

District of Metchosin

Climate Action Plan

2023-2028

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Background

Purpose

To avoid the catastrophic impacts that would result from global warming, the Intergovernmental Panel on Climate Change (IPCC) emphasizes the need to reduce greenhouse gas (GHG) emissions globally and reach net-zero GHG emissions by mid-century to limit global warming to no more than 1.5 °C above pre-industrial levels. The 2015 Paris Agreement, signed by Canada and 194 other nations, commits to keeping the global temperature rise well below 2°C this century and aiming to limit warming to 1.5°C above the pre-industrial average. To achieve these targets, Canada's federal and provincial governments have developed ambitious targets and legislation, regulation, policies and programs to meet them.

The impacts of climate change are clearer every year, and every community has an important role to play in to reduce GHG emissions, and prepare for and manage climate change impacts that can no longer be avoided. The District of Metchosin is committed to doing its part to contribute to this urgent global effort, and to help residents prepare for and build resilience to current and future impacts of climate change.

The Metchosin Climate Action Plan tackles the challenges presented by climate change and establishes strategies to enhance community resilience and reduce greenhouse gas (GHG) emissions. These climate action strategies align with the community's rural and agricultural character, and are grounded in its abundant natural ecosystems.

The plan builds upon Metchosin's past and ongoing environmental protection efforts, and considers how Metchosin can best apply its limited influence and resources within the broader landscape of regional, provincial, and federal climate action. Land use, climate risk reduction, buildings, transportation, and community engagement are among the key areas of action addressed by the plan. Specific strategies and actions identified in each area to achieve significant emission reductions and foster a resilient and sustainable community.

Beyond key priorities for Metchosin's short-term climate action efforts, this plan provides a framework for climate action planning and decision making that will be reviewed, re-evaluated, and updated every 5 years to reflect the evolving impacts of climate change and the needs of the community.

Climate Impacts and Community Resilience

Summary of key regional climate impacts

The Capital Regional District's (CRD) regional climate projections identify a number of significant regional impacts with localized implications for Metchosin.[1] These include:

- Average **temperature increases** between 2 and 4 °C by the 2080s, with the largest increases occurring in the summer months, are expected to lead to more frequent and intense heatwaves. These events could threaten human health, and vulnerable populations (older adults, children, and people with chronic health conditions) in particular. They are also likely to increase demand for cooling systems and water resources, which will be impacted by changes to runoff, water quality, and potential water scarcity.

> *"I could not live in my house during heat wave, I could not exercise, my animals were in danger of heatstroke."*
>
> - Climate Action Survey Response

- The region is also projected to see a 10 to 20% **increase in precipitation** by the 2080s, with the largest increases in winter, potentially triggering landslides and exacerbating flooding. Expected increase in extreme weather events, including hurricanes and heavy rainfall, could amplify these impacts, damaging infrastructure and property and disrupting transportation, communication, and essential services.
- **Wildfires** are also projected to become more frequent and intense throughout the region, causing damage to property, infrastructure, and ecosystems. For Metchosin, this may lead to increasing occurrences of wildfire **smoke and reduced air quality** and an increased risk of wildfires for Metchosin and the surrounding area.

> *"Wildfire smoke from other regions on the mainland and US states has been most [noticeable] in recent years. I stay indoors, which does restrict basic exercise in the summer outside."*

- **Sea-level rise**, up to 1 meter by 2100, may lead to **heightened flooding and increased erosion** in the district's coastal areas, posing risks to exposed ecosystems, infrastructure, and property. A 2014 CRD analysis of the impacts of sea level rise in Albert Head Lagoon, one of the district's most low-lying areas with shoreline infrastructure or development, identified $3.4 million in assessed residential land and improvement value could be affected.[2]
- The impact on ecosystems and agriculture is also a concern, as **changes in temperature and precipitation patterns** could lead to the loss of certain species and the decline of biodiversity, alter the timing and distribution of crops, pests and diseases and affect the availability of irrigation water.

> *"As a farmer, the intense heat and lack of soil moisture stress our crops."*
>
> - Climate Action Survey Response

Metchosin residents have expressed concern about climate change and how these impacts may affect the community's future and way of life. Many residents and community representatives who participated in community engagement activities emphasized the importance of building resilience to these impacts in order to preserve Metchosin's forested areas and diverse ecosystems, its water supply and agricultural lands that are central to the community's identity.[3]

[1] https://www.crd.bc.ca/docs/default-source/climate-action-pdf/reports/2017-07-17_climateprojectionsforthecapitalregion_final.pdf

[2] https://www.crd.bc.ca/docs/default-source/climate-action-pdf/reports/coastal-sea-level-rise-risk-assessment-report.pdf?sfvrsn=c09757ca_0

[3] More than half of respondents to an online climate action survey conducted in February and March of 2023 said they were concerned or very concerned about the impacts of climate change on Metchosin's ability to preserve its agricultural lifestyles and resilient local food systems, forested areas and diverse ecosystems, and the community's rural character.

Local action for adaptation and resilience-building

Metchosin has pursued a range of policies, programs, and planning decisions that further environmental sustainability and community resilience to the impacts of climate change. While some of these actions and initiatives are led by the District, many are pursued through collaboration with community partners that build from local and regional knowledge, skills, and capacity.

> *"The weather events themselves were challenging but manageable. It did cause some reflective thinking on how my family can better prepare for future events (such as getting rain barrels, generator, and creating a cool space in our house."*
>
> - Climate Action Survey Response

In terms of land use, some key community-driven initiatives in Metchosin include the *Metchosin Biodiversity Project*, which documents and publicizes biodiversity in Metchosin, and does restoration, the *Metchosin Invasive Species Cooperative (MISC),* which restores damaged habitats, and the Metchosin Foundation, which supports projects that improve environmental protection, stewardship and education. At the District, the *Metchosin Environmental Advisory Select Committee (MEASC)* considers environmental matters and reports findings to Council. The *Green and Blue Spaces Strategy* outlines conservation tools and priority actions. Additionally, the *Habitat Acquisition Trust (HAT)* is one regional organization that preserves habitat and at-risk species.

> *The heat wave and wildfire smoke last summer required changes in our daily routines as far as outdoor activities. We have cleared undergrowth as well as installing concrete board siding and a metal roof to better fire proof our property. The drought has caused us to [investigate] drilling a new well, as well as relying on our water tank almost exclusively for watering our garden.*
>
> - Climate Action Survey Response

The District has established specific bylaws to enhance and conserve its natural resources. These include a tree management bylaw (287) that limits tree removal and protects some tree species, as well as a rainwater management bylaw (467) to more effectively manage rainwater and drainage in ways that protect creeks, streams, and riparian-wetland areas.

To support more resilient and environmentally sustainable food systems, the District also continues to support the Metchosin Farmers Market and district membership in the Peninsula & Area Agricultural Commission. More directly, the District's Agricultural Advisory Select Committee has supported the development of a plan to promote and sustain the local agricultural community.

Summary of relevant federal and provincial policy

In response to increasingly frequent and severe climate impacts, federal and provincial government agencies are taking steps to help local governments prepare and respond in ways that support community resilience. Federally, Canada's National Adaptation Strategy (NAS) provides a framework for 'whole-of- society' climate change adaptation, and focuses on investments and initiatives that improve climate resilience.[4] Specific actions across these systems of interest to local government's include:

- Expanding federal engagement and **support for more resilient infrastructure.**
- Expanding the Canadian Federation of Municipalities (FCM) **Green Municipal Fund.** (As Metchosin is not a member of FCM, it is not currently eligible to apply for this funding).
- **Sector specific climate action funding and programs** that support health and wellbeing under a changing climate, natural climate solutions, carbon sequestration and biodiversity protection, and enhanced conservation of land and inland waters.

[4] https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/national-adaptation- strategy.html

In British Columbia, the provincial government has developed a **Climate Preparedness and Adaptation Strategy** that outlines a broad range of actions to address climate impacts and build resilience across communities in B.C.[5] Specific initiatives that shape potential resilience-enhancing opportunities for local governments include:

- Funding for **community emergency preparedness** that enhances the capacity of local governments and First Nations to reduce climate risk and hazards, and prepare and adapt to adverse climate events.
- **Funding for local government climate action that** offers predictable and consistent funding to local governments and Modern Treaty Nations for local climate initiatives.
- **Community resiliency funding** to support *FireSmart* and fuel management activities that reduce community risk from wildfire on provincial Crown land and private land.

Community emissions

Summary of greenhouse gas inventory

To better understand Metchosin's GHG emissions, a community-scale emission inventory was developed by the Capital Regional District (CRD) to quantify GHG emissions that result from activities taking place within the borders of the municipality.[6] This inventory (Figure 1) included energy used to heat and power buildings (electricity, natural gas, heating oil, etc.), energy used in transportation, and solid waste generated in Metchosin. The total amount of emissions generated in 2020 was equivalent to 20,634 tonnes of CO^2.

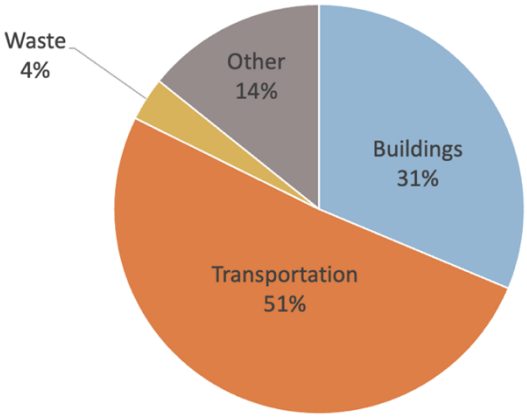


Figure 1 - Metchosin GHG Inventory by Sector (2020)

Transportation of people, goods and services is the most significant source of GHG emissions in Metchosin. Roughly 76% of these emissions were from passenger vehicles (cars), light trucks, and vans. According to the CRD's regional household travel survey, travel in and out of Metchosin is primarily by automobile (96%). Only 4% of trips in and out of the district were by transit (2%), bicycle (1%), or on foot (1%).

Buildings are another significant source of GHG emissions. The CRD's inventory estimates emissions associated with three categories of 'stationary energy sources': Residential; Commercial and Industrial; and Agriculture, Forestry and Fishing Activities. Estimates include emissions from a range of different energy sources related to building heating and electricity, as well as for equipment associated with activities occurring on or associated with these properties (e.g., farming or agricultural processing equipment, off-road construction equipment, etc.).

Solid waste emissions estimates are also provided by the Province, based on reporting from local jurisdictions. Estimated emissions from solid waste for Metchosin, show that waste accounts for 4% of the community's emissions. These emissions include GHGs related to solid waste disposal, incineration and open burning.

Other emissions sources included in this community emissions inventory include:

- *Industrial processes and product use (IPPU).* These emissions result from industrial or other processes and from the use of greenhouse gasses in products (e.g., cement production, etc.)

[5] https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc_roadmap_2030.pdf
[6] https://www.crd.bc.ca/docs/default-source/climate-action-pdf/reports/2020-crd-ghg-inventorystudy.pdf?sfvrsn=5b16ebcd_2

- *Off-road transportation*. These emissions result from off-road land, aviation or marine transportation or other equipment that occur at transportation facilitates or other locations not directly linked with a stationary residential, commercial, or industrial building or facility.
- *Agriculture, forestry and other land use (AFLU).* This sector includes emissions from land-use change, livestock, and the direct or indirect release of nitrous oxides (N2O) resulting from soil management, biomass burning, or the application of fertilizer or manure.

The inventory can provide some general parameters to inform decision-making, continued improvement in the provincial and regional inventory methods will provide a more accurate reflection of Metchosin's GHG emissions.

Mitigation leadership and action

Metchosin's forests, hedgerows, wetlands, and riparian ecosystems absorb and store significant amounts of carbon dioxide from the atmosphere. While this sequestered carbon is not formally included in the CRD's emissions inventory estimates due to its current methodology, protecting and enhancing these ecosystems can help to maintain and increase their carbon storage potential, furthering Metchosin's contribution to reducing GHG emissions and mitigating climate change.

The District's efforts to maintain the rural character of the area and preserve green spaces and valued marine and forest ecosystems by managing community growth have minimized the change in GHG emissions. Between 2007 and 2020, Metchosin's community GHG emissions decreased by almost 24%, the largest reduction in emissions across the CRD.[7] While it is inherently more challenging for a widely dispersed rural community to reduce reliance on personal vehicles, Metchosin residents have access to the Victoria Regional Transit System and the District actively engages with BC transit to advocate for improved transit service to the community. Metchosin has installed two public electric vehicle charging stations, and has a Park & Ride service area to enable ride sharing. Metchosin residents also benefit from the information and financial resources available through the CRD, which offers a variety of educational resources and rebate programs for residential efficiency and energy upgrades – including rebates for energy assessments, insulation and window upgrades, heat pump installation, and other improvements.[8]

Summary of relevant federal and provincial policy

Federally, Canada has set a GHG reduction target of 40-45% by 2030 relative to 2005 and net-zero emissions by 2050. In British Columbia, the government has set its own provincial emissions reduction targets of 40% by 2030, 60% by 2040, and net-zero by 2050, relative to 2007. The **CleanBC Roadmap** to 2030 outlines specific mitigation actions aimed at reducing the province's emissions by 26.7 MT CO2e, which is the amount needed to reach the 2030 target. Actions of interest to local governments include:

- An *accelerated zero-emission vehicle (ZEV) law* (26% of new light-duty vehicles by 2026, 90% by 2030, 100% by 2035)
- New regulations to enhance the *Low carbon fuel standard,* doubling the target for renewable fuels produced in B.C. to 1.3 billion litres by 2030
- *BC Building Code*: Carbon pollution standards introduced for new buildings in 2024, with zero-carbon new construction by 2030

[7] https://www.crd.bc.ca/docs/default-source/climate-action-pdf/reports/2020-crd-ghg-inventorystudy.pdf?sfvrsn=5b16ebcd_2
[8] https://www.crd.bc.ca/education/climate-action/reducing-greenhouse-gas-emissions/buildings/rebates-retrofits

- *Highest efficiency standards*: After 2030, all new space and water heating equipment sold and installed in B.C. will be at least 100% efficient (i.e., electric resistance heating, heat pumps, and hybrid electric heat pump-gas systems)

Climate Leadership

A Resilient and Low-Carbon Metchosin

Metchosin is committed to enhance and focus its climate action efforts, and continue to support provincial, regional, and local citizen-led initiatives that improve environmental sustainability. While the District is a small jurisdiction with limited resources, it has a wealth of community and natural assets.

Metchosin has an abundance of skilled and knowledgeable citizens, passionate local organizations and businesses, and a broad regional network that provides access to research, capacity, and resources. Its expansive, diverse, and complex forest and marine ecosystems are valued by both residents and visitors, who benefit from the community's ongoing efforts to protect these natural assets. In this context, the District's climate leadership will seek to build a more resilient and low-carbon future for Metchosin through climate action that is grounded in the following key principles:

1. **Deepening understanding of climate change impacts and emerging opportunities for action;**
2. **Increasing capacity for action through collaboration with local, regional and provincial partners; and**
3. **Focusing efforts on climate action within the District's jurisdiction and influence.**

Building adaptation capacity

Metchosin will continue to support local and regional efforts to better understand the ways that local residents, critical community infrastructure, and natural ecosystems will be impacted by climate change. The District will continue to address these impacts through collaboration and partnerships that enable the development of adaptation capacity and further strengthen community resilience. Protecting and enhancing the forests, coastlines, and wetland and riparian areas that contribute to community resilience through the valuable ecosystem services they provide will continue to be a central part of Metchosin's climate leadership.

Reducing carbon emissions

A "business-as-planned" emission scenario was created for Metchosin that serves as a starting point for understanding the expected path of the community's GHG emissions over the coming decades (shown as the orange line in Figure 3), based on limited population growth. This scenario estimates that Metchosin's emissions will go down an estimated 32% by 2030, and over 60% by 2050, as a result of implementing the provincial and federal government policies noted earlier. Although this moves the community in the right direction, there still remains a significant gap to align with the global effort to rapidly reduce emissions.

This plan establishes updated and ambitious GHG reduction targets for the community: a 40% greenhouse gas (GHG) reduction (below 2007 levels) by 2030 and to become a net-zero community by 2050. These targets are consistent with the District's approach of aligning its targets with those of the Provincial government and Capital Regional District (CRD).[9]

[9] https://metchosin.civicweb.net/document/2463/

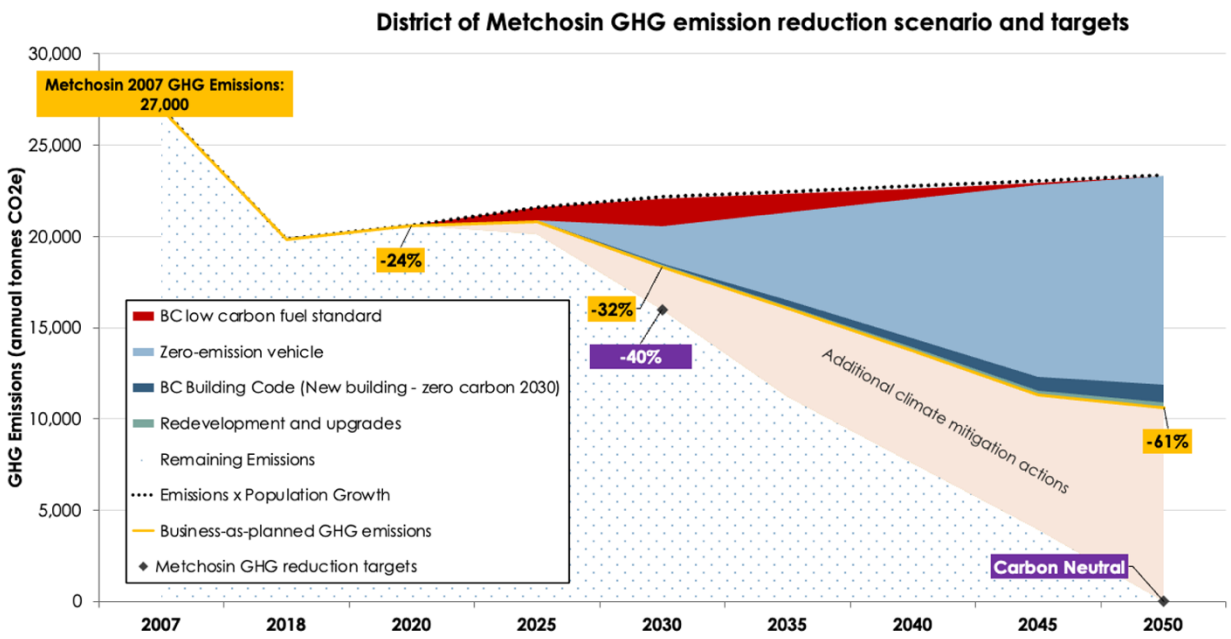


Figure 2 - Metchosin community GHG emissions "business-as-planned" forecast with senior government policies (2020-2050)

In considering the community's carbon footprint, it should also be noted that the emissions sequestered by Metchosin's forests, riparian wetland areas, and other protected natural assets are currently excluded in the CRD's current GHG reporting methodology. Metchosin will continue to advocate for greater recognition for the role that these community resources play in climate change mitigation.

Recognizing the District's limited capacity to reduce emissions in key sectors such as transportation and buildings, advancing the additional climate mitigation actions required to achieve these bold targets will require additional efforts from community members and businesses, and substantial provincial and regional support and resources. This climate action plan outlines key areas of action where Metchosin and community members can demonstrate climate leadership and make a meaningful contribution to mitigating climate change.

Climate Action Plan Development

Metchosin's Climate Action Plan was developed over an eight-month period through research, analysis, a community survey, and workshops with Council and community representatives (see Figure 3 for a summary of the process). Metchosin is fortunate to have an engaged community of citizens that took the time to provide meaningful input into the process, and will continue to shape the implementation of the plan and the community's future climate action efforts over the years ahead.

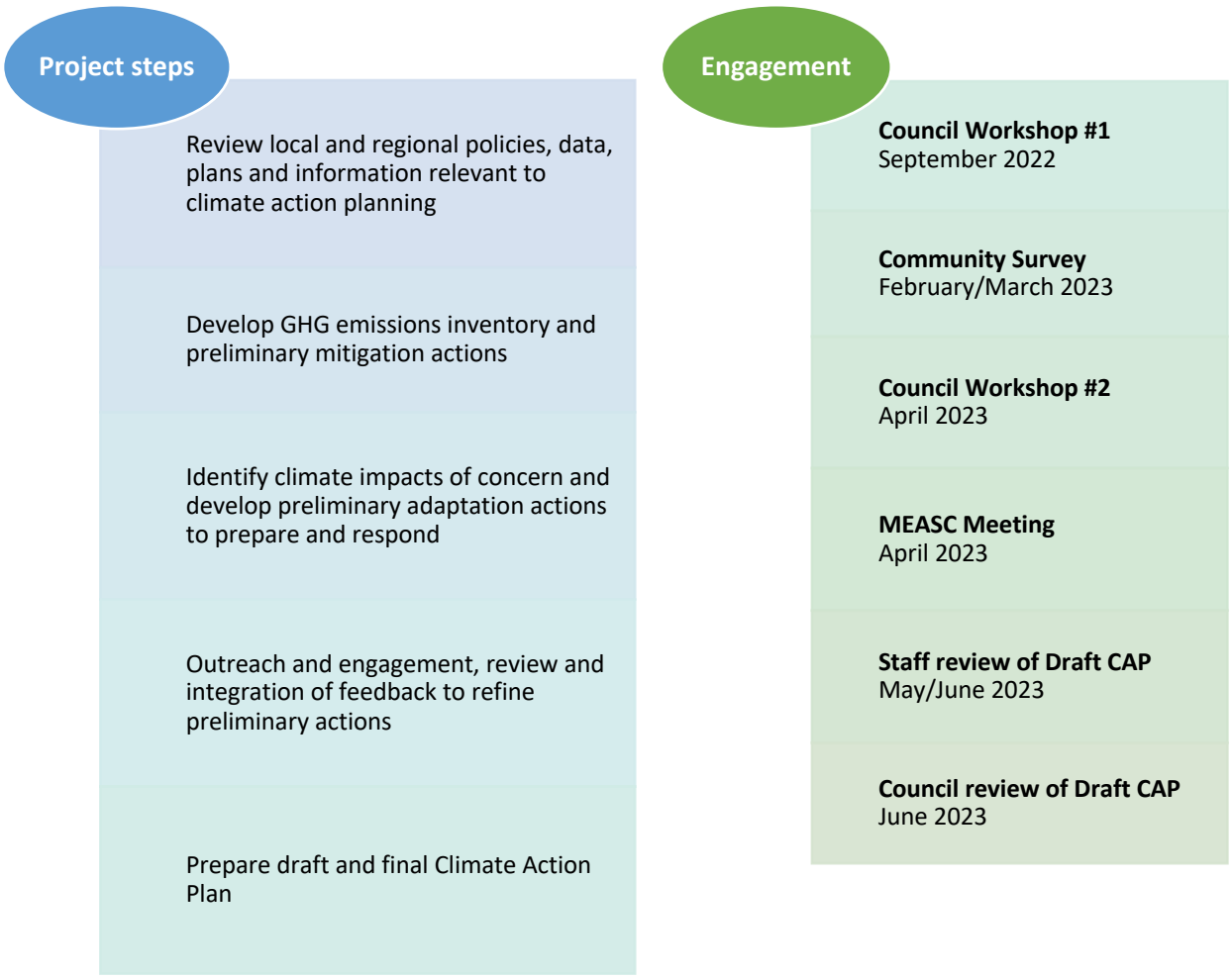


Figure 3 – Climate Action Plan Development and Engagement Activities

Through these engagements, key climate change impacts of concern were identified and an ambitious but realistic GHG mitigation target was developed. To prepare for and respond to these impacts and to meet this target, a focused set of climate action priorities was developed that speaks to Metchosin's commitment to climate action in five distinct areas, with specific priority actions identified for each area.

This framework for action reflects the community's unique rural, agricultural and natural character, and provides a guide to the community's climate action efforts over the coming years. This plan sets out a climate action path for the District and guidance for initial steps along that path. This path can be reassessed and re-charted over the years to come, as our understanding of climate change's implications for the district evolve, as the regulatory and social and economic circumstances shift, and as new technology changes the solutions available.

Climate Action Plan

To advance Metchosin's climate action efforts, this action plan articulates climate action goals and specific opportunities for action in five action areas: land use and agriculture, climate risk reduction, buildings, transportation, and community engagement.



For the priority actions identified under each of the five action areas and goals, an approximate estimate of the timeline for completion, cost of implementation and staff resources required are described. The scale for these estimates is detailed in Table 1.

Other notable actions were identified through the climate action planning process, but were not selected as priority actions. These additional actions are outlined in Appendix B for future consideration as opportunities arise and/or resources allow.

Table 1 – Investment and staff time estimate range for implementing priority actions

Timeframe		Investment		Staff resources
Short	**1-2 years**	$	$0 - $5,000	* Less than 10% of one FTE^
Medium	**3-4 years**	$$	$5,000 - $15,000	** 10-25% of one FTE
Long	**5+ years**	$$$	$15,000 - $75,000	*** 25-75% of one FTE
Ongoing		$$$$	$75,000+	**** 75% to 100% of one+ employees dedicated

Table note: ^An FTE means one full-time employee's role.

This plan is intended to be reviewed by the District every five years. Beyond the completion of specified priority actions, for the next review period, Metchosin should consider the development of an evaluation framework to establish and measure its progress towards the completion of climate action goals in each of these five areas.

Table 2 – Summary of Climate Action Goals, Priority Actions and Implementation Details

Action Area	Goal	Priority Actions	Timeline	Investment	Staff Resources
1. Land Use, Agriculture and Waste	1.1 Preserve, protect and enhance natural ecosystems	a) Investigate and report to Council on development of land-use conservation and enhancement targets.	Medium	$	*
		b) Engage with partners to solicit external funding for new habitat protection and restoration projects (e.g., invasive species management)	Medium	$	**
		c) Leverage land acquisition funding to buy and convert additional District lands into protected areas.	Long	$$$$	*
	1.2 Develop, protect and enhance agricultural lands	a) Develop an Agricultural Plan that encourages and supports climate change resilience, enhanced biodiversity and low carbon agricultural practices.	Short	$$$	***
2. Risk Reduction from the Impacts of Climate Change	2.1 Assess and map climate hazards and vulnerability	a) Complete extreme heat risk assessment and mapping.	Short	$$$	***
		b) Develop a shoreline protection plan to address sea level rise	Medium	$$$	**
		c) Investigate and apply for funding to conduct a localized climate hazard and vulnerability assessment.	Medium	$$$	***
	2.2 Enhance climate resilience of municipal assets and services	a) Integrate climate change into District asset management planning (e.g. culvert replacement) and policy development (e.g. electrification of municipal buildings)	Ongoing	$$	***
	2.3 Reduce water consumption and improve water conservation	a) Investigate and report to Council on opportunities to enhance groundwater protection and conservation (e.g., via increase rainwater harvesting, efficient irrigation, xeriscaping).	Medium	$	*
3. Buildings	3.1 Advocate for and improve residents' access to household climate action support	a) Continue to share information and promote participation in the CRD's regional home retrofit and fuel switching program.	Ongoing	$	*
	3.2 Increase energy efficiency and climate resilience of buildings	a) Encourage residents to undertake home energy audits	Medium	$	*
		b) Encourage residents to undertake *Firesmart* Home Ignition Zone assessments.	Medium	$	*
		c) Develop a 'sustainability checklist' to ensure retrofits and re-developments are efficient and climate resilient.	Medium	$	**
		d) Investigate and report to Council on the costs and benefits of higher energy efficiency and renewable energy generation in proposed new firehall.	Short	$	*
4. Transportation	4.1 Improve active transportation infrastructure	a) Develop an active transportation plan for Metchosin.	Short	$$$	**
	4.2 Encourage and enable electric vehicle use	a) Return existing public EV charging stations to service.	Short	$	*
5. Community Engagement	5.1 Enhance community engagement in climate action	a) Establish local partnerships and investigate funding for a climate change and sustainability lecture series.	Medium	$	**

1. Land Use, Agriculture and Waste

Goals

1.1 Preserve, protect and enhance natural ecosystems

1.2 Develop, protect and enhance agricultural lands

Overview

Metchosin's natural ecosystems and agricultural lands are valued community assets that enhance both the community's resilience to climate change hazards and mitigate climate change by sequestering greenhouse gases.

Projected changes in the climate, however, could pose challenges for the local ecosystems and species to adapt to shifting climate variability, and may also impact agricultural production. Changes in temperature, air moisture, and extreme weather events can affect the distribution and composition of ecosystems and disrupt biological relationships, leading to species declines and invasive species. Changing temperatures are expected to lengthen the growing season by increasing the number of growing degree days and the number of frost-free days. This may present an economic opportunity for agricultural producers, however, increased water scarcity, heat stress, intense storms and outbreaks of pests may present challenges for the agricultural sector. Metchosin's agricultural producers generally operate on a smaller scale that allows for nimbler and more innovative adaptation to changing climate conditions, shifting energy costs and changes in seasonal water availability.

Land use is an area of action in which the District has clear jurisdiction to exercise significant influence, and Metchosin has consistently supported local and regional efforts to protect and enhance natural landscapes and agricultural lands in and around the community. Citizen-led land protection efforts, including establishing covenants that preserve natural ecosystems on private lands, and continuing to explore partnerships with Sc'ianew First Nation and others, can also play an important role in this effort.

Municipal Actions and Resources

Metchosin supports and engages with local organizations, such as the *Metchosin Invasive Species Cooperative (MISC*), the *Metchosin Foundation*, and others that play an important role in preserving, restoring and enhancing Metchosin's natural landscapes. The District's *Agricultural Advisory Select Committee* has been working with the community to develop a community agricultural plan. This presents an opportunity to support local agricultural producers to understand and prepare for future climate change and integrate low-carbon farming practices into their operations. The local agricultural community is also connected with regional organizations such as the *Peninsula & Area Agricultural Commission* that provide guidance and access to resources and expertise.

Metchosin will continue to advocate with provincial and regional government partners to protect and preserve the district's lands and waters, and explore partnerships with organizations and First Nations that benefit this effort.

Priority Actions

#	Actions	Timeline	Investment	Staff Resources
1.1a	Investigate and report to Council on development of land-use conservation and enhancement targets.	Medium	$	*
1.1b	Engage with partners to solicit external funding for new habitat protection and restoration projects (e.g., invasive species management).	Medium	$	**
1.1c	Leverage land acquisition funding to buy and convert additional District lands into designated protected areas.	Long	$$$$	*
1.2a	Develop an Agricultural Plan that encourages and supports climate change resilience and low carbon agricultural practices.	Short	$$$	***

2. Risk Reduction from the Impacts of Climate Change

Goals

2.1 Assess and map climate hazards and vulnerability
2.2 Enhance climate resilience of municipal assets and services
2.3 Reduce water consumption and improve water conservation

Overview

Climate change is already affecting Metchosin, and the future extent and severity of various climate change trends and hazards for the community remain largely uncertain. More detailed assessments of community-specific climate hazards and vulnerabilities are required to develop a clearer sense of which climate impacts should be prioritized for response. Regional projections provide a snapshot of some potential impacts of concern.

Increases in temperature during the summer months are expected to increase average summer temperatures and periods of drought, and may lead to more frequent extreme heat events. Increased heat and drought will increase the risk of wildfires throughout Metchosin that could directly impact people and property. Furthermore, increases in the frequency and severity of wildfires across Coastal British Columbia and the broader Northwest region may also lead to increases in wildfire smoke and reduced air quality. Both of these climate hazards present risks for the health and wellbeing of residents, impacting their ability to recreate outdoors and presenting additional risks for vulnerable populations (older adults, children, and people with chronic health conditions).

Increased summer heat that coincides with periods of drought can increase demand for water resources, while also affecting the availability of water for residents, agricultural producers, and others.

Increases in precipitation and changes to precipitation are expected, as well as increases in heavy rainfall events that may increase flooding, erosion, and landslide risk. These impacts can cause damage to property, infrastructure, and disrupt transportation, communication and access to essential goods and services.

Municipal Actions and Resources

The Province coordinates emergency response efforts in the event of climate-related emergency events, and Metchosin staff and volunteers have a role to play in supporting these efforts through established emergency management systems.

Various funding opportunities are available to local governments through the Provincial government and CRD to support emergency planning and disaster mitigation initiatives. Completing a hazard, risk and vulnerability assessment or climate change specific risk assessment process can help to strengthen the application and effectively focus any external resources that can be secured to advance local climate resilience.

Priority Actions

#	Actions	Timeline	Investment	Staff Resources
2.1a	Complete extreme heat assessment and mapping.	Short	$$$	***
2.1b	Develop a shoreline protection plan to address sea level rise.	Medium	$$$	**
2.1c	Investigate and apply for funding to conduct a localized climate hazard and vulnerability assessment.	Medium	$$$	***
2.2a	Integrate climate change into District asset management planning and policy development.	Ongoing	$$	***
2.3a	Investigate and report to Council on opportunities to enhance groundwater protection and conservation and (e.g., via increase rainwater harvesting, efficient irrigation, xeriscaping).	Medium	$	*

3. Buildings

Goals

3.1 Advocate for and improve residents' access to household climate action support
3.2 Increase energy efficiency and climate resilience of buildings

Overview

Metchosin is a rural district with few commercial buildings and residential properties that are relatively large, many of which are relatively old. These older homes were built to a standard that is relatively inefficient in terms of their insulation, and reflects a historical climate that, as temperatures and precipitation increase, is increasingly misaligned with the current climate and weather patterns of the region.

A 2021 CRD study found that Metchosin residents have average annual energy costs higher than all but one of their CRD counterparts.[10] The study also estimated that GHG emissions from residential heating could be reduced by up to 43% through an effective standard efficiency retrofit program, and by up to 66% for a program that also included fuel switching (e.g., through heat pump installation). Heat pumps also offer the benefit of cooling in response to increasing summer temperatures. Recognizing the rural area may be subject to power outages, backup power and heating is also an important consideration for Metchosin residents. During outages, residents may need to rely on wood heating or temporary generators.

Projected temperature increases will require that buildings be more durable and resilient, designed to keep residents safe and comfortable during warmer summers and extreme heat events and reduce the risk of sudden or slow-onset damage from changes in precipitation patterns and potential increases in the severity of storm events. As aging properties are redeveloped, there is an opportunity to encourage and support property owners to rebuild or retrofit their homes in ways that reduce \ GHG emissions and improve the resilience to future climate impacts.

Municipal Actions and Resources

The Province is responsible for establishing building code requirements, but has created voluntary Energy and Zero Carbon Step Codes to provide builders with clearer guidance on the development of higher performing buildings that exceed current building code requirements. These codes will become mandatory across the province in 2030, but municipalities can choose to voluntarily adopt the Step Codes before that date.

Metchosin is a participant in the CRD's home energy navigator program, a tool that helps home owners' more easily access information and apply to various home efficiency and renewable energy funding programs.

Priority Actions

#	Actions	Timeline	Investment	Staff Resources
3.1a	Continue to share information and promote participation in the CRD's regional home retrofit and fuel switching program.	Ongoing	$	*
3.2a	Encourage residents to undertake home energy audits	Medium	$	*
3.2b	Encourage residents to undertake *Firesmart* Home Ignition Zone assessments.	Medium	$	*
3.2c	Develop a 'sustainability checklist' to ensure retrofits and re-developments are efficient and climate resilient.	Medium	$	**
3.2d	Investigate and report to Council on the costs and benefits of installing renewable energy generation in proposed new firehall.	Short	$	*

[10] https://www.crd.bc.ca/docs/default-source/default-document-library/appendix-a-crd-residential-energy-retrofit-program---business-case-report.pdf?sfvrsn=95823ccd_0

4. Transportation

Goals

4.1 Improve active transportation infrastructure
4.2 Encourage and enable electric vehicle use

Overview

As a rural community whose residents must travel to other cities and towns in the region to access essential goods and services, Metchosin is a largely car-dependent community. The vast majority of residents travel by car, and transportation is Metchosin's single largest source of carbon emissions. Encouraging and supporting residents to reduce transportation emissions is a significant challenge for Metchosin. Addressing this challenge will require a broad community effort supported by broader regional and provincial transportation initiatives.

Regional transit services are improving, but scheduled transit service to Metchosin remains relatively infrequent, and residents often need to travel – by car, bicycle, or on foot – to regional transit hubs in neighbouring municipalities to catch more direct and frequent connections.

Increasing cycling and walking connectivity within the community and between Metchosin and regional transit hubs may help to make transit services more accessible to more residents. Developing an active transportation plan can smooth the pathway for Metchosin to apply for a range of active transportation infrastructure grants. Preliminary steps to inform the development of the strategy include investigating external funding options for strategy development, and examining relevant examples of comparable Active Transportation strategies.

British Columbia has seen the fastest growth of zero emissions vehicles in Canada: over 18% of new light-duty vehicles sold in 2022.[11] As the transition towards zero emissions vehicles progresses, ensuring adequate vehicle charging infrastructure will become increasingly important for residents and visitor's basic transportation needs.

Municipal Actions and Resources

As Provincial vehicle standards will require that all new vehicle sales be zero emissions vehicles by 2035, senior governments are supporting this shift by providing funding for individuals to purchase ZEVs and for communities and businesses to install ZEV infrastructure. Metchosin has installed two public electric vehicle charging stations, which are both in need of repair and an ongoing maintenance to ensure continued functionality.

Metchosin has a Park & Ride location at St Mary's Anglican Church for residents, and is served by three BC transit routes as well as more frequent service through a planned regional transit hub at Royal Bay. The District is currently exploring options to improve active transportation connections to facilitate and encourage travel by bike and on foot. The Federation of Municipalities (FCM) provides grants for active transportation and other climate mitigation and adaptation initiatives; reassessing the costs-benefits of FCM membership with respect to potential revenue sources from FCM grants may provide a clearer sense of the potential value of participating in this organization.

Priority Actions

#	Actions	Timeline	Investment	Staff Resources
4.1a	Investigate and report to Council on options to develop an active transportation plan for the District.	Short	$$$	**
4.2a	Establish private partnerships to repair and maintain existing public EV charging stations.	Short	$	*

[11] https://news.gov.bc.ca/releases/2023EMLI0025-000481

5. Community Engagement

Goals

5.1 Enhance community engagement in climate action

Overview

Metchosin has an abundance of local climate action capacity in the knowledge, skills, and passion of its residents. As a small community with limited resources, advancing Metchosin's diverse climate goals will require significant leadership and action from community members and local organizations and businesses. It is also connected to a regional network of local governments, academic and research institutions, and other organizations that can provide information, expertise, and resources that can be mobilized to support community climate action efforts.

Leveraging these local partnerships and resources to create opportunities for community members to take individual action to build resilience to climate change and reduce GHG emissions is a critical part of Metchosin's approach to climate action leadership. To do so effectively, community members need to be directly and regularly engaged in conversations about local climate action, and empowered with the knowledge and resources to take individual action, and to mobilize and coordinate others.

Municipal Actions and Resources

There is significant interest from community members to learn more about climate change impacts and opportunities for action, and to discuss and share their knowledge and ideas. Metchosin provides a range of opportunities for residents to engage in community conversations and decision-making processes about environmental sustainability and climate change resilience. These include Metchosin's Environmental Advisory and Select Committee, The Agricultural Advisory Select Committee, and Regular Council meetings, which citizens can attend to provide their input on a variety of issues that impact community sustainability and resilience.

Beyond these forums, the District website's *Environment and Wildlife* page also provides a communication channel to share information and educational materials with residents about a range of environmental issues, including, currently, brochures on the area's shorelines and wildlife, its riparian areas regulation, and protected trees. Outside of these District-driven communication and engagement channels, there are also a range of other local and regional organizations that seek to create opportunities for residents to learn from knowledgeable experts, and participate in volunteer activities that support community and environmental sustainability and resilience.

Metchosin has demonstrated the capacity for community resilience in the event of an emergency situation. This capacity may be useful in organizing and coordinating future small-scale community-driven climate action initiatives.

Priority Actions

#	Actions	Timeline	Investment	Staff Resources
5.1a	Establish local partnerships and investigate funding for a community-led climate change and sustainability lecture series.	Medium	$	**

Appendix A – Detailed community emission inventory for Metchosin

Table 1: Community Energy Use and GHG Emissions (2020), provided[12]

Source	Type	2020 Energy (GJ)	2020 GHG Emissions (tCO2e)
Stationary Energy			
Residential Buildings	Electricity	138,768	1,546
	Natural Gas	10,441	521
	Fuel Oil	12,373	846
	Propane	1,266	77
	Wood	2,880	68
	Diesel	2,561	180
Commercial & Industrial Buildings	Electricity	39,630	441
	Natural Gas	27,808	1,387
	Fuel Oil	-	-
	Diesel	5,685	399
Agriculture, Forestry and Fishing Activities	Diesel	14,130	991
Fugitive Emissions			4
Total Stationary Energy		*255,542*	*6,459*
On-Road Transportation			
On-Road Transportation	Electricity	970	11
	Gasoline	113,516	6,633
	Diesel	52,054	3,870
	Propane	125	6
Total On-Road Transportation		*166,665*	*10,519*
Off-Road Transportation			
Marine, Aviation and Other Off-Road Vehicles	Marine Gasoline + Marine Diesel + Jet Fuel	14,406	1,042
Total Off-Road Transportation		*14,406*	*1,042*
Waste			
Solid Waste			709
Total Waste		-	*709*
Industrial Processes and Product Use (IPPU)			
Product Use			1,611
Total IPPU		-	*1,611*
Agriculture Forestry & Other Land Use (AFOLU)			
Livestock			244
Aggregate Sources			49
Total AFOLU			*294*
TOTAL		**436,613**	**20,634**

[12] Adapted from Capital Region District – Municipalities and Electoral Areas 2007 Base Year and 2018 Reporting Year Energy & GHG Emissions Inventory: https://www.crd.bc.ca/docs/default-source/climate-action-pdf/reports/2020-crd-ghgmembermunicipality.pdf?sfvrsn=2716ebcd_2

Appendix B – Additional climate action opportunities for Metchosin

In addition to the priority actions selected and described in the core document, there are several other important opportunities for action that were identified through this process. In 2023, Metchosin initiated strategic planning to define Council priorities and to assist with future annual capital and operating budgets. These actions are included for future reference, to be adopted as opportunities arise (e.g. supportive grant funding) and/or resources allow.

Action Area	Additional Opportunities for Actions
1. Land-Use, Agriculture and Waste	• Lobby senior and regional governments for improved land protection and ecological preservation. • Investigate opportunities to encourage wetland and riparian restoration. • Support partner efforts to enhance agricultural land preservation. • Continue support for invasive species management. • Investigate the development of a municipal compost yard. • Investigate the development of a waste gasification facility for the District. • Investigate the development of recycling services. • Investigate opportunities to better recognize role of carbon sequestration in CRD emissions inventory assessments.
2. Climate Risk Reduction	• Investigate opportunities to use natural asset management tools and approaches to manage climate impacts. • Investigate building, plumbing code changes to permit outdoor greywater reuse.
3. Buildings	• Continue to share information and promote participation in the CRD's regional home retrofit and fuel switching program. • Advocate at CRD for enhanced recognition of carbon sequestration in greenhouse gas inventory. • Consider accelerated STEP code adoption at District level. • Promote voluntary adoption of Steps 4 and 5 of the BC Energy step code for private development. • Investigate local implementation of property assessed clean energy (PACE) program.
4. Transportation	• Continue to lobby BC transit to further improve transit scheduling and bike-to-transit connectivity and advocate for BC Transit to accelerate implementation of on-demand transit service for Metchosin. • Identify and apply for external funds to purchase and install additional public EV charging stations. • Explore opportunities to support local businesses with public parking in key locations to install electric charging infrastructure. • Encourage/require and support the installation of 220v EV charging electrical connections for new builds and retrofits.
5. Community Engagement	• Engage with partners to identify and solicit external funding for new habitat protection and restoration projects.