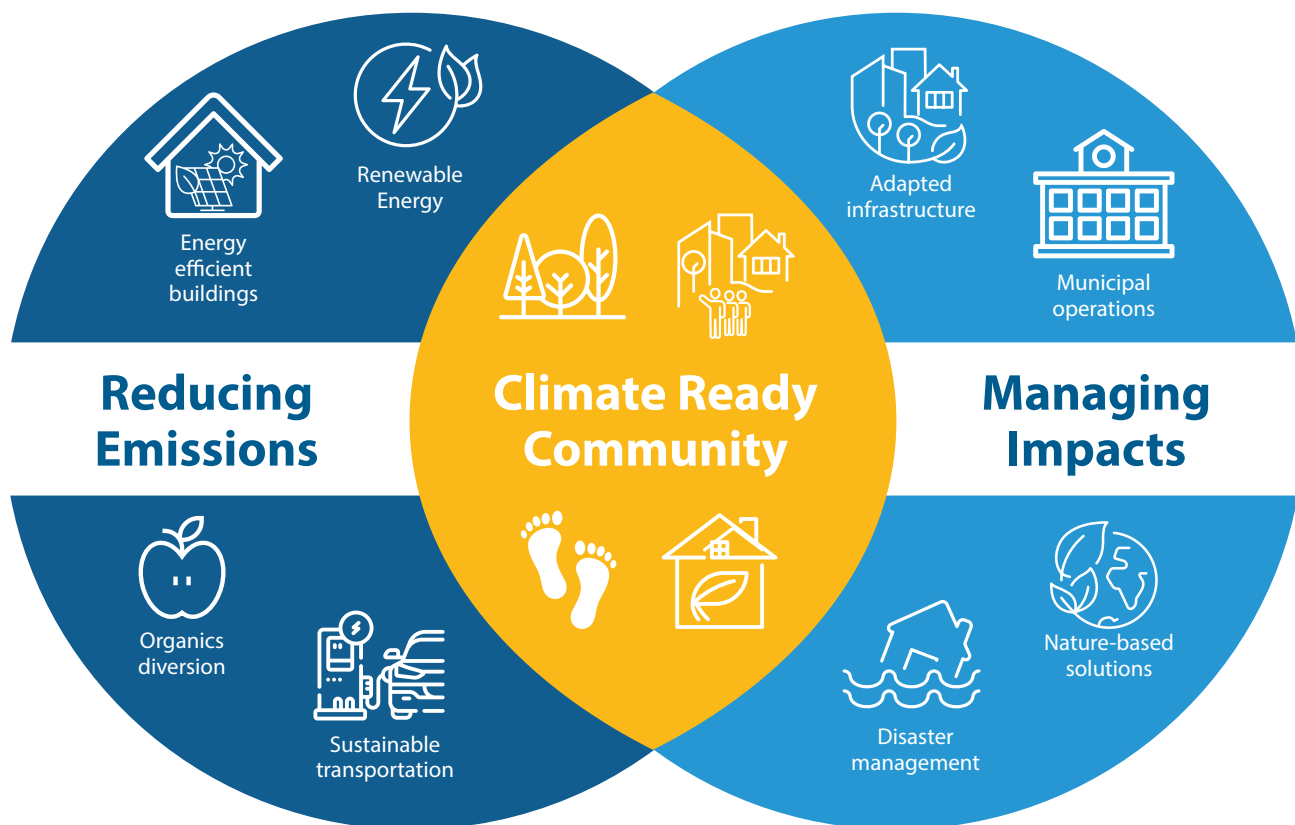




## 2. The Climate Challenge in Colwood

The following is an overview of the challenges and opportunities for Colwood as we take urgent action to address climate change. Colwood is following best practices through integrated climate action to minimize the effects of climate change impacts over time:

- **climate mitigation** - reducing emissions (and future impacts and irreversible consequences)
- **climate adaptation** - reducing risk and vulnerability (adapting to thrive in the future climate)
- **co-benefits** - maximizing climate action co-benefits for greater well-being in Colwood



**Mitigation:** Minimize and slow climate change impacts

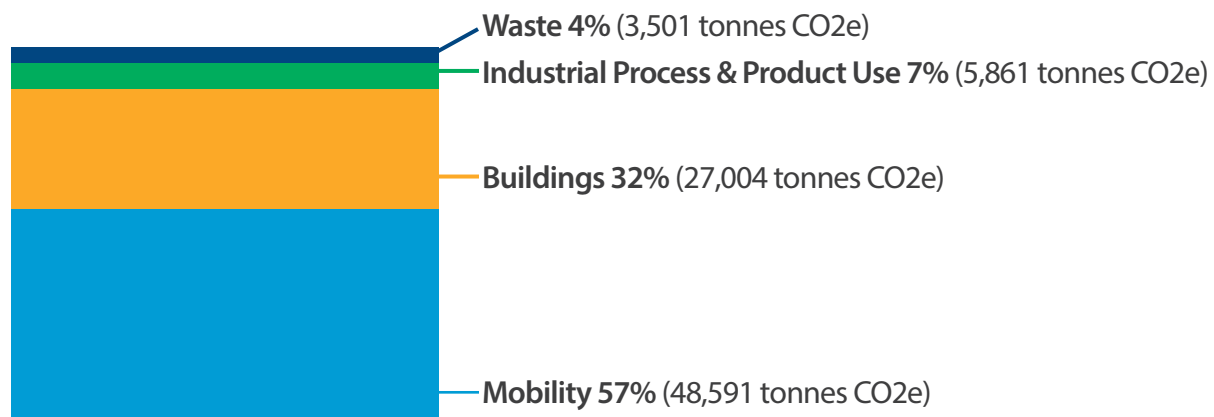
**Integrated climate planning & co-benefits** for community health & well-being

**Adaptation:** prepare & adapt to minimize risk & avoid future damage



## Mitigation: Greenhouse Gas Emissions in Colwood

It is important to understand the changes needed in Colwood to reach our greenhouse gas (GHG) emissions reduction targets and reduce our climate impact. We use GHG inventories and modelling tools to better understand emissions, plan for our reduction targets, and to monitor the results.



**Colwood 2018 Emissions** (updated)  
Total **85 kilotons (kt)** or **85,000 tonnes** of CO<sub>2</sub>e  
~ **4.6 kt** per person

## Territorial Emissions Inventory

These territorial emissions are GHGs produced within Colwood. Inventories for Colwood have been commissioned by the CRD (conducted by Stantec), following the GPC Basic+ methodology. For the information presented here, the 2018 inventory was used with updates from the 2020 methodology report. This is the most recent inventory not affected by COVID-19 (such as reduced transportation results). The majority of Colwood's emissions are fossil fuels from transportation (e.g., gasoline and diesel) and fossil fuels used in buildings (e.g., natural gas and oil). Waste includes methane emissions, which is 25x more potent than CO<sub>2</sub> at trapping heat in the atmosphere. (See Colwood's Climate Planning Foundations Report, 2022 for more information.)

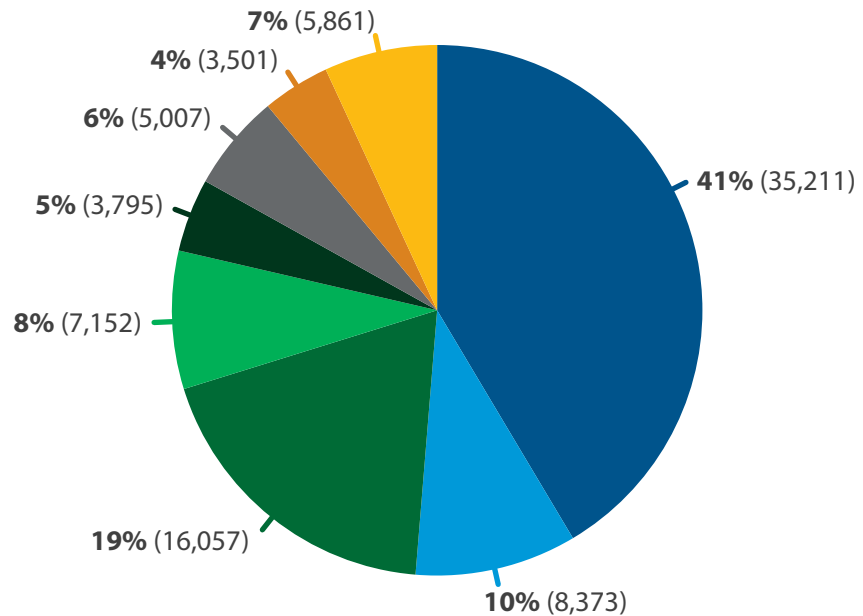
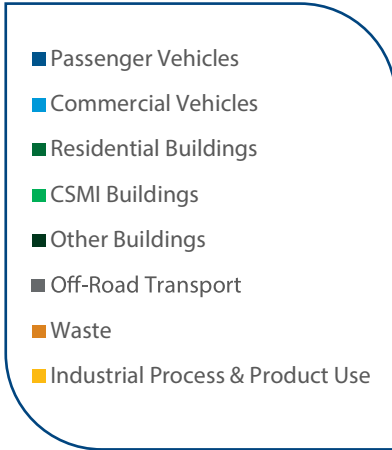
## Consumption or Embodied Emissions

While the territorial emissions inventories follow international methodology and are aligned with areas of municipal control or influence, consumption emissions are also important to consider. Consumption-based emissions include all the goods and services within the community, despite where they were produced in the world. While Colwood does not yet have a consumption-based inventory, other municipalities are beginning to consider this level of emissions inventory as an important lens to reduce global emissions. These emissions are important for everyone to consider such as: how a product was created, how far it traveled, and how it is packaged. We need to consider how to reduce the high embodied emissions in building construction and renovation. This plan includes initial steps for Colwood to address embodied emissions for construction and retrofits. **The embodied emissions of what we consume and how we build are important for everyone to consider.**

## Understanding Colwood's Emissions

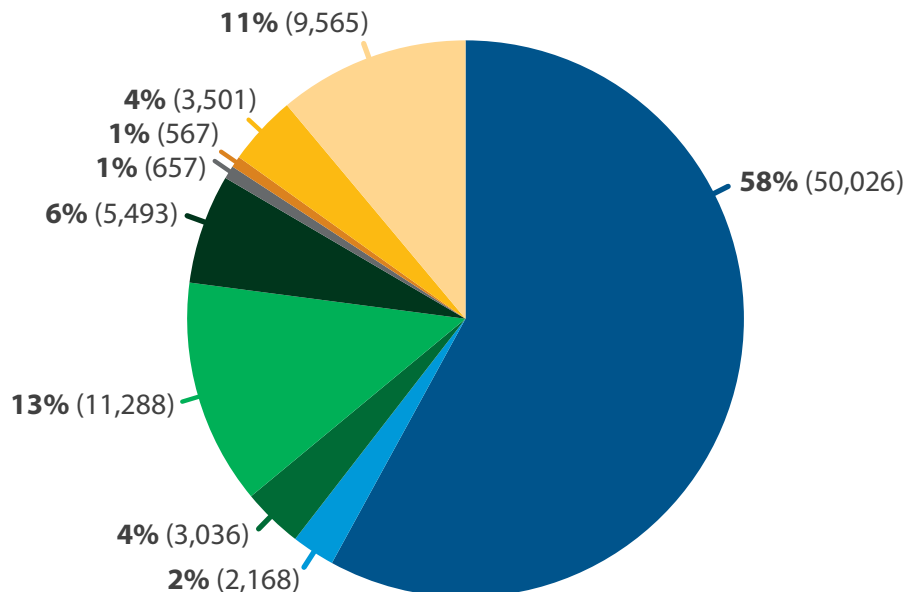
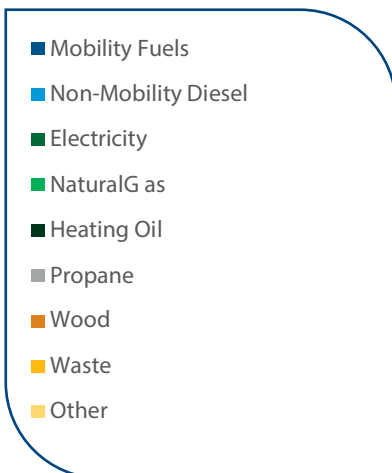
The chart below shows the emissions in Colwood by sector. Passenger vehicles are the largest source of emissions, followed by residential buildings. Commercial vehicles and Commercial and Small-Medium Industrial Buildings (CSMI) are also very important emissions sources.

### Colwood's 2018 emissions sources by sector (tCO<sub>2</sub>e)



This chart shows Colwood's emissions based on energy sources. At 58%, mobility fuels are responsible for most of Colwood's GHGs emissions. Natural gas is responsible for a high proportion of GHGs due to its low cost and higher emissions. Most of BC's electricity is generated by renewable energy, so this is one of the lowest sources of emissions (and there are provincial plans in place to make it fully renewable).

### Colwood's 2018 emissions by source (percentage and tCO<sub>2</sub>e)

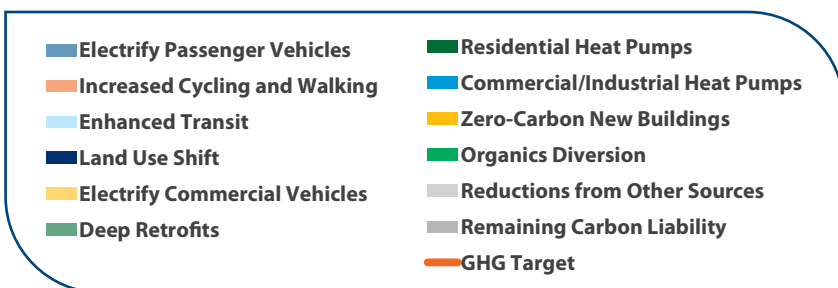
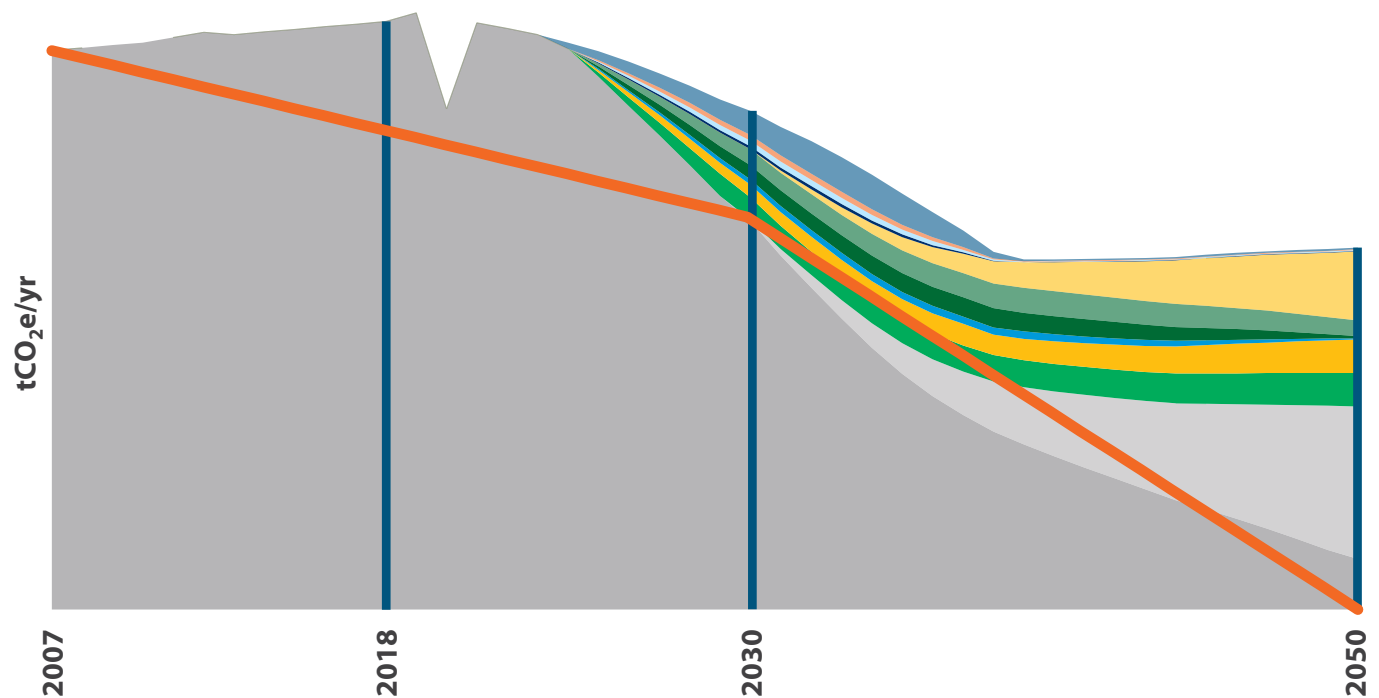


## Colwood Emissions Projections

A modelling tool shows us our projected Business As Usual (BAU) emissions if we were to take no action. The BAU projections include actions committed to by the provincial and federal governments as well as other trends. As shown in the graph below, a green line indicates our emissions targets. This Climate Action Plan aims to close the emissions gap between BAU and the net-zero emissions target.

Note: in the BAU projections, passenger vehicle emissions are forecast to decrease due to policies and commitments from senior government, but municipal governments have critical roles regarding electric vehicle infrastructure and in accelerating vehicle and mobility transitions.

### Emissions Reductions By Action From BAU, tonnes/year



## Reducing Our Emissions

In Colwood we can reduce our GHG emissions by reducing our energy consumption, switching to renewable energy sources, increasing sequestration of carbon and reducing waste and consumption.

### Renewable Energy

Colwood's goal of net-zero emissions by 2050 includes the need to transition from fossil fuels to 100% renewable energy. Currently BC Hydro electricity is 98% renewable and there is a provincial commitment to phase out the last gas-powered facility by 2030 to be 100% renewable. Options for renewable energy include solar, wind, and biomass/ landfill gas. While new energy sources must be planned to reduce unintended negative impacts, such as to ecosystems, there are many co-benefits including reduced energy poverty, increased air quality, employment and business opportunities.

### Energy Conservation

Meeting Colwood's emissions reductions targets requires significant energy conservation. A few examples of ways we can conserve energy include increased energy efficiency in buildings, increasing active transportation, reduced waste, and increased tree canopy around buildings that reduces heating/cooling needs. Co-benefits of energy conservation are many, including economic and for human health/well-being.

### Carbon Sequestration & Storage

Colwood can increase the sequestration of carbon – the removal of carbon from the atmosphere in natural areas and protect that carbon storage in the biomass, roots, and soil. We can increase natural carbon sequestration processes such as through trees and restoring/ increasing ecosystems. Wetlands such as salt marshes and older forests are examples of ecosystems with high sequestration values. Co-benefits to nature-based solutions for climate action include protecting and increasing biodiversity and ecosystem services, reducing heat impacts, human health and cultural values.

### Waste and Consumption

Colwood will work with regional partners and the community on reducing and eliminating the emissions from waste, through steps that reduce waste and recovery/ management of residual waste emissions (see page 51). In addition, Colwood will look at measures that help to understand and reduce consumption-related emissions. The residents, businesses and organizations have important roles to play in recognizing and reducing consumption-related emissions. There are great opportunities for innovation for addressing waste and consumption.

## Roadmap to Net-Zero Emissions Goals

In order to meet our emissions reduction targets, a modeling tool was used to calculate Colwood’s potential reductions for actions in this plan. This “roadmap” to our targets will need to be re-evaluated and adjusted in 3-5 years with new information, including changes resulting from future senior government legislation.

The emissions in this calculation are based on the CRD territorial emissions inventories for Colwood, with adjustments made for 2020 methodology and removing the non-influenceable carbon attributed to Colwood. This plan includes actions to reduce emissions within control or influence in order to meet our 2030 and 2050 targets. The calculations show the reduced emissions from our 2007 baseline that will be achieved through these actions by 2030.

Colwood’s Climate Action Plan includes additional actions towards emissions reduction and carbon sequestration for which there is currently not modeling available. That said, further development affecting ecosystems and trees would also release carbon and reduce carbon sequestration.

Action	Emissions Reduction Potential (tCO2e to 2030)
Increased active transportation (such as cycling and walking)	840
Enhanced transit	420
Electrified transit	660
Electrify passenger vehicles	3,600
Decarbonize city fleet	120
New home efficiency	1,850
Residential heat pumps	2,090
Commercial heat pumps	810
Commercial retrofits	720
Residential retrofits	1,550
City building retrofits	80
Residential solar PV	20
Commercial solar PV	30
Urban tree canopy	1,250
Residential organics diversion	1,740
Commercial organics diversion	1,580
	<b>17,360 tCO2e</b> (emissions decrease to 2023)
Reduced emissions from senior government actions	7,860
<b>Total reductions by 2030</b>	<b>25,220 tCO2e</b> (Total emissions reduction from 2007 emissions by 2030)



*Governments set the stage, but it is residents and businesses who make daily decisions to reduce their emissions and carbon footprint.*

*“Climate change adaptation is about proactively understanding and preparing for the changing climate and reducing climate-related risks. Some climate impacts are related to sudden disaster events, such as flooding and wildfire, while others occur more slowly over time such as sea level rise, species and ecosystem shifts, and water shortages” (Province of BC, 2022).*

## Adaptation: Adapting to Thrive in a Changing Climate

Climate change is already impacting communities and infrastructure, ecosystems and biodiversity and our economy.

Key climate impacts and risks for Colwood are summarized on page 10: the Changing Climate in Colwood. Colwood will continue to work with regional partners in reviewing and updating our climate risks and vulnerabilities so we can effectively prepare for a climate resilient community.

**Climate resilience** is about building our ability to prepare for, recover from and adapt to the impacts of climate change (C2ES, 2019). As we take action to adapt, we work continually to reduce our risks and vulnerability. Through the integrated approaches, we also increase our resilience by reducing future climate impacts through mitigation (reducing our emissions).



### Strategic Adaptation



If we adapt to heat waves by using fossil fuel powered air conditioning, this will increase energy use and emissions (thus increasing climate impacts).

Building a hard seawall to protect against sea level rise and storm surge uses GHG emissions-intensive materials and negatively impacts shoreline ecosystems.



**Instead, we can use strategic approaches such as electric heat pumps (renewable energy), which provide cooling and we can increase tree cover and natural areas to reduce the effects of heat waves (which also sequesters carbon and has other positive benefits).**

**Instead, we can restore natural assets and shorelines to provide effective natural protection, with little to no emissions, increase carbon storage and sequestration, as well as provide many other positive benefits.**

## Climate Action Co-benefits in Colwood

A key goal of Colwood’s climate action plan is to maximize co-benefits of climate action, providing many other benefits to residents and the community. Integrated climate planning (Low Carbon Resilience “LCR” approach) includes linking climate action with broader sustainable community development. Climate policies and initiatives are planned to maximize co-benefits, such as positive social, economic, and environmental results while reducing climate risks and emissions.

Co-benefits identified in this plan include:

### Environmental Co-benefits



Improve air & water quality



Protect & enhance ecosystems



Increase ecosystem services



Protect & enhance biodiversity



Reduce loss of natural areas



Increase recreational opportunities



Protect cultural values



Protect species at risk



Protect & improve soil quality

### Social Co-benefits



Improve physical and mental health



Increase social connectivity



Increase services & amenities



Improve social inclusion and equity



Foster youth leadership



Improve regional connectivity



Improve public safety



Shift to sustainable behaviours



Improve emergency preparedness

### Economic Co-benefits



Foster green economic growth



Increase green innovation



Reduce risks to property values



Increase new training opportunities



Reduce energy poverty



City/taxpayer cost savings



Diversify the local economy



Promote a circular economy



Reduce waste & optimize resources

## 3. The Climate Action Plan

Colwood joins communities in our region, across BC, Canada and globally, taking action reduce climate change associated risks and improve the overall well-being of our community. This Climate Action Plan integrates mitigation (reducing greenhouse gas emissions), adaptation (preparing for climate changes), and maximizing co-benefits of these actions to improve the quality of life and reduce climate risks in Colwood. This plan is focused on the City's operations and leadership as well as across the whole community of Colwood.

### Vision

In 2050, the City of Colwood is a leader in integrated climate action and a community powered by renewable energy. We consider climate risk, emissions, and co-benefits in organization-wide decision making. We take resilience seriously in our built environment, among vulnerable residents, and in surrounding natural areas that support and provide services to our communities in multiple ways.





# Goals



## Reduce Emissions

to net zero by 2050  
or sooner

Colwood is committed to becoming a net zero community by 2050 or sooner, powered by 100% renewable energy. By 2030, we aim to reduce community greenhouse gas (GHG) emissions to 30% (territorial emissions, based on 2007) and per capita (individual) emissions by 50%. Currently, ~32% of Colwood's energy use is from renewable sources. To meet our goals we must transition away from fossil fuels to renewable energy



## Build Climate Resilience

adapt to thrive

To protect our community, Colwood must adapt to current and future changes in the climate. We face many challenges, including for human well-being, the economy, infrastructure, and our natural environment. This plan will build our resilience to the current and future challenges. As we face challenges such as sea-level rise, increasing temperatures and storm intensity and changing weather patterns, we must adapt for our community to thrive.



## Maximize Co-benefits

integrated planning

Through integrated planning, we aim to maximize co-benefits to climate action in Colwood. As we take action to reduce climate risks and emissions, we will intentionally plan to maximize social, economic, and ecosystem co-benefits of these actions. Climate action will be linked with overall sustainable community development through a systems-thinking approach.

## The Process

The process to develop this Climate Action Plan began in February 2022, building on prior climate planning, assessments, and initiatives.

The development of the plan included:

- Engagement and input from staff, the public and stakeholders, including:
  - » 3 public surveys & a youth survey
  - » 3 public workshops
- Guidance by a Climate Action Team of internal (interdepartmental staff representatives) and external stakeholders
- Assessments of climate change risks and vulnerabilities along with GHG emissions modeling
- Council endorsement of the initial work to move forward to public engagement in November 2022.
- Draft update in 2023, following public engagement, to transform the initial detailed document into a foundational report and provide an accessible and engaging Climate Action Plan.



For more information about Colwood's climate planning engagement, see the Climate Planning Foundations Report that is linked to this plan.



## 4. Colwood Pathways and Actions

Colwood's Climate Action Plan is based on a framework of 6 pathways with objectives, strategies and actions under each pathway. The pathways build on Colwood's existing momentum and are the focus areas for action to shift from business-as-usual emissions and risk scenario to a zero emissions and low risk scenario. The actions in each strategy are concrete steps towards reaching the objectives, indicators and targets in each pathway. Initial indicators and targets are included in each pathway, but there are more to be developed through implementation of the plan.

Appendix A provides a summary action table for all pathways.





# Pathway 1: Municipal Leadership

## Vision

The City of Colwood is well-managed and showcases leadership in climate action by considering climate risk, emissions, and co-benefit opportunities in all planning, procurement, and investment decisions. Integrated climate planning helps Colwood deliver services and manage assets in a financially and environmentally responsible manner.

Objectives	Strategies
 <p>Colwood is a climate leader in meeting community climate goals and municipal zero emissions target by 2045</p>	<p><b>M1:</b> Ensure capacity for ongoing climate action and integrated decision-making</p> <hr/> <p><b>M2:</b> Update emergency planning and responses to prepare for climate changes</p> <hr/> <p><b>M3:</b> Ensure leadership in climate mitigation and adaptation transitions</p>

Municipal leadership in Colwood towards a net-zero and resilient community requires:

- Interdepartmental collaboration and climate-trained staff
- Collaboration and partnerships within the community, region and beyond
- Integrated climate action and internal tools to enable effective decision-making and maximizing co-benefits of climate action
- Effective communication on the urgency and approaches of climate action
- Having updated climate projections for planning and response

Colwood is continuing to build on our municipal climate leadership. A few highlights of our leadership and actions to date include:

- Establishment of an internal Climate Action Team
- A climate action funding process
- Electrifying our fleet and equipment (started)
- Preliminary municipal building retrofits

## Municipal Leadership in Action

The following describes actions planned towards each of the 3 strategies under Municipal Leadership. Note that an action table with additional information is included in Appendix A.

### Strategy M1:

Ensure capacity and resources for ongoing climate action and integrated decision-making

#### M1-1 Allocate and manage climate action financing

Ensure the annual service review includes specific reporting on implementation of the climate action plan and identification of resource needs.

#### M1-2 Climate action team

Build the capacity of the internal Climate Action Team to support implementation, update, and track progress of the Climate Action Plan across departments.

#### M1-3 Climate implications in decision-making

Develop and implement a “climate implications” section for Council reports and sustainability checklists for development applications and capital projects.

#### M1-4 Climate communications

Provide ongoing and regular community communications to support the climate plan implementation & community awareness. Use communications tools to mainstream climate action in the community such as long-term impacts and costs, short-term solutions-building, incentives, and collaboration opportunities.

### Strategy M2:

Update Emergency Planning and responses to prepare for climate change

#### M2-1 Hazard, risk and vulnerability analysis

Update the City's Hazard, Risk and Vulnerability Analysis to embed climate change projections and align with the climate plan, comply with provincial requirements, and identify partnership opportunities. Assess across infrastructure and services, ecosystems, and residents, including with an equity lens. Identify streamlined actions and partnership opportunities.

#### M2-2 Early warning alert system

Establish a city policy for an early warning alert system that incorporates climate-related disaster planning and communications.

#### M2-3 Emergency Communications Plan

Establish an emergency communications plan that incorporates climate-related emergencies and considers partnerships for responses.

## Municipal Leadership in Action

### Strategy M3:

**Leadership: ensure leadership in climate mitigation and adaptation transitions**

#### **M3-1 Education**

Develop and provide ongoing climate training for staff, such as in collaboration with Royal Roads University. Education will include broad level training as well as specific needs to support municipal roles and climate action delivery.

#### **M3-2 New civic buildings policy**

Develop a policy requiring new civic buildings to be zero emissions, highly energy efficient, and resilient to climate change.

#### **M3-3 Retrofit municipal buildings**

Lead by example by retrofitting all City controlled buildings to be zero emissions (by 2050) and resilient.

#### **M3-4 Electrify Colwood fleet**

Adopt ZEV prioritization for the Fleet and adjust replacement timelines for ZEV introduction (i.e., availability of new products), with a municipal zero emissions target by 2045.

#### **M3-5 Electrify maintenance equipment**

Phase in electric replacements for smaller equipment such as for landscape maintenance and extend policy to contracted services with a municipal zero emissions target of 2045. Explore leadership options for community transition to electrified equipment.

#### **M3-6 Municipal Hall nature-based solutions**

Showcase nature-based solutions (NbS) related approaches at the Municipal Hall, including increased tree canopy and biodiversity. Link with actions under Biodiversity and Nature-based Solutions pathway.

#### **M3-7 Corporate waste reduction**

Include waste reduction and zero waste initiatives in municipal operations and as a leader for the Zero Waste Strategy.

#### **M3-8 Develop a climate-friendly commuter program**

Develop a program to provide support and incentives to encourage City employees to use active transportation, take public transit, or carpool to work.

### Co-benefits

Planning and implementing these actions will factor in opportunities to maximize co-benefits. Linked to the actions within this pathway are especially opportunities for co-benefits related to:

- Public mental and physical health
- Cost savings
- Awareness and education
- Community cohesion and livability






## Indicators and Targets

Measuring and reporting on the results of our climate actions is important for transparency and accountability, but also our ability to implement adaptive management and to increase success. Additional indicators and targets will be developed as specific action items are planned and implemented. Annual reporting will include the status of action items, which is also helpful for actions that are not easy to measure.

Objective	Indicators	Targets	
Colwood is a climate leader in meeting community climate goals and municipal zero emissions target by 2045	Number of annual climate action team meetings	At least 6 meeting per year	
	Number of staff climate training opportunities	Climate 101 training for on-boarding and at least 1 specific climate training session per year for Colwood staff	
	Number of applicable staff who have taken Climate 101 training	50% by 2024 and 100% by 2025	
	Regular climate-related communications to Colwood residents	Climate-related communications occurring at least once per month (web/e-news/social media, etc)	
	Emergency planning integrated and updated with climate planning	All applicable emergency plans are updated by the end of 2024	
	Increase in municipal building climate-related retrofits	Annual increase in municipal building retrofits for emissions and adaptation	
	Increase in renewable energy for municipal buildings	Engage West Shore Parks and Recreation in plans and development of targets	
	Number of vehicles with EVs and equipment replaced with electric power alternatives		100% of fleet and equipment replaced by 2045
			Start replacement of heavy vehicles in 2023.
	Number of municipal waste reduction initiatives	At least 1 new initiative implemented per year, ongoing	
Successful leadership in reducing GHG emissions per capita	Per capita GHG emissions reduction levels from 2007 levels: 50% by 2030 and 100% by 2050.		
Successful leadership in reducing GHG emissions community-wide	Total GHG emissions reduction from 2007 levels: 30% by 2030, 100% by 2050.		

## Pathway 2: Transportation and Complete Communities

**Vision** Colwood optimizes transit oriented, mixed density communities and connected, electrified and active transportation networks towards the target of zero emissions (renewable energy) and to advance community goals for accessibility, health, and increased quality of life. People of all ages and abilities move safely and conveniently through the city.

Objectives	Strategies
	<p><b>T1</b> Prioritize climate resiliency of new development</p>
	<p><b>T2</b> Continue to prioritize increasing active transportation and connected networks</p>
	<p><b>T3</b> Support enhanced transit services and use</p>
<p>Prioritize implementation and enhancement of Colwood policies to incentivize complete communities with mixed density growth and diverse (multi-modal) zero emissions transportation systems (i.e., OCP updates, upzoning initiative)</p> <hr/> <p>Expand public transit use to 12% of trips and active transportation to 18% of trips.</p> <hr/> <p>Reduce transportation emissions in Colwood 100% by 2050</p>	<p><b>T4</b> Promote affordability and accessible e-mobility</p>

Colwood is a quickly growing community with over 64% higher growth than the average for municipalities in this region. By planning for complete and compact communities that are well connected by active and public transportation systems, we can:

- significantly reduce transportation emissions
- improve local air quality
- preserve or increase ecosystem services
- increase daily interactions with nature
- improve public health and well-being
- reduce costs for residents (e.g., transportation and household water and energy)
- reduce municipal infrastructure costs
- reduce embodied emissions of the community

In 2018 it was estimated that only 2% of Colwood’s population lives within a five-minute walk of a grocery store and 13% within a ten-minute walk. Colwood’s OCP currently includes a goal for nearly all residents to live within a ten-minute walk to groceries and services.

## Transportation and Complete Communities in Action

The following describes actions planned towards each of the 4 strategies under the Transportation and Complete Communities pathway. Note that an action table with additional information is included in Appendix A.

### Strategy T1:

#### Prioritize climate resiliency of new development

##### T1-1 Official Community Plan Updates

Continue the focused growth direction in the OCP and review the land use map to support the development of mixed use and transit-friendly density, active transportation infrastructure, and to prevent new development in high risk areas (re: flood, erosion and sea level rise).

##### T1-2 Promote smart growth

Promote and facilitate smart growth in Colwood, including implementing a sustainability checklist, considering incentives, and assessing long-term financial impacts of new development proposals.

##### T1-3 Parking Bylaw Updates

Adjust Parking Bylaw to support increased EV use/ charging, efficient use of current parking, and improved walkability. Consider options such

as shared parking between different uses and alternative transportation options to reduce parking requirements for multi-use residential buildings.

##### T1-4 Reduce non-resilient land-uses

Provide ongoing and regular community communications to support the climate plan implementation & community awareness. Use communications tools to mainstream climate action in the community such as long-term impacts and costs, short-term solutions-building, incentives, and collaboration opportunities.

##### T1-5 Update Transportation Master Plan

Prioritize updating the Transportation Master Plan for improved Transportation Demand Management and the use of multi-model traffic data for traffic management.

# Transportation and Complete Communities in Action

## Strategy T2:

### Increase active transportation & connected networks

#### T2-1 Active Transportation Plan

Accelerate the implementation of a plan that supports active transportation routes and infrastructure, guides the development of new policies and bylaws, and links active transportation and transit networks. Priorities include:

- expansion of cycling infrastructure along priority corridors
- extending active transportation routes to key destinations and enhancing connectivity
- linking active transportation and transit networks
- providing secure and weather resistant bike parking at transit nodes
- measures to improve biking experiences
- updating bylaws to expand the use of zero emissions alternative transportation.

#### T2-2 Reduced speed limits

Adopt 30 km/hr speed limits in more areas of the community (e.g., dense areas, major active transportation corridors)

#### T2-3 Expand pedestrian spaces

Build in opportunities to expand pedestrian spaces in new developments (e.g., Royal Beach and Royal Bay) to convert street space into pedestrian only or pedestrian friendly land uses.

#### T2-4 Active school travel planning

Continue partnerships and expand active school travel planning in Colwood, including the Ready Step Roll (RSR) program.

#### T2-5 Active transportation sensors

Prioritize implementation of active transportation network sensors (2023 capital project).

#### T2-6 Biking facility requirements

Ensure end-of-trip facility requirements in the Parking Bylaw are applied to increase biking transportation and monitor for any improvements needed.

#### T2-7 Support car free events

Work in partnership to establish car-free events to connect community members with each other.

## Transportation and Complete Communities in Action

### Strategy T3:

#### Support enhanced transit services and use

##### T3-1 Improve transit services

Work with partners (VRTC, BC Transit) to continuously improve transit services, support a rapid transit network, and transition to a zero-emissions transit network. Included, support a rapid transit network hub for Royal Bay / Royal Beach and work with BC Transit to provide rapid transit to Colwood Corners and the Seaside Village neighbourhoods.

##### T3-2 Increase transit infrastructure

Increase infrastructure for transit including dedicated bus lanes and transit amenities through developments.

##### T3-3 Promote transit use

Work with partners to promote transit ridership including free transit days (e.g. special events, or poor weather) and celebrating new routes.

### Strategy T4:

#### Promote affordable and accessible e-mobility

##### T4-1 Electric mobility strategy

Develop and implement a strategy to support and promote zero emissions mobility options. Include in an Electric Mobility Strategy: EV-ready building requirements, EV charging in existing buildings, an EV & e-Mobility Outreach program, support for the establishment of an e-Bike Share program, partnerships to increase car sharing and car sharing infrastructure, support for CRD's EV Infrastructure Roadmap, and increased municipal installation of EV chargers.

##### T4-2 Electric mobility outreach

Develop communications and outreach plans to support electric transportation transition and the Electric Mobility Strategy.

##### T4-3 Electric mobility partnerships

Work in partnership and through internal policies and initiatives to support regional and provincial initiatives for e-Mobility transitions.

### Co-benefits

Planning and implementing these actions provide opportunities to maximize priority co-benefits. Opportunities for co-benefits especially linked within this pathway include:

- Public mental and physical health
- Cost savings
- Community cohesion and livability
- Ecosystem preservation
- Regional collaboration and connectivity
- Improved air and water quality

## Indicators and Targets

Measuring and reporting on the results of our climate actions is important for annual reporting that is linked with transparency and accountability, but also our ability to implement adaptive management and to increase success. Additional indicators and targets will be developed as specific action items are planned and implemented. Targets below include those aligned with the Active Transportation Plan. Annual reporting will include the status of action items, which is also helpful for actions that are not easy to measure.

Objective	Indicators	Targets
<p>Prioritize implementation and enhancement of Colwood policies to incentivize complete communities with mixed density growth and diverse (multi-modal) zero emissions transportation systems (i.e., OCP updates, upzoning initiative).</p> <p>Expand public transit use to 12% of trips and active transportation to 18% of trips.</p> <p>Reduce transportation emissions in Colwood 100% by 2050</p>	Increased use of sustainable transportation modes	Sustainable transportation modes (walking, cycling, transit) represent 75% of all trips made.
	Increased connected active and public transportation	Every bus stop is connected by a sidewalk, walkway or other pedestrian facility that permits universal access to transit.
		All transit exchanges are equipped for multi-modal trips, including long-term bike parking and e-bike charging
	Increased cycling infrastructure (including cycling lanes at ~8.3 km in 2023)	Cycling infrastructure has been increased by 16 km by 2033
		All commercial areas and recreation centres are connected by AAA cycling infrastructure and include bicycle parking
		Every public park in Colwood has bicycle parking by 2033
		By 2033, each of our 12 neighbourhoods has access to a AAA cycling corridor connecting to the rest of the cycling network
	Increased pedestrian infrastructure (at ~38 km of sidewalks in 2023)	By 2033, pedestrian infrastructure has been increased by 6 km
		All new pedestrian facilities have been designed to be universally accessible.

## Indicators and Targets

Measuring and reporting on the results of our climate actions is important for annual reporting that is linked with transparency and accountability, but also our ability to implement adaptive management and to increase success. Additional indicators and targets will be developed as specific action items are planned and implemented. Targets below include those aligned with the Active Transportation Plan. Annual reporting will include the status of action items, which is also helpful for actions that are not easy to measure.


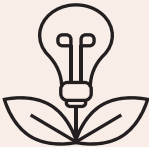

Objective	Indicators	Targets
<p>Prioritize implementation and enhancement of Colwood policies to incentivize complete communities with mixed density growth and diverse (multi-modal) zero emissions transportation systems (i.e., OCP updates, upzoning initiative).</p>	<p>Increased active school travel planning</p>	<p>All elementary and middle schools (6) have participated in the Ready, Step, Roll Active School Travel Planning program.</p>
<p>Expand public transit use to 12% of trips and active transportation to 18% of trips.</p> <p>Reduce transportation emissions in Colwood 100% by 2050</p>	<p>Accelerate transition to e-mobility</p>	<p>E-mobility targets set through development of e-mobility strategy</p>

\*Note: some of these targets are aligned with Colwood’s Active Transportation Network Plan, which includes additional related targets.

## Pathway 3: Building & Infrastructure

### Vision

Buildings and infrastructure in Colwood are built and retrofitted for zero emissions, efficiency, climate resilience, co-benefits and are situated in low-risk areas.

	Objectives	Strategies
	Maintain construction requirements for energy, efficiency, and resiliency that are higher than provincial requirements leading to 100% net-zero energy ready construction by 2032	<b>B1: Build zero emissions and resilient new buildings</b>
	Existing residences in Colwood are increasingly retrofitted for energy efficiency and clean energy sources (2% per year for heat pumps and 3% per year for energy efficiency measures)	<b>B2: Accelerate building retrofits for efficiency, renewable energy and resiliency</b>
	Advocate for and support increased local renewable energy production	<b>B3: Ensure local energy accessibility and security</b>

In Colwood, 29% of GHG emissions are from buildings. Most residents live in low-density, single-family housing with just 11% living in apartments. Increasing efficiency and renewable energy sources in new construction and through retrofits of existing buildings are essential steps to reducing GHG emissions in Colwood.

These changes have many co-benefits for Colwood residents:

- Heat pumps minimize emissions and provide both heating and cooling
- Heat pumps and solar power provide energy cost savings, increase energy security and reduce energy poverty in the community
- Potential of overall increase in public health and well-being
- Buildings can be more resilient to extreme temperatures, poor air quality and extreme weather events



## Actions for Buildings and Infrastructure

The following actions planned support changes needed for buildings and infrastructure to meet climate goals. Note that an action table with additional information is included in Appendix A.

### Strategy B1:

#### Build zero emissions and resilient new buildings

##### B1-1 New construction

Continue to reduce the carbon footprint of new buildings, including through application of the BC Energy Step Code, and towards the provincial target for all new buildings to be net-zero energy-ready by 2032. Consider time lines similar to other municipalities on Vancouver Island and the Lower Mainland.

##### B1-2 Rezoning sustainability features

Develop requirements for enhanced sustainability features in rezoning applications including zero-carbon energy systems, higher efficiency, alternative mobility infrastructure and green infrastructure.

##### B1-3 Establish flood construction levels

Establish appropriate Flood Construction Levels (FCL) and site new builds out of flood zones.

##### B1-4 Increase resilient new construction

Develop options to support and incentivize increased climate resiliency in new construction (including for high wind loads, cooling, passive design, green infrastructure, water conservation, and roof technology). Use climate projections to guide new construction.

##### B1-5 Remove barriers

Review and remove barriers for climate adaptation and resilience in the building sector.

##### B1-6 New construction support

Explore options for discouraging fossil fuels in new development. Use best available climate projections to guide new construction.

##### B1-7 Reduce embodied carbon

Explore policy options for reducing embodied carbon in new construction and retrofits.

##### B1-8 Update subdivision servicing bylaw

Review the Subdivision Servicing Bylaw requirements for permeability and storm water control following major precipitation events and at regular intervals to remain current with updated climate projections.

##### B1-9 Capacity development

Collaborate with partners and stakeholders to support training and capacity building for in the development and construction sectors.

## Actions for Buildings and Infrastructure

The following actions planned support changes needed for buildings and infrastructure to meet climate goals. Note that an action table with additional information is included in Appendix A.

### Strategy B2:

#### Accelerate building retrofits for efficiency, renewable energy and resiliency

##### B2-1 Support energy and resiliency retrofits

Collaborate for policy development and implementation of measures to reduce GHGs and improve resilience of existing buildings including promotion, incentives, integration of natural assets and green infrastructure, and with the use of equity planning. Ensure retrofits do not negatively impact low- and moderate-income tenants and programs to support and prioritize vulnerable populations.

##### B2-2 Encourage energy benchmarking

Encourage energy benchmarking for Part 3 buildings towards energy awareness, market transformation and building energy performance improvements.

##### B2-3 Update development permit areas

Build on and expand the City's existing development permit areas to cover coastal flood inundation and in-land flooding risk reduction.

### Strategy B3:

#### Ensure local energy accessibility and security

##### B3-1 Energy best practices

Work with BC Hydro / other partners to ensure implementation of best practices for building electrification, energy storage, solar generation, and EV connection (including vehicle to building) in new developments and identify where electrical capacity otherwise needs to be upgraded.

##### B3-2 Battery storage

Consider battery storage with solar PV in City-owned buildings where appropriate (e.g. emergency operations center, fire halls).

## Co-benefits

Climate actions that reduce emissions and enhance resilience of buildings in Colwood have many co-benefits for residents and businesses. Planning of these actions should include considerations for maximizing co-benefits, including:

- Costs savings (such as from energy and reduced health care costs)
- Human health and well-being (such as from improved indoor air quality, increased comfort related to heating and cooling, reduced urban heat effects)
- Reduced impacts of extreme weather events
- Potentially increase meeting or gathering places for residents
- Increased local habitat and biodiversity
- Increased energy security

## Indicators and Targets




Measuring and reporting on the results of our climate actions is important for annual reporting that is linked with transparency and accountability, but also our ability to implement adaptive management and to increase success. Additional indicators and targets may be developed as specific action items are planned and implemented.

Objective	Indicators	Targets
Maintain construction requirements for energy, efficiency, and resiliency that are higher than provincial requirements leading to 100% net-zero energy ready construction by 2032	Increased number of buildings at higher levels of the BC Energy Step Code and Zero Carbon Step Code	
	Number of energy efficiency incentives accessed in Colwood for building efficiency upgrades	2% of residences per year switching to heat pumps 3% of residences per year retrofitting for energy efficiency
Existing residences in Colwood are increasingly retrofitted for energy efficiency and clean energy sources (2% per year for heat pumps and 3% per year for energy efficiency measures)	Reduced natural gas connections	Annual reduction in natural gas connections
	Increased renewable electricity installations	Annual increase in renewable electricity installations
	Training and capacity building sessions held with partners for the development and construction sectors.	2 sessions per year promoted or co-hosted by Colwood
Advocate for and support increased local renewable energy production	Increase in energy benchmarking in Part 3 buildings	

# Pathway 4: Biodiversity and Nature-based Solutions

## Vision

Biodiversity and ecosystem services are valued and protected in Colwood, increasing carbon sequestration and storage, moderating climate change impacts such as increasing sea-level rise and temperatures, and providing co-benefits such as for human health and well-being.

	Objectives	Strategies
	Biodiversity and ecosystems are increasingly protected and healthy in Colwood	<b>N1:</b> Develop a natural asset management plan and implementation policy
	Well-planned nature-based solutions for climate action and co-benefits are increasingly implemented and sequestering carbon as well as increasing resilience in the community	
	Ecosystem services are increasingly valued, managed and protected	

Many Colwood residents identify our ecosystems, such as Douglas-fir forests, Garry oak ecosystems, and wetlands, as cherished assets. As Colwood’s population and development demands grow, there is increasing pressure on (and loss of) natural areas, biodiversity and the ecosystem services they provide. Protecting and enhancing biodiversity is a critical part of climate action, especially as the climate and biodiversity crises are interconnected and mutually reinforcing. Nature-based solutions (NbS) are increasingly recognized as essential elements of climate action, such as helping us to increase carbon sequestration, reduce urban heat effects and the effects of extreme weather. In addition, the human health benefits of natural areas are being increasingly understood and are important co-benefits of NbS.

**Nature-based Solutions (NbS)** involves working with nature to address societal challenges. NbS is an umbrella term for different approaches that protect, sustainability manage and restore nature in ways that also increases human well-being and provides biodiversity benefits. Examples of NbS approaches include green infrastructure and ecosystem-based disaster risk reduction. Following international NbS principles and guidelines is important for effective practices, increasing co-benefits and reducing negative consequences.

Colwood's ecosystems and natural areas are both at risk due to climate change and provide opportunities for nature-based climate action. Colwood is committed to protecting and restoring natural areas and biodiversity. Examples of current initiatives in Colwood include:

- Our Waterfront Stewardship Plan, which includes NbS approaches to climate adaptation along our 4 km of our shoreline
- Colwood developed a natural asset inventory with the Municipal Natural Assets Initiative (MNAI) as the first step to developing a natural asset management system (linked to our broader municipal asset management)

## Actions for Biodiversity and Nature-based Solutions

The following actions planned support changes needed for buildings and infrastructure to meet climate goals. Note that an action table with additional information is included in Appendix A.

### Strategy N1:

#### Develop a natural asset management plan and implementation policy

##### N1-1 Asset management team

Develop a cross departmental asset management team, including knowledge capacity, to integrate natural assets into asset management.

##### N1-2 Natural asset economic assessment

Conduct an economic assessment for natural assets in Colwood to develop the current value of ecosystem services and planning for maintenance and enhancement of service delivery.

##### N1-3 Natural asset management strategy

Develop a strategy and policy to build climate resilience within asset management planning that identifies and prioritizes ecosystem services and natural infrastructure. Incorporate climate projections and update every 5 years. Identify and plan for specific values including carbon sequestration/storage, other important ecosystem services, and sites of particular value (such as high biodiversity, wildlife habitat, and ecosystem-based adaptation). Incorporate natural assets into built asset management planning including transportation corridors and building standards. Identify mechanisms to protect and expand priority

assets (such as through projects, policies and planning processes). Identify maintenance and protection requirements as well as accounting structures to track and value ecosystem services such as related to water, storm water management, and flood/ heat protection.

##### N1-4 Natural assets in OCP Update

Co-develop stronger guidelines and clear, quantifiable metrics for natural assets and ecosystem services in the 2023 OCP update. Create stronger incentives to compensate for losses to ecosystem services and carbon sinks during development. Look at the potential to work with developers and partners to build a nursery for native plants salvaged from development sites, for replanting after development.

##### N1-5 Collaborate with adjacent municipalities

Collaborate with adjacent municipalities on natural asset inventories and management and work together on the protection and expansion of ecological corridors.

## Actions for Buildings and Infrastructure

### Strategy N2:

#### Protect and restore biodiversity and ecological connectivity

##### N2-1 Internal biodiversity awareness

Build internal awareness and understanding of biodiversity to expand opportunities for conservation across relevant city projects and departments.

##### N2-2 Strengthen biodiversity protection in the OCP

Increase protection and health of biodiversity on private and public lands in the 2023 OCP update and integrate local Indigenous ecological knowledge in and land management practices. Include a definition of biodiversity and address key issues such as protection for pollinators, appropriate plant selection for development sites, and soil volumes on development sites to support forest canopy health.

##### N2-3 Protect and restore biodiversity

Develop a State of Biodiversity Report for Colwood to inform the development of a Biodiversity Conservation Strategy. Include policies and practices to protect, restore and expand natural areas and ecological connectivity (terrestrial and marine) to protect biodiversity, ecosystem services, and facilitate species movement in a changing climate. Integrate biodiversity planning and protection into processes, including natural asset management, park planning and acquisition, development planning and policies. Create partnerships to protect and enhance regional ecological corridors.

##### N2-4 Landscaping guidelines

Develop Climate Resilient Landscaping Guidelines for city-owned lands and new development to increase carbon sequestration, maintain soil health, protect and enhance biodiversity and identify climate appropriate species for adaptation goals.

##### N2-5 Increase permeable surfaces

Develop guidelines and explore incentives to reduce impervious surfaces.

##### N2-6 Support community stewardship

Support stewardship efforts in the community and promote citizen science to protect and restore biodiversity and address invasive species, including the development of a Naturescape program for Colwood.

## Actions for Buildings and Infrastructure

### Strategy N3:

Prioritize nature-based solutions to integrate climate action, biodiversity protection and co-benefits

#### N3-1 Nature-based solutions (NbS) best practices

Use international principles and standards to develop best practices to guide NbS approaches in Colwood.

#### N3-2 Urban forest strategy

Complete and implement an urban forest strategy and updated tree protection bylaw addressing climate mitigation and adaptation planning, biodiversity and including equity planning. Include: increased protection for mature trees, encouragement for native and climate adaptive species in development applications and 'No Net Loss' for canopy cover, tree replacement ratios, prioritizing neighbourhoods with less than 30% tree canopy cover for tree planting, increasing shading for active transportation corridors, and set targets for carbon sequestration and pollution reduction.

#### N3-3 Shoreline ecosystem protection

Implement measures to protect Colwood's coastal dunes and salt marshes, guided by the Waterfront Stewardship Plan and climate mitigation and adaptation planning, including Ecosystem-based Disaster Risk Reduction (EcoDRR) approaches. Include buffer zones and address pollutants and runoff entering watercourses. Increase understanding of the value of Colwood's salt marshes for carbon sequestration and shoreline protection.

#### N3-4 Biodiversity monitoring

Develop practices and partnerships to monitor biodiversity in Colwood NbS projects.

### Co-benefits

Nature-based climate actions sequester and store carbon while also building resilience for the community and ecosystems/ biodiversity as the climate change continues. A great deal of research continues to show how many important co-benefits are provided through nature-based actions. Some of these co-benefits to consider in planning for biodiversity and nature-based solutions include:

- improved human health: physical and mental
- increased recreational opportunities
- community cohesion and livability
- Increased ecosystem services
- Improved air and water quality
- Reduced risks to property values
- City/ tax payer cost savings

## Indicators and Targets

The following indicators and targets help us to better plan, measure success, and use adaptive management. Biodiversity monitoring, for example, is important to avoid assuming a benefit for biodiversity and miss unintended negative consequences of specific actions. Through annual reporting we can better manage and respond as well as track our overall efforts towards our goals. Additional indicators and targets will be developed as specific action items are planned and implemented. Annual reporting will include the status of action items, which is also helpful for actions that are not easy to measure.

Objective	Indicators	Targets
Biodiversity and ecosystems are increasingly protected and healthy in Colwood	Increased tree canopy	[Targets for increased tree canopy to be provided through the upcoming Urban Forest Strategy]
	Increased planting of native trees on public and private lands.	[Targets to be identified]
Well-planned nature-based solutions for climate action and co-benefits are increasingly implemented and sequestering carbon as well as increasing resilience in the community	Increased protection and restoration of natural areas	[Targets to be developed, including through a Biodiversity Conservation Strategy]
Ecosystem services are increasingly valued, managed and protected	Landscaping guidelines supporting biodiversity	Landscaping guidelines for development completed with implementation plan; review and update every 5 years
		Landscaping guidelines for city-owned lands completed with implementation plan; review and update every 5 years



## Indicators and Targets


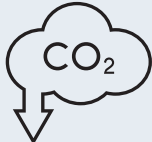

The following indicators and targets help us to better plan, measure success, and use adaptive management. Biodiversity monitoring, for example, is important to avoid assuming a benefit for biodiversity and miss unintended negative consequences of specific actions. Through annual reporting we can better manage and respond as well as track our overall efforts towards our goals. Additional indicators and targets will be developed as specific action items are planned and implemented. Annual reporting will include the status of action items, which is also helpful for actions that are not easy to measure.

Objective	Indicators	Targets
Biodiversity and ecosystems are increasingly protected and healthy in Colwood	Natural asset management process in place	Establishment and implementation of natural asset management strategy; Assessment and management planning for green infrastructure
	Ongoing delivery of biodiversity-related staff training	At least 2 biodiversity-related staff training sessions per year
	Increased biodiversity-related planning and projects	[Targets to be developed]
Well-planned nature-based solutions for climate action and co-benefits are increasingly implemented and sequestering carbon as well as increasing resilience in the community	Increase in annual percentage of native species planted on public/city owned lands	[Targets to be developed]
	Reduction in high urban heat island areas (based on regional heat mapping)	[Targets to be developed]
Ecosystem services are increasingly valued, managed and protected	Increase in annual percentage of native species planted on public/city owned lands	[Targets to be developed]
	Increased connectivity between natural areas	[Targets to be developed]
	Colwood follows best practices for Nature-based solutions initiatives	Nature-based solutions best practices guidelines for Colwood developed, implementation ongoing, and reviewed every 5 years

# Pathway 5: Food and Zero Waste

## Vision

The climate impact and waste of food and materials in Colwood is dramatically reduced. Colwood has transitioned to a circular waste community and residents have increased access to affordable, healthy and locally produced food.

	Objectives	Strategies
	Locally grown and consumed food is increased, providing greater food security and reduced emissions from food	<b>W1:</b> Reduce the climate impacts of food production and increase food security
	Emissions from waste are reduced to zero by 2050	
	Work with partners to achieve 100% diversion of compostable organic waste and paper from the landfill by 2030	

This pathway addresses Colwood emissions from waste and IPPU (Industrial Processes and Product Use) as well as considering consumption-based emissions related to food (and materials). An inventory for consumption-based emissions has not yet been conducted for Colwood.

### Colwood waste emissions (2018): 4% or 3,501 tCO<sub>2</sub>e

- GHG emissions from the disposal and management of solid waste, the biological treatment of waste, and wastewater treatment and discharge (emissions related to decomposition, burning, and other management methods).

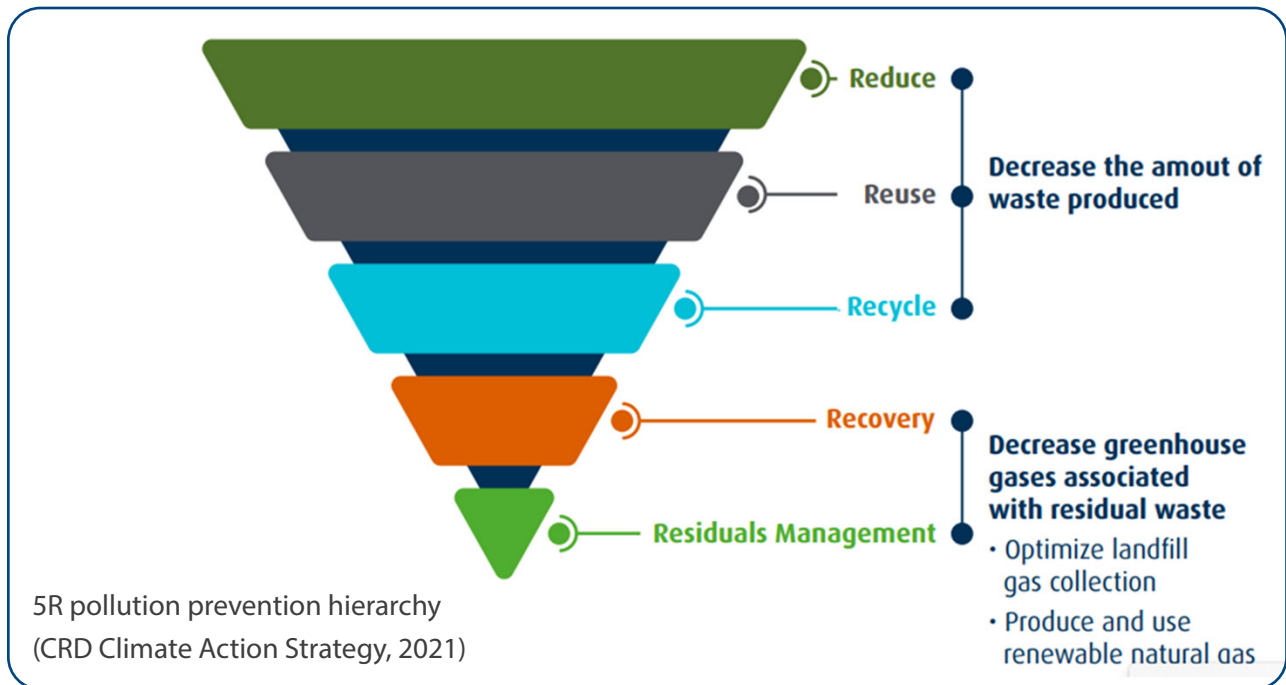
### Colwood IPPU emissions (2018): 7% or 5,861 tCO<sub>2</sub>e

- GHG emissions from products such as refrigerants, foams or aerosol cans that release potent GHG emissions, known as product use GHG emissions. (There are no known industrial process emissions in the CRD).

Colwood supports the regional goal that “waste generation and the resulting emissions are minimized and remaining waste is transformed into a resource” (CRD, 2021). A circular waste system reduces and repurposes waste as a resource. Waste diversion will help the City and region to meet GHG emissions reduction targets.

CRD describes in their climate action strategy (2021):

“About 6% of regional GHG emissions are associated with waste—and the majority of this comes from decomposing organic waste that was added to Hartland Landfill over the last several decades (e.g., food scraps and construction wood waste). The most effective way to reduce future emissions from the landfill is to follow the 5R hierarchy – focusing first on decreasing the amount of waste produced, then on decreasing the GHG emissions from remaining waste...”



GHG emissions related to materials and food can have high emissions to consider related to production and transportation. Specifically, food-related emissions include the production of food (land use change, vehicles for food production and transportation, energy for buildings such as greenhouses, fertilizers and pesticides, methane from manure and livestock, food processing and refrigeration) cooking, and waste. A consumption-based inventory conducted by the District of Saanich, found three quarters of that neighbouring community’s consumption-based emissions for food was a result of animal proteins, particularly red meat and dairy products.

## Food & Zero Waste Actions

The following actions planned support changes needed for buildings and infrastructure to meet climate goals. Note that an action table with additional information is included in Appendix A.

### Strategy W1:

**Reduce the climate impacts of food production and increase food security**

#### W1-1 Food security policy

Develop a food security policy, including increased local food production and towards a future Food Security Strategy. Provide support for the sale of locally grown and produced food.

#### W1-2 Community garden policy

Develop a community garden policy to support the retention of new sites for gardening and retain existing area.

#### W1-3 Increase community food production

Develop partnerships and support community organizations to educate Colwood residents on practices to increase gardening for food production (including the Colwood Garden Society).

#### W1-4 Reduce food impacts

Encourage low carbon foods and reduced food waste through leadership, communications, and partnership initiatives

### Strategy W1:

**Reduce the climate impacts of waste through reduced consumption, zero waste, and supporting a circular economy**

#### W2-1 Zero waste strategy

Develop a strategy for a zero-waste target to eliminate 100% of divertible materials from the waste stream in Colwood and in collaboration with regional partners.

#### W2-2 Zero waste advocacy

Coordinate with the CRD and partners to advocate for advanced Extended Producer Responsibility (EPR), 'Right to Repair' Legislation, restrictions on single use plastics/items, and advocacy towards a circular economy.

#### W2-3 Zero waste communications plan

Develop and implement ongoing communications to support zero waste efforts, innovation, and related events in Colwood and the region. Support implementation of a Zero Waste Strategy and incorporate programs such as the provincial "Love Food Hate Waste" campaign.

#### W2-4 Local waste study

Conduct or support a local waste composition study in order to plan and track improvements in local waste diversion, including organic waste.

#### W2-5 Increased sustainable living

Encourage Colwood residents and businesses to reduce impacts related to consumption and waste

## Co-benefits

Some of the co-benefits related to reducing emissions from waste, fostering a circular economy, reducing food-related emissions and increasing local food security include:

- Improving physical health
- Shifting to sustainable behaviours
- Improving emergency preparedness
- Reducing loss of natural areas
- Fostering green economic growth
- Increasing green innovation
- Optimizing resources

## Indicators and Targets

The following indicators and targets help us to better plan, measure success, provide annual reporting, and use adaptive management. Additional indicators and targets will be developed for this pathway as more information is available related to consumption-based emissions and as specific actions are planned and implemented. Annual reporting will include the status of action items, which is also helpful for actions that are not easy to measure.

Objective	Indicators	Targets
Locally grown and consumed food is increased, providing greater food security and reduced emissions from food.	Increase in available and active community garden plots in Colwood	[Targets to be developed]
	Increase in recycling rates in Colwood	[Baseline and targets to be developed]
Emissions from waste are reduced to zero by 2050	Reduction in tonnes of waste per capita sent to Hartland landfill from Colwood	[Baseline and targets to be developed] Support CRD's target to reduce per capita disposal rate to 250 kg or less by 2030
Work with partners to achieve 100% diversion of compostable organic waste and paper from the landfill by 2030	Reduction and elimination of compostable organic waste and paper going to Hartland landfill	Divert 100% of compostable organic waste and paper from Hartland landfill by 2030
	Reduce and eliminate waste emissions	Reduce emissions from waste to zero by 2050

## Pathway 6: Community Well-being and Eco-Innovation

### Vision

Colwood residents, organizations and businesses are supported, engaged and empowered in a community resilient to climate change, taking individual and collective action, while eco-innovation and networks are thriving in the community.

	Objectives	Strategies
	Support and engagement on climate change is provided to the community on an ongoing basis and responsive to community needs.	<b>C1: Engage, empower and support the community in climate action and planning</b>
	Colwood residents and businesses are empowered to take climate action	
	Colwood is a thriving eco-innovation hub supporting innovative businesses, local training and employment that aligns with climate goals.	<b>C2: Eco-Innovation: support and incentivize community eco-innovation &amp; networks</b>

Colwood aims to actively support, engage and empower the community in climate action and well-being in a changing climate. The Colwood community, including residents, businesses and neighbourhoods, will be supported to be prepared, more inclusive and working together through programs such as Good Neighbours. We will maximize the opportunity through climate action and co-benefits to improve the health and well-being of our community.

Colwood is at a critical point in its development to guide what the community will look like into the future in terms of land-use planning, transportation, and for sustainable economic development. Colwood can develop or support innovative industries and innovation that align with climate goals, including:

- Renewable energy
- Compact, complete communities
- Nature-based solutions
- Zero emissions mobility
- Energy efficiency
- Circular economy approaches
- Sustainable eco-tourism
- Other green, clean and innovative business opportunities

## Actions for Community Well-being and Eco-Innovation

The following actions planned support changes needed for buildings and infrastructure to meet climate goals. Note that an action table with additional information is included in Appendix A.

### Strategy C1:

**Engage, empower and support the community in climate action and planning**

#### C1-1 Good neighbour program

Expand the good neighbour program for community emergency planning, climate action, and promoting community co-benefits.

#### C1-2 Equity planning and capacity building

Provide professional development for Colwood staff towards equity planning and initiatives to improve climate resiliency and co-benefits for vulnerable populations and develop an equity lens to support decision-making.

#### C1-3 Outreach & education

Provide outreach and educational opportunities to empower and support residents in climate action, including community events and online resources.

#### C1-4 First Nations & Indigenous residents

Develop working relationships and initiatives for climate actions and planning with local First Nations and Indigenous residents.

#### C1-5 Annual climate event

Host an annual public event that coincides with the release of the annual climate report to continuously engage with the community, increase awareness, improve climate planning and maximizing co-benefits.

*\*See Pathway 1 Municipal Leadership for emergency planning for community well-being*

### Strategy C2:

**Eco-Innovation: support and incentivize community eco-innovation & networks**

#### C2-1 Eco-innovation network & pilot projects

Support the development of an eco-innovation and learning network to foster climate mitigation and adaptation-related innovation, partnerships, and support potential pilot projects.

#### C2-2 Climate action in colwood businesses

Develop or support outreach, training and incentives for local businesses to transition and innovate to reduce emissions and adapt to climate impacts.

#### C2-3 Green economic development

Work with regional partners on green economic development opportunities.

#### C2-4 Green economy training

Collaborate with partners to design and facilitate green economy education and training for youth and equity-seeking populations.

## Co-benefits

Climate action related to community well-being and eco-innovation within the community can include many co-benefits including:

- Improving social inclusion and equity
- Improving public safety & emergency preparedness
- Shifts to more sustainable behaviours
- Increasing services and amenities
- Fostering green economic growth
- Diversifying the local economy
- Promoting circular economy
- Protecting biodiversity and ecosystem services
- Protecting cultural values

## Indicators and Targets

The following indicators and targets help us to better plan, measure success, provide annual reporting, and use adaptive management. Additional indicators and targets will be developed for this pathway through the planning and implementation of action items. Annual reporting will include the status of action items, which is also helpful for actions that are not easy to measure.

Objective	Indicators	Targets
Support and engagement on climate change is provided to the community on an ongoing basis and responsive to community needs.	Number and frequency of community engagement/ initiatives related to climate change by City of Colwood	
	Participation levels for annual climate event	
Colwood residents and businesses are empowered to take climate action	Number of registered Good Neighbours groups in Colwood	At least one registered group in each major local area of Colwood
	Partnerships established for eco-innovation hub	Annual increase in partnerships
Colwood is a thriving eco-innovation hub supporting innovative businesses, local training and employment that aligns with climate goals.	Partnerships established for eco-innovation hub	[Eco-innovation hub targets to be developed]





## 5. Colwood Residents: Call to Action

### Colwood Residents: Call to Action

Urgent action by the City of Colwood is necessary, but the climate challenge requires action from everyone, including residents, businesses and industry, community organizations, institutions and other stakeholders. We must work in collaboration with partners throughout our region and beyond, including neighbouring municipalities, First Nations, provincial and federal government. Our success depends on everyone working together on this challenge.

**Colwood residents have an important role to play.** Together we can ensure our community is a healthy place for us and future generations. We can all take action to reduce GHG emissions and adapt to current and future climate change at home, on the road and at work. By urgently reducing emissions now, we can reduce future and irreversible impacts. While we are taking climate action, we will also improve our health and well-being, save money, protect our natural environment, and protect quality of life for future generations.



To find out more about how your household can reduce your climate impact with a smaller “footprint”, try using a climate calculator to understand more about what you can do and make household goals.

Try Saanich’s carbon calculator: [www.saanich.ca/calculator](http://www.saanich.ca/calculator) or the Ecological Footprint calculator: [www.footprintcalculator.org](http://www.footprintcalculator.org)



## Individuals and families can take climate action in many ways, such as:



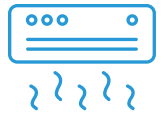
- Drive less – increasing walking, cycling and taking the bus (to work, school, shopping...)

- Increasing your knowledge/ awareness about climate change



- Reduce flying for travel

- Switch to an air source heat pump to heat and cool your home



- Eat less meat and dairy

- Replace your vehicle with an electric vehicle



- Reduce waste in your home including composting and increased recycling

- Increase nature-based solutions on your property (e.g., tree planting & naturescaping)



## As the City of Colwood implements this climate plan, we invite all residents to participate. You can help by:



- Providing feedback and ideas

- Signing up to hear about climate action opportunities and events



- Volunteer for climate action in the community

- Participate in the Good Neighbour program



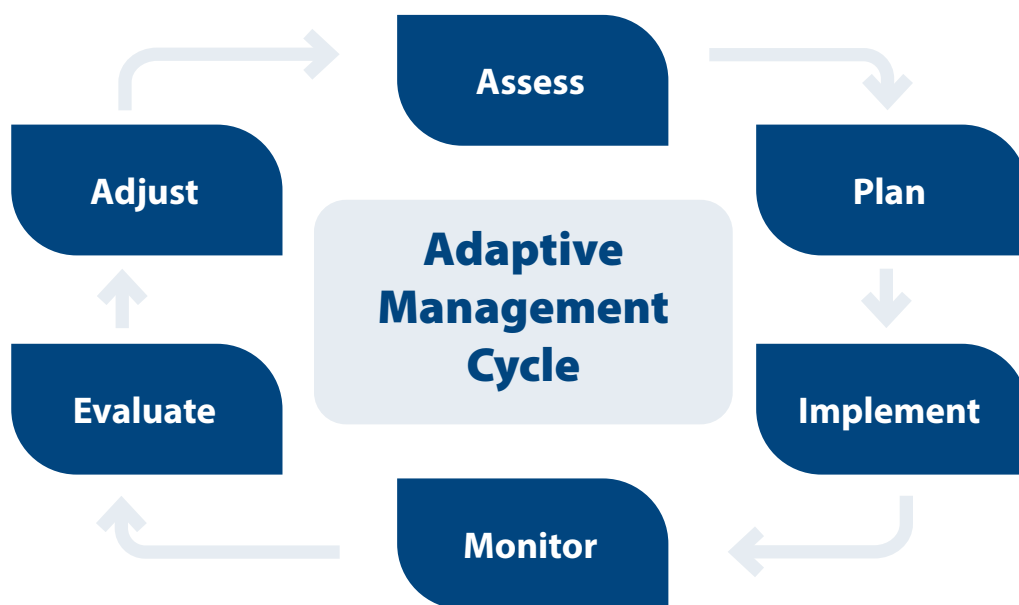
- Support local businesses taking innovative climate action

# 6. Implementation & Adaptive Management

## Implementation and Adaptive Management

This climate action plan will be implemented collaboratively across departments at Colwood and with community and regional partners. Internal coordination and support will be provided by the Colwood Climate Action Team (internal leadership) and from Community Planning. To successfully meet the goals of this plan, annual reporting on this plan will ensure transparency and measures of progress, adaptive management with updates to increase success, as well as ongoing public and stakeholder engagement. Initial indicators and targets for each pathway have been included in this plan, but additional indicators and targets will be identified for tracking and reporting as action items are planned and implemented.

Adaptive management is an important element of successful climate action. Colwood will adapt our plans and initiatives as needed, in response to factors such as outcomes of initiatives and new information or requirements. The plan will be a living document to be updated as needed, including for new climate projections, unexpected outcomes, innovation, new municipal requirements, and the needs of the community.





## To ensure that Colwood integrates and acts on new knowledge and understanding related to this plan, staff will:



- continue ongoing participation in regional and professional networks related to climate action

- update the climate action plan as needed, based on new information related to climate science, potential risks and impacts



- continue to increase internal capacity to consider climate implications in decision-making at Colwood

- continue to increase overall staff knowledge and capacity to successfully implement the climate action plan



- increasingly plan for climate action beyond 2030 with new information and results to guide priorities and best practices

The following Climate Actions Table (Appendix A) lists actions under each pathway and strategy, identifying lead and supporting departments, and implementation timelines. Priorities for actions have been identified considering potential for emissions reductions and risk management, current commitments, alignment with other Colwood priorities (such as co-benefits), and other considerations such as urgency and opportunities.

## Appendix A: Climate Action Table

The following table outlines the actions identified within each pathway and strategy. Darker shaded action items indicate highest priorities.

### Pathway 1: Municipal Leadership

M1 Capacity & Resources: Ensure capacity and resources for ongoing climate action & integrated decision-making						
Action		Mit	Ad	Lead	Support	Timeline
M1-1	<b>Allocate and manage climate action financing:</b> Ensure the annual service review includes specific reporting on implementation of the climate action plan and identification of resource needs.	•	•	Corporate Services	Finance, Community Planning	2023-2025
M1-2	<b>Climate action team:</b> build the capacity of the internal Climate Action Team to support implementation, update, and track progress of the Climate Action Plan across departments.	•	•	Community Planning	Corporate Services, Development Services	2023-2025
M1-3	<b>Climate implications in decision-making:</b> develop and implement a “climate implications” section for Council reports (planning, procurement, and capital investments) and sustainability checklists for development applications and capital projects.	•	•	Corporate Services	All	2023-2025
M1-4	<b>Climate communications:</b> provide ongoing and regular community communications to support the climate plan implementation & community awareness.	•	•	Communications	Community Planning	Ongoing
M2 Emergency Planning: Update Emergency Planning and responses to prepare for climate change						
Action		Mit	Ad	Lead	Support	Timeline
M2-1	<b>Hazard, risk and vulnerability analysis:</b> update the City's Hazard, Risk and Vulnerability Analysis to embed climate change projections and align with the climate plan, comply with provincial requirements, and identify partnership opportunities.		•	Emergency Management	Engineering, Parks	2023-2025
M2-2	<b>Early warning alert system:</b> establish a city policy for an early warning alert system that incorporates climate-related disaster planning and communications. Include the Westshore Alert App within the alert system.		•	Emergency Management	Communications	2023-2025
M2-3	<b>Emergency communications plan:</b> establish an emergency communications plan that incorporates climate-related emergencies and considers partnerships for responses.		•	Emergency Management	Communications	2023-2025

M3 Leadership: ensure leadership in climate mitigation and adaptation transitions						
Action	Mit	Ad	Lead	Support	Timeline	
M3-1	<b>Education:</b> develop and provide ongoing climate training for staff, such as in collaboration with Royal Roads University.	•	•	Community Planning, Human Resources	All	2023-2025/ Ongoing
M3-2	<b>New civic buildings:</b> develop a policy requiring new civic buildings to be zero emissions, highly energy efficient, and resilient to climate change.	•	•	Building Services	Community Planning	2023-2025/
M3-3	<b>Retrofit municipal buildings:</b> lead by example by retrofitting all City controlled buildings to be zero emissions (by 2050) and resilient.	•	•	Building Services	Community Planning, Engineering, Public Works	2023-2025
M3-4	<b>Electrify Colwood fleet:</b> Adopt ZEV prioritization for the Fleet and adjust replacement timelines for ZEV introduction (i.e., availability of new products), with a municipal zero emissions target by 2045.	•		Public Works	Community Planning	2023-2025/ ongoing
M3-5	<b>Electrify maintenance equipment:</b> phase in electric replacements for smaller equipment such as for landscape maintenance and extend policy to contracted services with a municipal zero emissions target of 2045. Explore leadership options for community transition to electrified equipment.	•		Public Works		
M3-6	<b>Municipal Hall nature-based solutions (NbS):</b> showcase NbS related approaches at the Municipal Hall, including increased tree canopy and biodiversity.	•	•	Parks	Community Planning	
M3-7	<b>Corporate waste reduction:</b> include waste reduction and zero waste initiatives in municipal operations and as a leader for the Zero Waste Strategy.	•		Corporate Services	Community Planning	
M3-8	<b>Develop a climate-friendly commuter program:</b> develop a program to provide support and incentives to encourage City employees to use active transportation, take public transit, or carpool to work.	•		Community Planning, Human Resources	Finance	2023-2025

**Municipal Leadership**

## Pathway 2: Transportation & Complete Communities

T1 Resilient Communities: Prioritize climate resiliency of new development						
Action		Mit	Ad	Lead	Support	Timeline
T1-1	<b>OCP updates:</b> continue the focused growth direction in the OCP and review the land use map to support the development of mixed use and transit-friendly density, active transportation infrastructure, and to prevent new development in high risk areas (re: flood, erosion and sea level rise).	•	•	Community Planning	Development Services	2023-2025
T1-2	<b>Promote smart growth:</b> promote and facilitate smart growth in Colwood, including implementing a sustainability checklist, considering incentives, and assessing long-term financial impacts of new development proposals.	•	•	Community Planning	Development Services	2023-2025
T1-3	<b>Parking bylaw updates:</b> adjust Parking Bylaw to support increased EV use/ charging, efficient use of current parking, and improved walkability.	•		Community Planning	Development Services	2023-2025
T1-4	<b>Reduce non-resilient land-uses:</b> develop a policy to discourage non-resilient land uses, including: carbon intensive land uses (such as gas stations and drive throughs) and large areas of impermeability (such as large surface parking lots).	•	•	Community Planning	Development Services	2023-2025
T1-5	<b>Update Transportation Master Plan:</b> for improved Transportation Demand Management and the use of multi-model traffic data for traffic management.	•		Engineering	Community Planning	2023-2025
T2 Active Transportation: Increase active transportation & connected networks						
Action		Mit	Ad	Lead	Support	Timeline
T2-1	<b>Active Transportation Plan:</b> accelerate the implementation of a plan that supports active transportation routes and infrastructure, guides the development of new policies and bylaws, and links active transportation and transit networks.	•		Engineering, Community Planning		2023-2025
T2-2	<b>Reduced speed limits:</b> adopt 30 km/hr speed limits in more areas of the community (e.g., dense areas, major active transportation corridors)	•		Engineering	Community Planning	2023-2025
T2-3	<b>Expand pedestrian spaces:</b> build in opportunities in new developments (e.g., Royal Beach and Royal Bay) to convert street space into pedestrian only or pedestrian friendly land uses.	•		Engineering	Development Services	2023-2025/ ongoing
T2-4	<b>Active school travel planning:</b> continue partnerships and expand active school travel planning in Colwood, including the Ready Step Roll (RSR) program.	•		Community Planning	Communications	2023-2025



Action		Mit	Ad	Lead	Support	Timeline
T2-5	<b>Active transportation sensors:</b> Prioritize implementation of active transportation network sensors (2023 capital project).	•		Engineering	Community Planning	2026-2028
T2-6	<b>Biking facility requirements:</b> Ensure end-of-trip facility requirements in the Parking Bylaw are applied to increase biking transportation and monitor for any improvements needed.	•		Community Planning	Development Services, Engineering	2023-2025
T2-7	<b>Support car free events:</b> work in partnership to establish car-free events to connect community members with each other.	•		Community Planning	Communications, Engineering	2023-2025/ongoing
<b>T3 Transit Services: support enhanced transit services &amp; use</b>						
Action		Mit	Ad	Lead	Support	Timeline
T3-1	<b>Improve transit services:</b> work with partners (VRTC, BC Transit) to continuously improve transit services, support a rapid transit network, and transition to a zero-emissions transit network.	•		Engineering	Community Planning	2023-2025/ongoing
T3-2	<b>Increase transit infrastructure:</b> increase infrastructure for transit including dedicated bus lanes and transit amenities through developments.	•		Engineering,	Development Services, Community Planning	2023-2025/ongoing
T3-3	<b>Promote transit use:</b> work with partners to promote transit ridership including free transit days (e.g. special events, or poor weather) and celebrating new routes.	•		Community Planning	Communications	2023-2025/ongoing
<b>T4 E-Mobility: promote affordable and accessible e-mobility</b>						
T4-1	<b>Electric mobility strategy:</b> develop and implement a strategy to support and promote zero emissions mobility options. Include: <ul style="list-style-type: none"> <li>• EV-ready building requirements</li> <li>• Increase EV charging in existing buildings</li> <li>• EV &amp; e-Mobility Outreach program</li> <li>• Support e-Bike Share program establishment</li> <li>• work with partners to increase car sharing and car sharing infrastructure</li> <li>• Support CRD's EV Infrastructure Roadmap</li> <li>• Increase municipal installation of EV chargers</li> </ul>	•		Engineering	Community Planning	2023-2025/ongoing
T4-2	<b>e-Mobility outreach:</b> develop communications and outreach plans to support electric transportation transition and the Electric Mobility Strategy.			Communications	Community Planning	2023-2025/ongoing
T4-3	<b>e-Mobility partnerships:</b> work in partnership and through internal policies and initiatives to support regional and provincial initiatives for e-Mobility transitions.			Community Planning	Communications	

Transportation & Complete Communities

## Pathway 3: Buildings & Infrastructure

B1 New Buildings: build zero emissions and resilient new buildings						
Action		Mit	Ad	Lead	Support	Timeline
B1-1	<b>New construction:</b> continue to reduce the carbon footprint of new buildings, including through application of the BC Energy Step Code, and towards the provincial target for all new buildings to be net-zero energy-ready by 2032.	•		Building Services	Development Services, Engineering	2023-2025
B1-2	<b>Rezoning sustainability features:</b> develop requirements for enhanced sustainability features in rezoning applications including zero-carbon energy systems, higher efficiency, alternative mobility infrastructure and green infrastructure.	•	•	Development Services	Building Services, Engineering, Community Planning	2023-2025
B1-3	<b>Establish flood construction levels:</b> establish appropriate Flood Construction Levels (FCL) and site new builds out of flood zones.			Community Planning, Engineering, Building Services	Development Services	2023-2025
B1-4	<b>Increase resilient new construction:</b> develop options to support and incentivize increased climate resiliency in new construction (including for high wind loads, cooling, passive design, green infrastructure, water conservation, and roof technology). Use climate projections to guide new construction.	•	•	Community Planning	Building Services, Development Services	2023-2025
B1-5	<b>Remove barriers:</b> review and remove barriers for climate adaptation and resilience in the building sector.		•	Building Services	Community Planning	2023-2025
B1-6	<b>New construction support:</b> explore options for discouraging fossil fuels in new development.	•	•	Building Services	Community Planning, Development Services	2023-2025
B1-7	<b>Reduce embodied carbon:</b> explore policy options for reducing embodied carbon in new construction and retrofits.	•		Community Planning,	Building Services, Development Services	2023-2025
B1-8	<b>Update subdivision servicing bylaw:</b> review the Subdivision Servicing Bylaw requirements for permeability and stormwater control following major precipitation events and at regular intervals to remain current with updated climate projections.		•	Engineering	Development Services	2023-2025/ ongoing
B1-9	<b>Capacity development:</b> collaborate with partners and stakeholders to support training and capacity building for in the development and construction sectors.	•	•	Community Planning	Community Partners & Stakeholders	2023-2025/ ongoing

Buildings & Infrastructure	<b>B2 Retrofits: promote low carbon and resilient building retrofits</b>						
	<b>Action</b>		<b>Mit</b>	<b>Ad</b>	<b>Lead</b>	<b>Support</b>	<b>Timeline</b>
	B2-1	<b>Support energy and resiliency retrofits:</b> collaborate for policy development and implementation of measures to reduce GHGs and improve resilience of existing buildings including promotion, incentives, integration of natural assets and green infrastructure, and with the use of equity planning.	•	•	Community Planning	Building Services	2023-2025/ ongoing
	B2-2	<b>Encourage energy benchmarking:</b> encourage energy benchmarking for Part 3 buildings towards energy awareness, market transformation and building energy performance improvements.	•		Building Services	Community Planning	2023-2025
	B2-3	<b>Update development permit areas:</b> build on and expand the City's existing development permit areas to cover coastal flood inundation and in-land flooding risk reduction.		•	Community Planning	Development Services	2023-2025
	<b>B3 Local Energy: ensure local energy accessibility and security</b>						
	<b>Action</b>		<b>Mit</b>	<b>Ad</b>	<b>Lead</b>	<b>Support</b>	<b>Timeline</b>
	B3-1	<b>Energy best practices:</b> work with BC Hydro / other partners to ensure implementation of best practices for building electrification, energy storage, solar generation, and EV connection (including vehicle to building) in new developments and identify where electrical capacity otherwise needs to be upgraded.	•		Building Services		2029+
	B3-2	<b>Battery storage:</b> consider battery storage with solar PV in City-owned buildings where appropriate (e.g., emergency operations center, fire halls).	•	•	Building Services		2026 – 2028

## Pathway 4: Biodiversity & Nature-based Solutions

N1 Natural Assets: develop a Natural Asset Management policy and plan						
Action		Mit	Ad	Lead	Support	Timeline
N1-1	<b>Asset management team:</b> develop a cross departmental asset management team, including knowledge capacity, to integrate natural assets into asset management.	•	•	Finance	Development Services, Engineering, Parks, Community Planning	2023-2025
N1-2	<b>Natural asset economic assessment:</b> conduct an economic assessment for natural assets in Colwood to develop the current value of ecosystem services and planning for maintenance and enhancement of service delivery.	•	•	Community Planning, Finance	Parks, Engineering	2023-2025
N1-3	<b>Natural asset management strategy:</b> develop a strategy and policy to build climate resilience within asset management planning that identifies and prioritizes ecosystem services and natural infrastructure.	•	•	Community Planning, Finance	Engineering, Parks	2023-2025
N1-4	<b>Natural assets in OCP update:</b> co-develop stronger guidelines and clear, quantifiable metrics for natural assets and ecosystem services in the 2023 OCP update. Create stronger incentives to compensate for losses to ecosystem services and carbon sinks during development.	•	•	Community Planning	Development Services	2023-2025
N1-5	<b>Collaborate with adjacent municipalities:</b> collaborate on natural asset inventories and management and work together on the protection and expansion of ecological corridors.	•	•	Finance, Community Planning	Parks, Engineering	2023-2025
N2 Biodiversity: protect and restore biodiversity and ecological connectivity						
Action		Mit	Ad	Lead	Support	Timeline
N2-1	<b>Internal biodiversity awareness:</b> build internal awareness and understanding of biodiversity to expand opportunities for conservation across relevant city projects and departments.	•	•	Community Planning	All	2023-2025/ ongoing
N2-2	<b>Strengthen biodiversity protection in the OCP:</b> increase protection and health of biodiversity on private and public lands in the 2023 OCP update and integrate local Indigenous ecological knowledge in and land management practices.	•	•	Community Planning	Development Services, Parks	2023-2025/ ongoing

Action		Mit	Ad	Lead	Support	Timeline
N2-3	<b>Protect and restore biodiversity:</b> develop a State of Biodiversity Report for Colwood to inform the development of a Biodiversity Conservation Strategy. Include policies and practices to protect, restore and expand natural areas and ecological connectivity (terrestrial and marine) to protect biodiversity, ecosystem services, and facilitate species movement in a changing climate.	•	•	Parks, Community Planning	Development Services, Approving Officer	2023-2025/ ongoing
N2-4	<b>Landscaping guidelines:</b> develop Climate Resilient Landscaping Guidelines for city-owned lands and new development to increase carbon sequestration, maintain soil health, protect and enhance biodiversity and identify climate appropriate species for adaptation goals.	•	•	Development Services	Parks, Community Planning	2023-2025
N2-5	<b>Increase permeable surfaces:</b> develop guidelines and explore incentives to reduce impervious surfaces.		•	Development Services	Community Planning	2023-2025
N2-6	<b>Support community stewardship:</b> support stewardship efforts in the community and promote citizen science to protect and restore biodiversity and address invasive species, including the development of a Naturescape program for Colwood.	•	•	Community Planning	Development Services, Parks	2023-2025/ ongoing
<b>N3 Nature-based Solutions: prioritize nature-based solutions to integrate climate action, biodiversity protection and co-benefits</b>						
Action		Mit	Ad	Lead	Support	Timeline
N3-1	<b>Nature-based solutions (NbS) best practices:</b> use international principles and standards to develop best practices to guide NbS approaches in Colwood.	•	•	Community Planning	Parks	2023/ 2025
N3-2	<b>Urban forest strategy:</b> complete and implement an urban forest strategy and updated tree protection bylaw addressing climate mitigation and adaptation planning, biodiversity and including equity planning.	•	•	Parks, Community Planning	Development Services, Engineering	2023-2025
N3-3	<b>Shoreline ecosystem protection:</b> implement measures to protect Colwood's coastal dunes and salt marshes, guided by the Waterfront Stewardship Plan and climate mitigation and adaptation planning, including Ecosystem-based Disaster Risk Reduction (EcoDRR) approaches.	•	•	Parks, Engineering	Development Services, Community Planning	2026-2028
N3-4	<b>Biodiversity monitoring:</b> develop practices and partnerships to monitor biodiversity in Colwood NbS projects.	•	•	Community Planning	Parks	2023-2025

**Biodiversity & Nature-based Solutions**

## Pathway 5: Food & Zero Waste

W1 Food Production and Security: reduce the climate impacts of food production and increase food security						
Action		Mit	Ad	Lead	Support	Timeline
W1-1	<b>Food security policy:</b> develop a food security policy, including increased local food production and towards a future Food Security Strategy.	•	•	Community Planning	Communications	2023-2025
W1-2	<b>Community garden policy:</b> develop a community garden policy to support the retention of new sites for gardening and retain existing area.	•	•	Community Planning	Parks	2023-2025
W1-3	<b>Increase community food production:</b> develop partnerships and support community organizations to educate Colwood residents on practices to increase gardening for food production (including the Colwood Garden Society).		•	Community Planning		2023-2025
W1-4	<b>Reduce food impacts:</b> encourage low carbon foods and reduced food waste through leadership, communications, and partnership initiatives.	•	•	Community Planning, Communications		2023-2025/ ongoing
W2 Reduce Waste Impact: reduce the climate impacts of waste through reduced consumption, zero waste, and supporting a circular economy						
Action		Mit	Ad	Lead	Support	Timeline
W2-1	<b>Zero waste strategy:</b> develop a strategy for a zero-waste target to eliminate 100% of divertible materials from the waste stream in Colwood and in collaboration with regional partners.	•	•	Community Planning	Communications	2023-2025
W2-2	<b>Zero waste advocacy:</b> coordinate with the CRD and partners to advocate for advanced Extended Producer Responsibility (EPR), 'Right to Repair' Legislation, restrictions on single use plastics/items, and advocacy towards a circular economy.	•	•	Community Planning	CRD	2023-2025
W2-3	<b>Zero waste communications plan:</b> develop and implement ongoing communications to support zero waste efforts, innovation, and related events in Colwood and the region. Support implementation of a Zero Waste Strategy and incorporate programs such as the provincial "Love Food Hate Waste" campaign.	•	•	Communications, Community Planning		2023-2025
W2-4	<b>Local waste study:</b> conduct or support a local waste composition study in order to plan and track improvements in local waste diversion, including organic waste.	•	•	Community Planning	CRD	2023-2025
W2-5	<b>Increased sustainable living:</b> encourage Colwood residents and businesses to reduce impacts related to consumption and waste			Community Planning, Communications		Ongoing

## Pathway 6: Community Well-being & Eco-Innovation

C1 Engage, empower and support the community in climate action and planning						
Action	Mit	Ad	Lead	Support	Timeline	
C1-1	•	•	Community Planning	Emergency Services, Communications	2023-2025	
C1-2		•	Community Planning, Human Resources	All	2023-2025	
C1-3	•	•	Community Planning, Communications	Emergency Services	2023-2025	
C1-4	•	•	Development Services, Community Planning	Communications	2023-2025	
C1-5	•	•	Community Planning, Communications	All	Ongoing	
C2 Eco-Innovation: support and incentivize community eco-innovation & networks						
Action	Mit	Ad	Lead	Support	Timeline	
C2-1	•	•	Community Planning	Communications, Chamber of Commerce	2023-2025	
C2-2	•	•	Community Planning	Chamber of Commerce	2023-2025/ongoing	
C2-3			Community Planning	Chamber of Commerce, Royal Roads	2023-2025/ongoing	
C2-4			Community Planning		2023-2028	

Community Well-being & Eco-Innovation

## Appendix B: Glossary

<b>Adaptation</b>	Any initiative or action in response to actual or projected climate change impacts that reduces the effects of climate change on built, natural, and social systems.
<b>Climate Change</b>	Significant changes in global temperature, precipitation, wind patterns and other measures of climate that occur over several decades or longer. Not to be confused with weather, climate is the overall trend or average of weather, whereas weather is a day-to-day occurrence.
<b>Co-benefits</b>	The beneficial social, cultural, economic, and/or environmental effects of a policy or action that aims to reduce climate change risks and greenhouse gas emissions. Effective climate action advances sustainable community priorities.
<b>Greenhouse Gas (GHG)</b>	A gas that contributes to the greenhouse effect by absorbing infrared radiation. The main GHG's include water vapour, carbon dioxide, methane, and nitrous oxide. GHGs are released into the atmosphere both naturally and from human activity and amplify earth's warming.
<b>Hazard</b>	A biophysical event (e.g., drought, rain, or wind) that could cause potential impacts. <sup>1</sup>
<b>Impact</b>	The effects of existing or forecast changes in climate on built, natural and human systems, i.e., the effects of climate change on lives, livelihoods, health, ecosystems, economies, societies, cultures, services, and infrastructure. One can distinguish between potential impacts (impacts that may occur given a projected change in climate, without considering adaptation) and residual impacts (impacts of climate change that would occur after adaptation). <sup>1</sup>
<b>Low Carbon Resilience</b>	A step change in climate action that coordinates and mainstreams adaptation, mitigation, and co-benefits in municipal planning and decision-making processes.
<b>Mitigation</b>	Efforts to reduce or prevent emission of greenhouse gases.
<b>Nature-based Solutions</b>	"Actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits <sup>2</sup>
<b>Net Zero Emissions</b>	Emitting no greenhouse gas emissions or offsetting emissions, for example, through actions such as tree planting or employing technologies that can capture carbon before it is released into the air. <sup>3</sup>
<b>Resilience</b>	The capacity of a system, community or society exposed to hazards to adapt by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. <sup>1</sup>
<b>Risk</b>	The combination of the likelihood of an event occurring and its negative consequences. Risk can be expressed as a function where risk = likelihood × consequence. In this case, likelihood refers to the probability of a projected impact occurring, and consequence refers to the known or estimated outcomes of a particular climate change impact. <sup>1</sup>
<b>Vulnerability</b>	The degree to which a system or jurisdiction is susceptible to harm arising from climate change impacts. It is a function of a community's sensitivity to climate change and its capacity to adapt to climate change impacts. <sup>1</sup>

<sup>1</sup> Canadian Council of Ministers of the Environment. (2021). Guidance on Good Practices in Climate Change Risk Assessment. Retrieved from: <https://ccme.ca/en/res/riskassessmentguidancesecured.pdf>

<sup>2</sup> Cohen-Shacham, E., Walters, G., Janzen, C., & Maginnis, S. (Eds). (2016). Nature-based solutions to address global societal challenges. IUCN, 97, 2016-036.

<sup>3</sup> Government of Canada. (n.d.). Net Zero by 2050. Retrieved from: <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050.html>



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