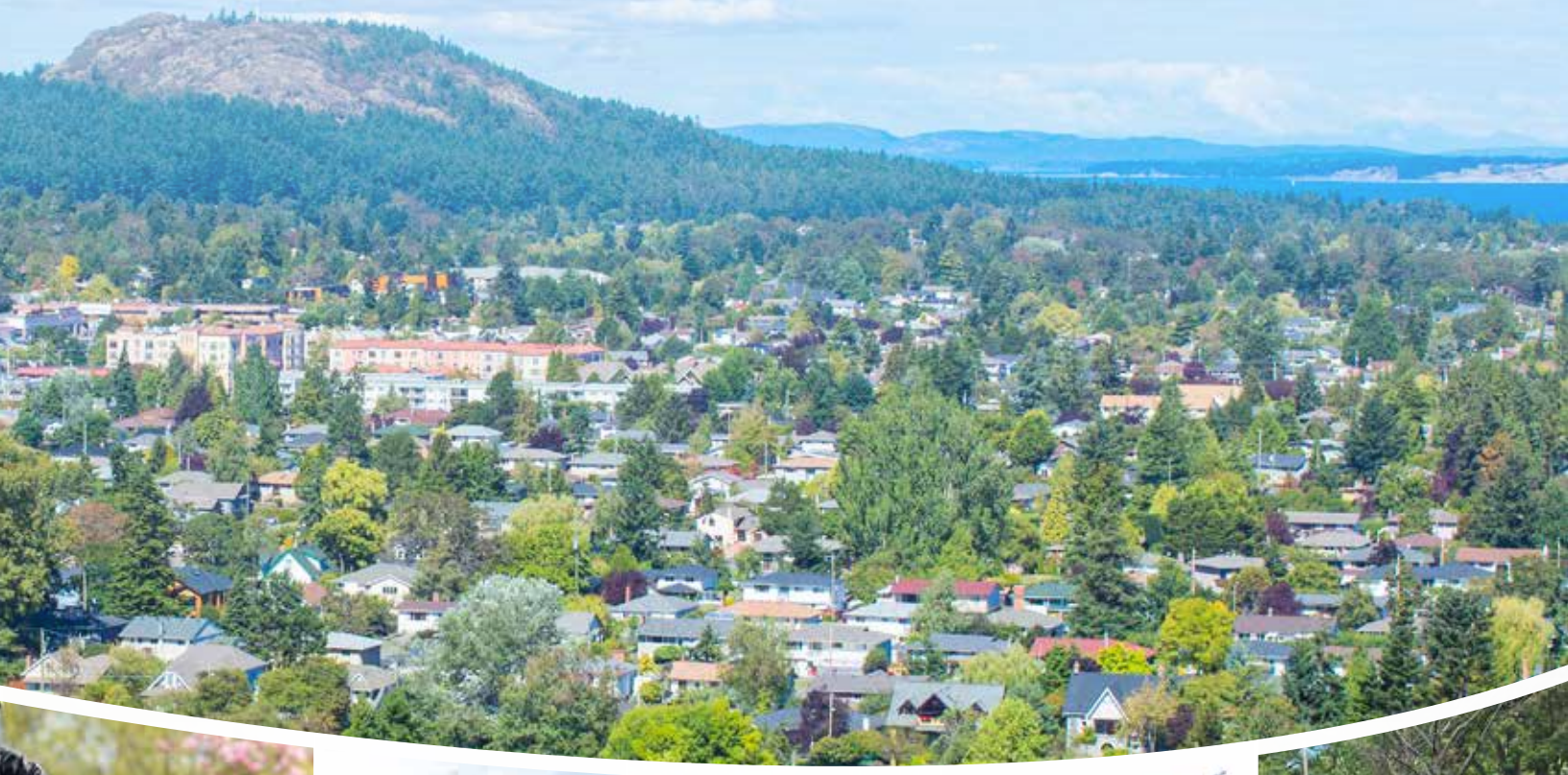
2020 Climate Plan

100% Renewable & Resilient Saanich



Territory Acknowledgment

The District of Saanich is within Coast and Straits Salish territory, the territories of the Lekwungen peoples, known today as Songhees and Esquimalt Nations, and the W̱SÁNEĆ peoples, known today as W̱JOŁEŁP (Tsartlip), BOḰEĆEN (Pauquachin), STÁUTW̱ (Tsawout), W̱SIḴEM (Tseycum) and MÁLEXEŁ (Malahat) Nations. The First Peoples have been here since time immemorial and their history in this area is long and rich.

The District of Saanich is proud that our name is derived from the W̱SÁNEĆ peoples. Saanich Council is committed to taking a leadership role in the process of healing wounds of the past and becoming a more just, fair and caring society.

The District of Saanich recognizes the Lekwungen and W̱SÁNEĆ peoples as the traditional custodians of the land in which our municipality is located. As we build formal government-to-government relationships with neighbouring First Nations governments, including the Songhees, Esquimalt, Tseycum, Tsartlip, Tsawout, Pauquachin and Malahat First Nations, the District will look for opportunities to collaborate on actions and issues of mutual interest, including actions related to climate change. The District respectfully acknowledges the First Nations' long history of land stewardship and knowledge of the land and will look for opportunities to learn from and collaborate with First Nations to help us improve our community's resilience to a changing climate.

Version 14.0

Acknowledgments

Thank you to all those who contributed to the making of this plan, including:

Public and Stakeholders:

- Over 3000 members of the public
- Internal working groups, from nearly all Saanich Departments
- Over 100 external stakeholders, including community associations, educational institutions, senior levels of government, utilities, health institutions, social agencies, building industry, transportation agencies, agricultural sector, environmental agencies, advocacy organizations, and more.

Funders:

- District of Saanich
- Federation of Canadian Municipalities

The preparation of the Climate Plan: 100% Renewable and Resilient Saanich was carried out with the assistance from the Government of Canada and the Federation of Canadian Municipalities. Notwithstanding this support, the views expressed are the views of the authors, and the Federation of Canadian Municipalities and the Government of Canada accept no responsibility for them.

Partners:

- ICLEI Canada's "Together for Climate"
- One Earth/Bioregional's "One Planet Saanich"

Contractors:

- C2MP for Energy and Emissions Modelling
- Stantec for GPC Basic+ Community GHG Inventory
- School of Construction and the Built Environment, BC Institute of Technology/ Cora Hallsworth Consulting for ecoCITY Footprint Report
- MODUS for editorial review, graphic design and document production
- Lesya Fesiak for copyediting

Networks:

- Capital Regional District Inter-Municipal Working Group
- BC Hydro Community Energy Managers Network
- Canadian Urban Sustainability Practitioners
- Urban Sustainability Director's Network

Executive Summary

The District of Saanich is taking action to protect our community, improve our quality of life, and reduce local and global risks associated with a changing climate. Our decisions and actions over the next ten years will determine the kind of future we, and especially our children and grandchildren, will live in.

PLAN VISION

By 2050, Saanich is 100% powered by renewable energy and is a resilient, thriving community, where climate action has improved the quality of life for all people in Saanich.

PLAN GOALS

1. CUT EMISSIONS IN HALF BY 2030 AND TO NET ZERO BY 2050

2. TRANSITION TO 100% RENEWABLE ENERGY BY 2050

3. PREPARE FOR A CHANGING CLIMATE

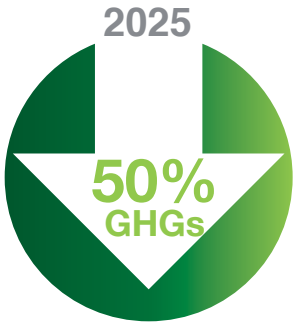
The Plan addresses both mitigation (reducing our greenhouse gas emissions) and adaptation (preparing for a changing climate) in the wider Saanich community as well as the District's operations.

We must keep to the above GHG reduction targets. These targets should be considered the emissions limits we shall not exceed as a community in order to help stabilize global temperatures at 1.5°C above pre-industrial levels.

LEAD BY EXAMPLE

The District's corporate targets from municipal operations are designed to "lead by example" by reaching emissions limits early. This means we will:

Reduce greenhouse gas (GHG) emissions from municipal operations to 50% of 2007 levels by 2025.



Achieve net-zero GHG emissions from municipal operations by 2040.

FIRST PRIORITIES

In order to shift away from business as usual and respond quickly and effectively to the climate emergency, the following initiatives are first priorities:

1. **Increase investment in active transportation** to reduce both territorial and consumption-based emissions, improve air quality, and promote health and equity.
2. **Accelerate personal transportation electrification** by developing an electric mobility strategy for Saanich.
3. **Convert all oil heating systems to renewable heating systems** by 2030 or sooner.
4. **Enhance support for efficiency and renewable energy upgrades in existing buildings** to enable 40% of homes and businesses to switch to efficient and renewable energy systems by 2030.
5. **Double the rate of planting trees to enhance urban forest** for increased carbon sequestration and other ecosystem services.
6. **Improve climate resilience of Saanich's infrastructure,** such as our stormwater system, flood hazard planning, and engineering design specifications.
7. **Catalyze community actions** by developing a supportive network and resources to encourage and sustain personal efforts.

WHAT DOES IT MEAN FOR PEOPLE AND ORGANIZATIONS IN SAANICH?

The Plan lays out a pathway to reducing our emissions and increasing our resilience. It lists strategies and actions to pursue, in areas where the District has either control or influence, to assist with achieving the objectives outlined in each Focus Area. It also notes where people and organizations in Saanich need to take action, and where action is needed from other levels of government and industry in order to succeed.

Our collective success requires action from everybody, including residents, businesses, community organizations, institutions, neighbouring local governments, and senior levels of government.

We need to do this together.

WHAT DOES A 100% RENEWABLE & RESILIENT SAANICH LOOK LIKE?

MOBILITY

Saanich residents live in a complete community where trips can be easily and safely made by all forms of transportation, including walking, cycling, public transit, and zero-emissions shared and personal mobility options.

Goods and services are delivered in an efficient transportation system with vehicles that produce no emissions.

STRATEGIES

M1. Invest in active transportation

M2. Prioritize transit-supportive policies and practices

M3. Accelerate electric and renewable mobility

BUILDINGS & INFRASTRUCTURE

Our homes and buildings are comfortable, healthy, efficient and affordably powered with renewable energy.

Infrastructure and buildings in Saanich are designed or upgraded with projected climate changes in mind to help us be resilient to changing sea-levels, temperatures and precipitation patterns.

STRATEGIES

B1. Require efficient, net-zero carbon new construction

B2. Accelerate efficiency and renewable energy upgrades in existing buildings

B3. Increase energy resilience and renewable energy supply

B4. Transition towards a climate-ready building stock

B5. Increase the resilience of Saanich's infrastructure and assets

B6. Prepare for long-term sea-level rise

FOOD & MATERIALS

People in Saanich have access to affordable, healthy food, and the climate impact of food and materials produced or consumed in Saanich has been dramatically reduced.

STRATEGIES

F1. Reduce the climate impact of food production and consumption

F2. Move towards "lighter living" in Saanich

F3. Improve the resiliency and self-sufficiency of the local food system

Photo Credit: Uptown

ECOSYSTEMS

Local ecosystems continue to thrive and adapt and provide critical services.

STRATEGIES

E1. Enable natural systems to thrive and adapt

E2. Protect and manage natural assets as critical infrastructure

COMMUNITY WELLBEING

People and organizations in Saanich are healthy and resilient in a changing climate and empowered in taking climate action.

Climate action benefits people in Saanich, helping them be more prepared for a changing climate and connected to the natural environment and their community.

STRATEGIES

C1. Ensure that emergency and community health services keep pace with climate change

C2. Empower Saanich residents and businesses to take climate action

LEADERSHIP IN DISTRICT OPERATIONS

The District of Saanich is successful in fully integrating climate change mitigation and adaptation considerations into organizational operations and culture.

Municipal operations are powered with 100% renewable energy (with zero GHG emissions) and resilient in changing climate conditions.

STRATEGIES

L1. Integrate climate action into Saanich processes and decision-making

L2. Become a climate friendly employer

L3. Transition to an efficient, renewably-powered fleet

L4. Transition to efficient, renewably-powered municipal buildings

L5. Reduce waste and GHG emissions from goods and services

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1 A Climate Emergency

1.1 The Time for Action is Now

In October 2018, the Intergovernmental Panel on Climate Change (IPCC) released a special report that outlined the significant and more severe global impacts associated with a 2.0ºC increase in global temperature as compared to a 1.5ºC increase (from pre-industrial levels).

Due to historical greenhouse gas emissions, some climate changes are already locked in. However, we have an opportunity now to avoid greater changes by reducing emissions. The IPCC compared two global warming scenarios—one where warming is limited to 1.5°C and one where it proceeds to 2°C. The IPCC found that there were impacts under both scenarios but that the 2°C impacts were much more severe.

The potentially grave impacts from not reducing emissions enough to stay within the 1.5ºC scenario include considerable changes in regional climate characteristics (e.g., extreme heat, heavy precipitation, drought, and sea-level rise); impacts on biodiversity and ecosystems (including species loss and extinction); and climate related risks to health, livelihoods, food security, water supply, human security and economic growth. There are limits to adaptation and adaptive capacity of human and natural systems even at 1.5ºC of warming. At higher levels of warming, adaptation is expected to be more challenging and limits to adaptive capacity become more pronounced. Failing to stabilize global temperatures at 1.5ºC above pre-industrial levels will significantly compromise progress towards sustainable development, eradication of poverty and reduction of inequalities.

To limit global warming to a 1.5ºC increase from pre-industrial levels (a limit set by the IPCC and outlined in the Paris Agreement), global net-carbon emissions will need to decline by 45% of 2010 levels by 2030, reaching net zero around 2050 and net negative after 2050.

Approximately ten years are left for the world to change its current trajectory of carbon emissions. We all have a role to play, and we must act now.

The IPCC report indicates that rapid and far-reaching transitions in energy, land, transportation, buildings and industrial systems are required at an unprecedented scale.

A wide selection of mitigation options and a significant increase of investments in those options are necessary. Dependence on fossil fuels will ultimately need to be eliminated through significant efficiency improvements and a transition to renewable energy sources. In addition to emissions reductions, carbon dioxide removal (CDR) from the atmosphere will be needed through measures such as reforestation, land restoration, and projects that capture and store carbon.

GLOBAL, REGIONAL AND LOCAL MOVEMENT

Since the release of the IPCC Special Report, a growing number of local governments around the world have declared a climate emergency, recognizing the importance of accelerating actions to curb global warming as well as preparing for climate change. Locally, the Capital Regional District (CRD) responded with a climate emergency declaration on February 13, 2019. Saanich Council made its own climate emergency declaration on March 25, 2019.

Student climate strike in Victoria, BC on September 20, 2019. Photo credit: Alan Thurston.

IMPACTS OF A 2°C RISE

Impacts of a 2°C rise in global temperature as compared with a 1.5°C rise, according to IPCC:

- Higher risks of heat-related illness and mortality
- Higher risks from vector-borne diseases, such as malaria and dengue fever
- Additional 457 million people exposed to climate risks and related poverty
- Habitat loss for twice as many plants and vertebrates and three times as many insects
- Double the rate of ecosystem loss or change from one ecosystem to another
- Double the decline in global fisheries
- Ice-free summers in the Arctic Ocean every 10 years instead of every 100 years

ALIGNING SAANICH'S CLIMATE TARGETS WITH THE 1.5ºC LIMIT

At the start of the Climate Plan update in October 2017, Council endorsed a target of an 80% reduction in corporate and community greenhouse gas (GHG) emissions (from 2007 levels) by 2050. This target was in alignment with the IPCC's recommended emissions reduction to keep global temperature rise (from pre-industrial levels) well below 2ºC.

However, given the climate assessments in the IPCC Special Report, released in October 2018, and in response to the District's climate emergency declaration, Saanich Council adopted new GHG emission reduction targets in August 2019, and during the Climate Plan development process, that align with the reductions needed to limit global warming to 1.5ºC (Figure 1):

1. **By the year 2030, reduce our GHG emissions to 50% of 2007 levels.**
2. **By the year 2050, reach net zero GHG emissions.**

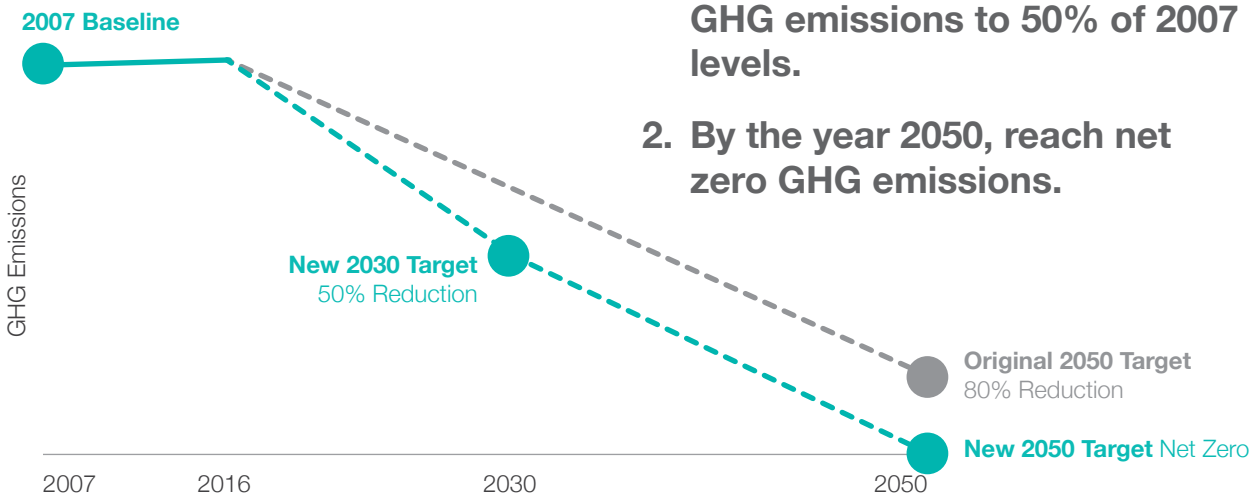

Figure 1. Original and new climate targets

FIRST PRIORITIES

In order to shift away from business as usual and respond quickly and effectively to the climate emergency, the following initiatives are first priorities:

1. **Increase investment in active transportation** to reduce both territorial and consumption-based emissions, improve air quality, and promote health and equity.
2. **Accelerate personal transportation electrification** by developing an electric mobility strategy for Saanich.
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6. **Improve climate resilience of Saanich's infrastructure,** such as our stormwater system, flood hazard planning, and engineering design specifications.
7. **Catalyze community actions** by developing a supportive network and resources to encourage and sustain personal efforts.

UNDERSTANDING CLIMATE CHANGE

Between the sun's energy and the earth's atmosphere, our planet naturally maintains the "greenhouse" that supports life. Burning fossil fuels, such as gasoline, diesel, heating oil and natural gas, produces carbon dioxide (CO_2) along with other greenhouse gases (GHGs), such as methane from landfills and other sources, trapping more of the sun's energy and causing an overall heating of the planet (Figure 2).

This rise in GHGs from human activity has resulted in an increase in global mean temperature by about 0.8°C since the end of the 19th century. At least another 2°C of warming is expected by the end of this century, unless we act now. Two or three degrees may not sound like much, but scientists warn that this could result in serious and perhaps catastrophic impacts, the beginnings of which we are seeing in increased storm intensity, forest fire frequency, droughts, melting glaciers, and other changes. As a comparison, globally, today's temperatures are only 4–7°C warmer than average temperatures during the ice ages, but the rates of warming over the coming century are predicted to be 20 times faster.

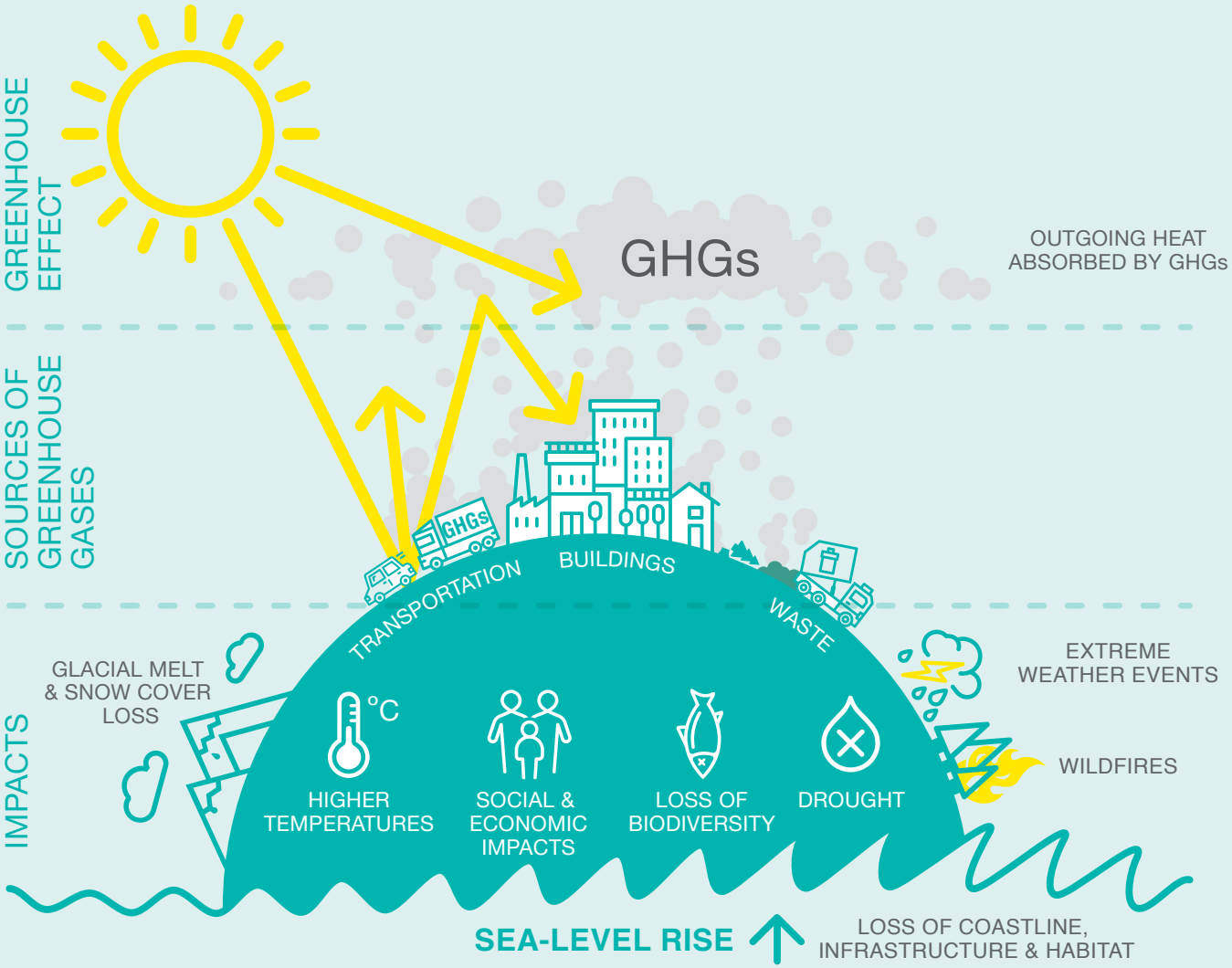


Figure 2. Illustration of climate change impacts (from the City of Victoria 2018 Climate Leadership Plan, p. 11). Used with permission from the City of Victoria.

1.2 Climate Change Risks in Saanich

In our region, climate change is expected to result in hotter and drier summers, sea-level rise, and increased numbers and intensity of winter storms.

Figure 3 shows selected climate and sea-level rise projections for the capital region. (See Climate Projections for the Capital Region, 2017 and Coastal Sea-level Rise Risk Assessment Report, 2015, available at www.crd.bc.ca/data.)

To better understand how climate change may affect our community, we undertook a risk assessment process with staff and stakeholders to examine and evaluate (in sequence):

1. Projected climate changes for our region
2. Impacts of climate change on our community
3. Our areas of vulnerability to these impacts
4. Risk levels (high, medium and low) by rating the likelihood and consequences of the impacts

The results of the risk assessment can be found in the Resilient Saanich Risk Assessment Report at www.Saanich.ca/climateplan and are summarized on page 6.

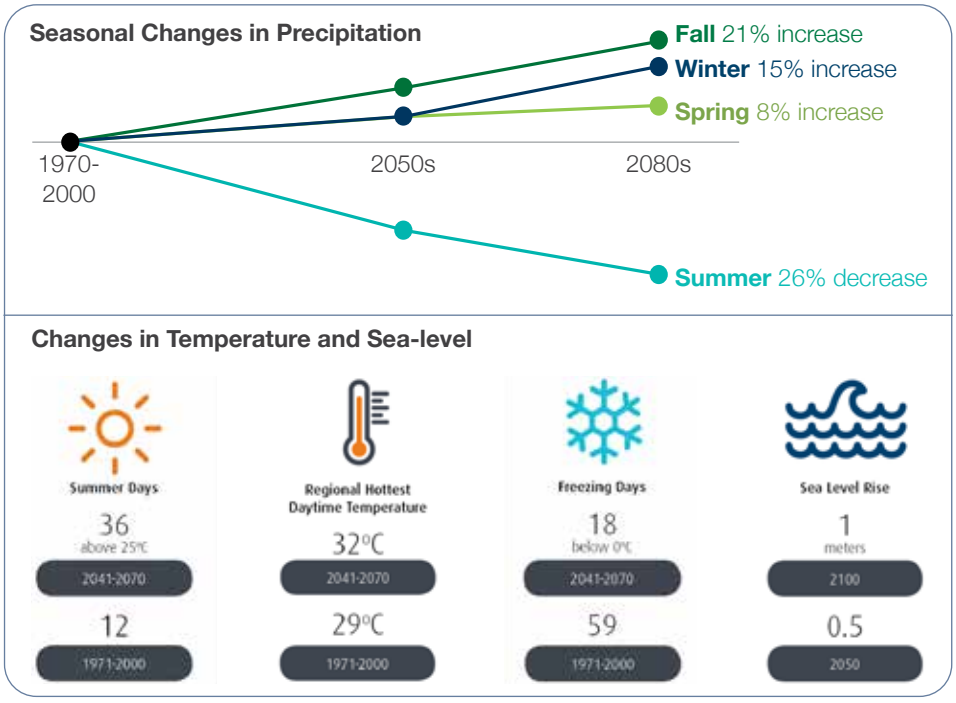


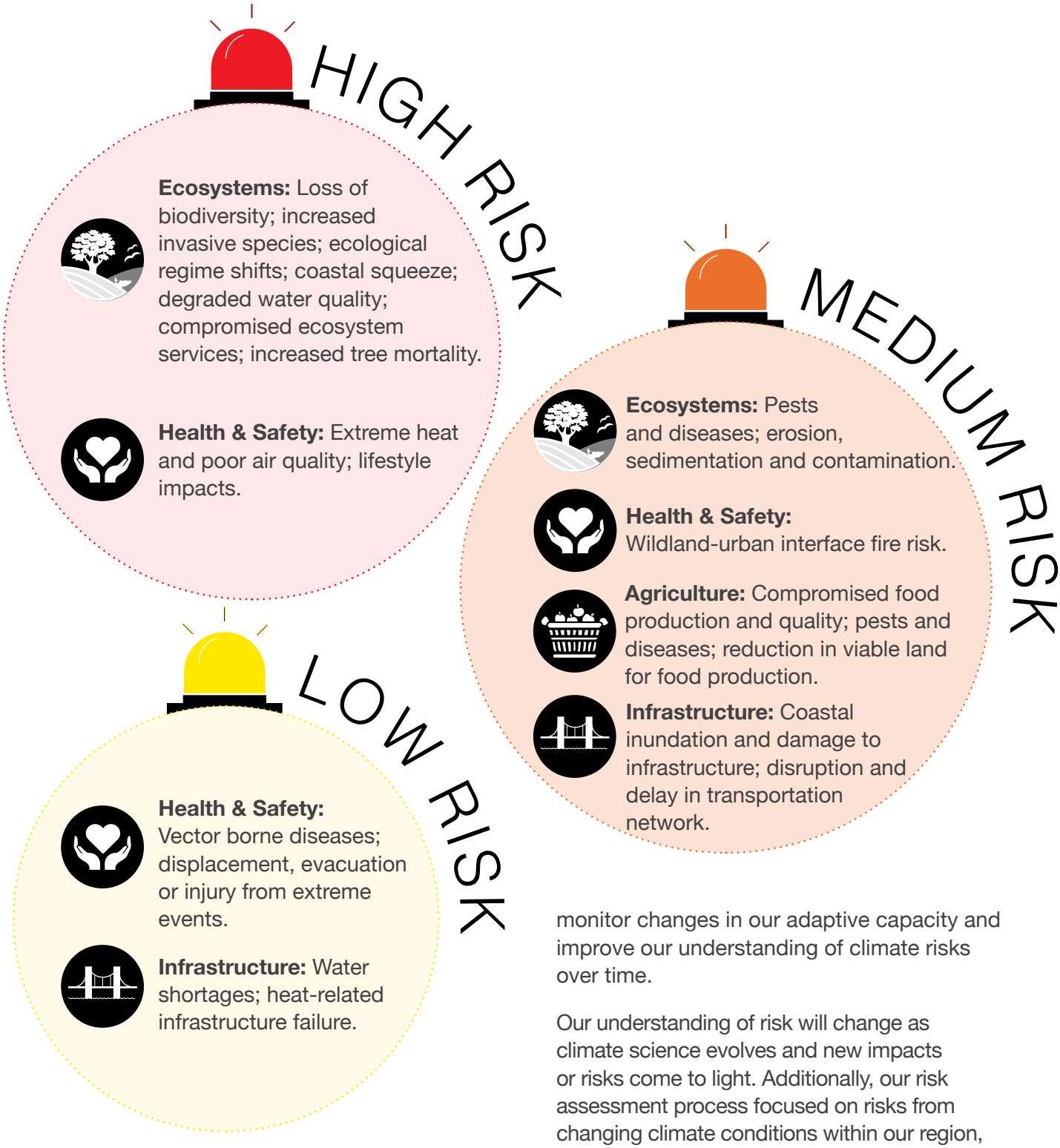
Figure 3. Selected climate and sea-level projections for the capital region

District of Saanich

Top vulnerabilities to climate change for our community include:

- Loss of biodiversity and ecosystem stress
- Health impacts from severe heat and wildfire smoke
- Inundation of buildings and infrastructure from sea-level rise
- Compromised food production
- Wildland-urban interface fire risk

Photo credit: Kate Skegg



No impacts were considered to be "very high" or "extreme" in terms of risk. This is due to the resources, systems and capacities we already have in place to deal with community challenges, as well as our enviable location in a mild climate with abundant and well-managed natural resources such as water.

Climate risk assessments are an iterative process that must be repeated regularly as we monitor changes in our adaptive capacity and improve our understanding of climate risks over time.

Our understanding of risk will change as climate science evolves and new impacts or risks come to light. Additionally, our risk assessment process focused on risks from changing climate conditions within our region, but risks from changing climate conditions elsewhere (including displacement of people and decreases in food production in other parts of the world) will require further consideration.

Not everyone will be affected by climate change in the same way or to the same degree. Consideration must be given to those who are most vulnerable, and an equity lens will be developed and applied to resilience planning.

ADVANCES IN ADAPTATION PLANNING

Understanding of climate risks and our capacities to act have advanced in the following ways since our 2011 Climate Change Adaptation Plan was adopted:

- **Climate science,** including regional climate change projections, has become increasingly detailed and sophisticated, with new tools available to explore and embed these projections in planning and policy work.
- **Direction from higher levels of government** has begun to shape local government policy, such as BC's Flood Hazard Land Use Management Guidelines, which directs municipalities to plan for 1m of sea-level rise by 2100.
- **New and unexpected impacts** have emerged, such as wildfire-related smoke events, which were not identified in the 2011 Adaptation Plan and have implications for community health and safety.

These advances, combined with the many adaptation actions that have been initiated or completed to date, have been instrumental in building adaptive capacity in the Saanich community and represent a strong foundation to support our future of climate resilience.

1.3 A Call to Action

Reducing our greenhouse gas emissions and increasing our resilience to a changing climate will require key changes in our transportation system, our buildings, our land base, how we produce and consume food and materials, and how we prepare for and take care of each other during severe weather events.

WE ALL HAVE A ROLE TO PLAY

Municipal actions are necessary but insufficient on their own to meet the climate challenge. Achieving our climate goals requires action from everybody, including residents, businesses, local farmers and food providers, community organizations, industry stakeholders, utility service providers, institutions, neighbouring municipalities, and regional, provincial and federal levels of government.

This Plan includes numerous actions that the District of Saanich can take to ease our transition to becoming a renewable and resilient community and to help ensure that climate action does not disproportionately impact those who are already vulnerable.

Climate actions can have many benefits, including:

- Improved environment (better air quality, less noise, more greenspace)
- Improved health (exercise from active transportation choices, better indoor air quality in our buildings, high-quality locally-grown food)
- Cost savings (energy costs, transportation costs)
- Strengthened community connections (through neighbourhood actions that build resilience and reduce GHG emissions)

THE DISTRICT OF SAANICH'S ROLE

This plan contains strategies and actions for the District of Saanich to pursue in areas where the District has either direct control, indirect control, direct influence or indirect influence (illustrated in Table 1). The relevant roles of the District of Saanich and other key players are explained in each Focus Area (Section 4).

CONTROL	**Direct:** e.g., leading by example through our municipal infrastructure and operations, such as how we heat our buildings or our fleet vehicle choices
	Indirect: e.g., through land use and transportation planning and policy
INFLUENCE	**Direct:** e.g., policies, incentives, and partnerships with stakeholders and other levels of government
	Indirect: e.g., through advocacy, information sharing, and municipal education programs

Table 1. Areas of control and influence by Saanich

A DECADE OF CLIMATE ACHIEVEMENT TO BUILD UPON

MOBILITY

35 km of new bike infrastructure

33 km of new sidewalks

120 new transit shelters

11 electric vehicles in the Saanich fleet

12 new public electric vehicle charging stations

BUILDINGS & INFRASTRUCTURE

15% reduction in GHG emissions from Saanich facilities

51% reduction in overall electricity use through efficient street lights

4,000 Saanich homes have used energy efficiency and renewable energy rebates

FOOD & MATERIALS

3,650 tonnes of organics diverted every year through the Greener Garbage program

ECOSYSTEMS

105,000+ Pulling Together volunteer hours

1 baseline tree canopy cover inventory established

COMMUNITY WELLBEING

1,100 grade 4 students reached every year for awareness on emergency preparedness

OVERALL

83% of action & adaptation plans have been completed or are in progress

We have a history of taking climate change seriously. This is only a snapshot of some major achievements over the last decade!

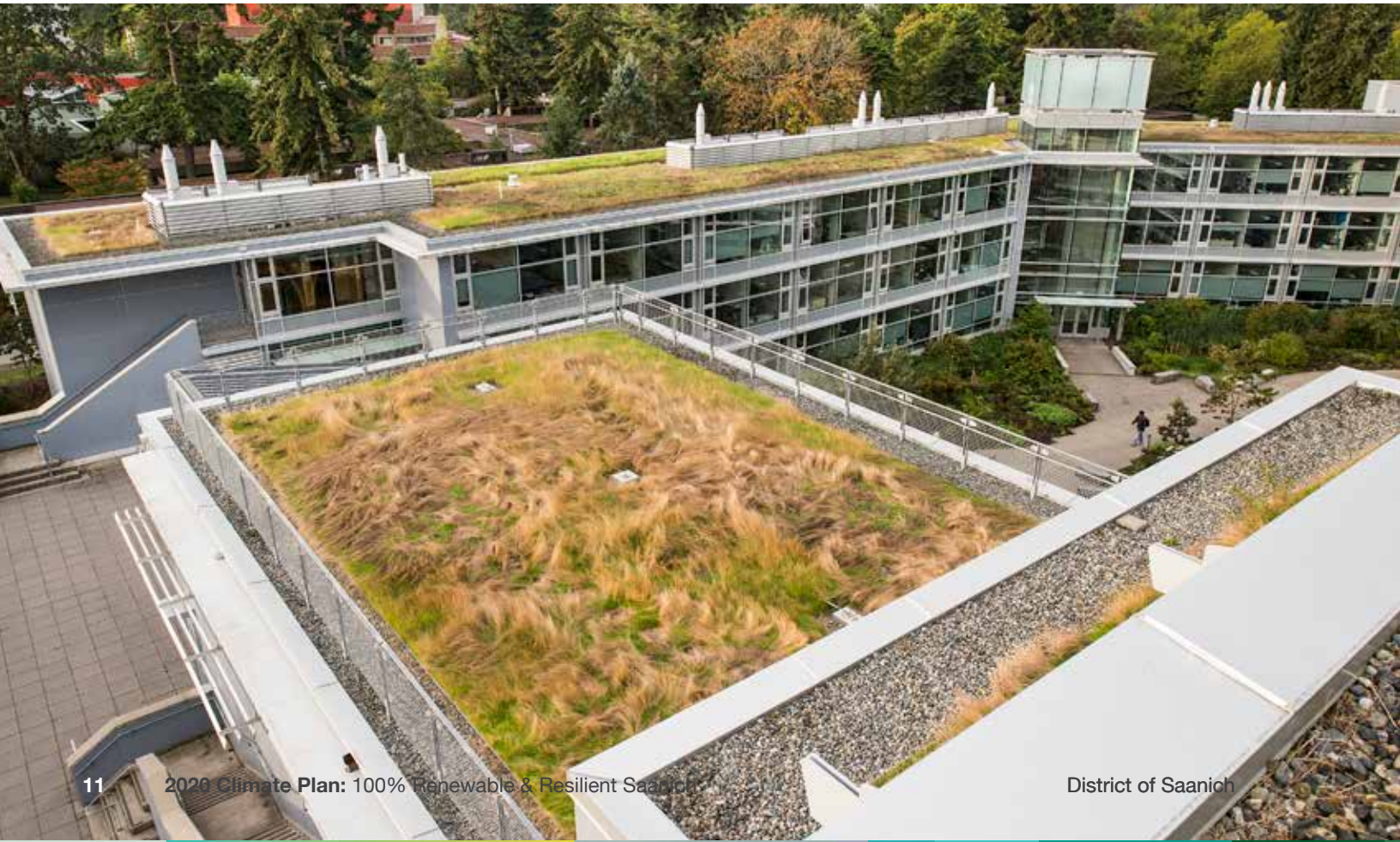
2 Climate Plan Purpose & Process

2.1 Plan for a Renewable and Resilient Saanich

Together with communities around the world, the District of Saanich is taking action to protect our community, improve our quality of life, and reduce risks associated with a changing climate.

The Saanich Climate Plan addresses both mitigation (reducing our greenhouse gas emissions) and adaptation (preparing for a changing climate) in the District's operations and the wider Saanich community.

Photo: Green roof at David Turpin building at the University of Victoria



PLAN VISION

By 2050, Saanich is 100% powered by renewable energy and is a resilient, thriving community, where climate action has improved the quality of life for all people in Saanich.

PLAN GOALS

The Plan outlines strategies and actions to help Saanich achieve the following goals:

1. CUT EMISSIONS IN HALF BY 2030 AND TO NET ZERO BY 2050:

Saanich has committed to reducing our community's GHG emissions from our 2007 territorial baseline by 50% by 2030 and by 100% by 2050. This plan includes strategies and actions that will achieve our 2030 target and get us 91% of the way to our 2050 target; the remaining 9% will come from emerging new technologies and approaches for emissions reduction as well as carbon sequestration in Saanich's greenspace.

2. TRANSITION TO 100% RENEWABLE ENERGY BY 2050:

The majority of GHG emissions in Saanich are caused by burning fossil fuels to produce energy. In order to reduce GHG emissions we must transition away from fossil fuels to renewable energy. Saanich is well-positioned to transition to renewable energy. Already, 40% of our community energy use is from renewable sources. Market-ready products to heat our homes and power our vehicles with renewable energy are available. Renewable, low-carbon energy solutions are market-ready. Transitioning to renewable energy can help us protect our natural environment, improve local air quality and community health, and support a diverse, low-carbon economy.

3. PREPARE FOR A CHANGING CLIMATE:

Some changes to our climate are already locked in, with inevitable impacts on our community. The Plan will build our community's resilience to the challenges posed by climate change. These include sea-level rise, increasing temperatures, changes in rainfall patterns, increased storm intensity, and the ensuing impacts on our health, infrastructure, economy and local ecosystems.

GUIDING PRINCIPLES

1. BE BOLD

Be ambitious and courageous, and lead by example.

2. BE EVIDENCE-BASED

Use available science and policy research to make proactive and informed decisions about effective actions while being adaptable and responsive to future developments. In the case of uncertainty, the precautionary principle will guide decision-making.

3. SHARE THE BENEFITS

Ensure that benefits and burdens of climate action are shared equitably.

4. IMPROVE WELLBEING

Design climate actions to achieve multiple benefits, including improved resident health, emergency preparedness, and economic and employment opportunities.

5. BE COLLABORATIVE

Engage, collaborate and partner with departments across the District of Saanich and with residents, businesses, institutions and senior levels of government, as it will take coordinated action at all levels to meet our climate targets.

6. PRIORITIZE EFFICIENCY

Always consider reducing consumption (energy and materials) first, followed by shifting to renewable, low-carbon energy sources and materials.

7. VALUE NATURE

Recognize natural areas and greenspaces as assets that improve the region's resilience to climate change.

8. WORK TOWARDS RECONCILIATION

Support Saanich's work towards reconciliation with local First Nations governments through collaborations on climate action.

9. ACT GLOBALLY

Consider global impacts when making decisions to ensure our actions are beneficial outside our boundaries.

10. CONSIDER FUTURE GENERATIONS

Include quality of life considerations for future generations.

These principles were developed by Saanich staff based on Phase 1 engagement feedback, District of Saanich strategic priorities, and lessons learned through climate action in Saanich and around the world. The principles informed the development of the actions, and they will also guide Plan implementation.

WHAT DO WE MEAN BY CLIMATE EQUITY?

Climate equity means working towards the just distribution of the benefits of climate actions (mitigation and adaptation) and alleviating unequal burdens created or worsened by climate change.

The Urban Sustainability Directors Network defines four aspects of equity:

Procedural (Inclusion)

Inclusive, accessible, authentic engagement and representation in the process to develop or implement programs or policies.

Distributional (Access)

Programs and policies result in fair distributions of benefits and burdens across all segments of a community, prioritizing those with highest need.

Structural

Decision-makers institutionalize accountability; decisions are made with a recognition of the historical, cultural, and institutional dynamics and structures that have routinely advantaged privileged groups in society and resulted in chronic, cumulative disadvantage for subordinated groups.

Transgenerational

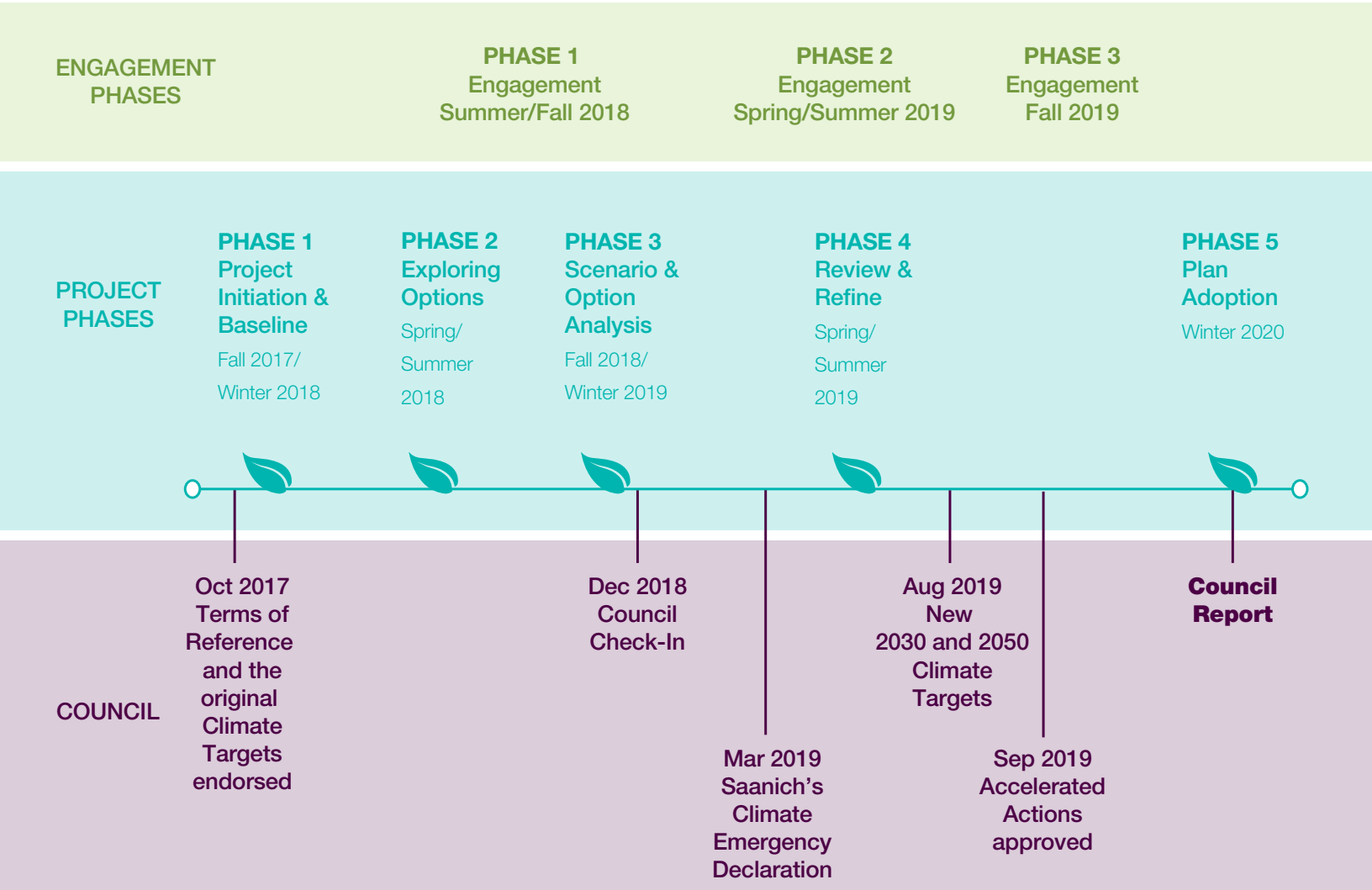
Decisions consider generational impacts and do not result in unfair burdens on future generations.

2.2 Plan Process

The process of Plan development began with the approval of targets and terms of reference by Saanich Council in late 2017. The Plan development process included:

- Engagement and input from Saanich staff, the public and stakeholders
- Updated community GHG inventories from both a territorial and consumption-based approach
- Assessments of climate change risks and vulnerabilities based on local climate projections
- Modelling of strategies to reduce Saanich's GHG emissions
- Lessons taken from nearly a decade of climate action in Saanich
- Best practices and "next practices" from around the world

CLIMATE PLAN PROCESS AND TIMELINE



Potential climate actions were identified throughout this process, and then evaluated and prioritized according to the following criteria:

- GHG emission reduction potential (mitigation) or risk priority score (adaptation)
- Benefits and tradeoffs (e.g., health, economic development, etc.)
- Public acceptability (based on engagement feedback)
- Timeliness (including funding availability, partnership opportunities, or urgency/ window of opportunity)

Some identified actions are ready to implement, while others require further exploration (e.g., developing partnerships with other organizations or evaluating a series of policy tools to find the best option).

ONE PLANET SAANICH: REDUCING OUR COMMUNITY'S ECO-FOOTPRINT

- Health and happiness
- Equity and local economy
- Culture and community
- Land and nature
- Sustainable water
- Local and sustainable food
- Travel and transport
- Materials and products
- Zero waste
- Zero carbon energy

Throughout the development of the Saanich Climate Plan, the District of Saanich and 12 local organizations participated in the One Planet Saanich initiative, which is part of an international One Planet Cities Project. To learn more, visit www.oneplanetsaanich.org.

One Planet Living is the vision of a world in which people enjoy happy, healthy lives within their fair share of the earth's resources, leaving space for wildlife and wilderness.

The One Planet Living Principles (pictured left) were used to inform actions in the Climate Plan. They will be used in Plan implementation to maximize benefits and prevent negative impacts on equity, ecosystems, and our health and wellbeing.

The One Planet Cities project is funded by the KR Foundation and coordinated by Bioregional, a nonprofit organisation that champions a better, more sustainable way to live. To learn more, visit www.oneplanet.com.

PUBLIC ENGAGEMENT SUMMARY

Throughout engagement activities, community members clearly expressed their belief that there is an urgent need for climate action, as well as their support for the proposed actions in the Plan.

For detailed results, please see the Climate Plan Engagement Reports for Phase 1, 2 and 3 at www.saanich.ca/climateplan.

Phase 1: Broad input on key themes, issues & opportunities

Summer-Fall 2018

KEY FINDINGS

Broad consensus among most residents regarding strong support for climate action, a sense of urgency, and a desire for regulation and incentives as top municipal approaches.

Top three topic areas are smart land use planning, transit improvement and waste reduction.

PUBLIC INVOLVEMENT

- 28 key events
- Over 1,700 participants

METHODS

Saanich Talks event, website, survey, festivals and public events, recreation centre and facility displays, newsletters, media and advertising, offering surveys on the bus to transit riders, one-on-one meetings and presentations, email and phone calls, stake-holder workshops, public open houses and workshops, working group meetings.

Phase 2: Feedback for draft strategies & actions

Spring-Summer 2019

KEY FINDINGS

High level of agreement and support for proposed strategies and actions (79% of responses).

Most popular actions related to active transportation, vehicle fleet, electric vehicle charging access, local food production, transit improvement, bike parking, agriculture, waste and high-performance buildings

PUBLIC INVOLVEMENT

- 22 key events
- Over 1,000 participants

METHODS

Internal working group meetings, stakeholder workshops, survey, open houses and presentations, festivals, community events, newsletter, email and phone calls, one-on-one meetings, website and social media interactions.

Phase 3: Draft Climate Plan review

Fall 2019

KEY FINDINGS

Strong support for climate action and the draft plan.

Sense of urgency for action.

Desire to see costs, timelines and anticipated impacts of each action and how they relate to the overall goals.

PUBLIC INVOLVEMENT

- 5 key events
- Over 200 participants

METHODS

Internal working group meeting, survey, presentations, pop up events, recreation centre and facility displays, website, newsletters, social media interactions, emails and phone calls.

3 Calculating Our Climate Impact & Reductions

3.1 Current Greenhouse Gas Emissions in Saanich

We measure our climate impact by calculating the greenhouse gases (GHG) we emit as a community. Results of our Territorial and Consumption-Based GHG Inventories are provided below (Figure 4).

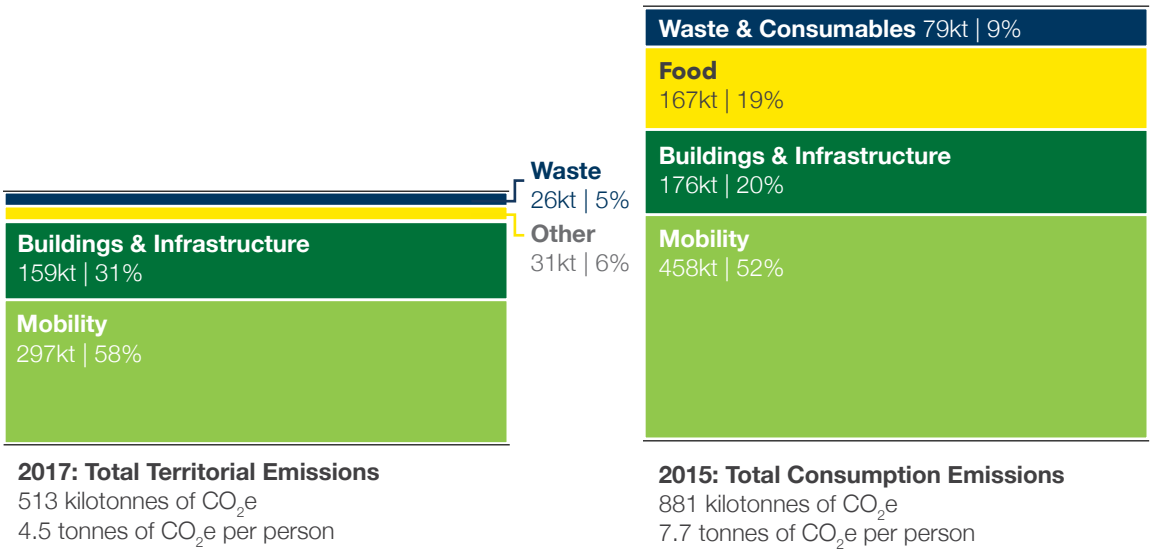


Figure 4. Saanich community GHG emissions inventories (Territorial vs. Consumption-Based)

TERRITORIAL GHG EMISSIONS INVENTORY

Our Territorial GHG Emissions Inventory addresses greenhouse gasses produced within our municipality and follows the Global Protocol for Community-Scale Greenhouse Gas Emissions Inventories accounting and reporting standard for cities (specifically the Basic+ scope). It includes emissions from stationary energy (i.e., from buildings), transportation (based on Saanich registered vehicles), waste, industrial processes and product use (IPPU), as well as agriculture, forestry, and other land use within our borders (AFOLU). For example, emissions produced by cows when they are digesting food are counted in Saanich's territorial emissions only if or when those cows are within Saanich's borders.

The majority of our territorial GHG emissions come from fossil fuels used for transportation (e.g., gasoline, diesel), followed by fossil fuels used in buildings (e.g., natural gas, oil), and lastly methane from waste (methane is another GHG that has a Global Warming Potential 25 times greater than CO_2). Our community GHG limits refer to this type of inventory, as it is a robust international methodology and more closely linked to municipal influence and control than consumption-based emissions.

CONSUMPTION-BASED GHG EMISSIONS INVENTORY

The Consumption-Based GHG Emissions Inventory measures the GHG emissions from all of the goods and services that the Saanich community consumes, regardless of where those goods and services are produced around the world. Emissions from food and goods produced outside of Saanich are not counted in our Territorial GHG Emissions Inventory but show up prominently in the Consumption-Based GHG Emissions inventory. Our community emissions are, therefore, considerably higher when we use this type of inventory. For example, building materials such as steel doors or vinyl windows made elsewhere and used here don't contribute to our territorial emissions but do contribute to our consumption based emissions. The methodology for this inventory is less developed than the territorial method, and there are limitations in the quality of local data available. However, a consumption inventory provides an important lens with which to view opportunities to reduce global emissions; therefore, actions geared to reduce consumption-based emissions are included in the Plan.

District of Saanich

INVENTORY COMPARISON: TERRITORIAL VS. CONSUMPTION-BASED

Fossil fuels used for transportation and buildings are the top two sources of GHGs in our community in both inventories. The biggest difference between them is the much higher share of emissions from food, consumables and waste in the Consumption-Based GHG Emissions Inventory.

The Territorial GHG Emissions Inventory and Consumption-Based GHG Emissions Inventory are summarized in Figure 4 (p. 19). The full reports can be found at www.saanich.ca/climateplan.

OUR COMMUNITY GHG EMISSIONS HAVEN'T GONE DOWN FROM 2007 LEVELS

Despite Saanich's climate commitment and leadership over the past decade, our community emissions have risen by 3.5% overall (and 0.7% per resident) from our 2007 baseline.

WHY HAVEN'T OUR EMISSIONS GONE DOWN FROM 2007 LEVELS?

Transportation emissions increased significantly between 2007 and 2016, likely due to increases in vehicle size and non-renewable fuel use. However, the recent increase in active transportation use and improved vehicle emissions standards likely contributed to the first decrease in transportation emissions since 2007, shown in the 2017 inventory.

Building emissions stayed relatively constant despite improved energy efficiency standards for new construction and incentive programs to improve the efficiency of existing buildings. Electricity and oil consumption in our community has slightly decreased, resulting in lowered GHG emissions from these two sources. Natural gas consumption has slightly increased, despite a drop in natural gas consumption per home, resulting in a rise in GHG emissions from this source.

Waste emissions have decreased since 2007 with the introduction of the Greener Garbage Program that collects kitchen scraps and yard waste for composting.

NEW DECADE, NEW PLAN

Responding effectively to the urgent challenge of climate change won't be easy. However, we are well positioned for this big challenge. Since 2010, we have gained new insights, strategies, resources and support to help us effectively tackle climate change, including:

- **The heightened awareness that we need to do it together**—municipal action by itself is necessary but not sufficient
- **Availability of market-ready technology** (e.g., more electric cars and e-bikes, more local businesses installing renewable energy heating systems and on-site solar energy)
- **Strong support** for effective climate action (from residents, organizations, and local and regional and leaders)
- **Renewed commitments and supporting actions** from senior levels of government and other institutions (e.g., BC Transit commitment to 100% electric buses, the Province's CleanBC Plan and BC Energy Step Code, the federal Pan Canadian Framework on Climate Change)
- **Increased funding** for climate action from senior levels of government
- **Greater understanding** of the effectiveness of incentives and education programs, the barriers faced by people in Saanich, and the scope and scale of programs needed to reach climate targets
- **Commitment to stronger advocacy to senior levels of government** for effective regulatory action (e.g., building code) and in areas outside of municipal jurisdiction
- **Stronger accountability measures** (e.g., annual reporting on plan implementation)

3.2 Modelled Pathway for GHG Emission Reductions

A municipal energy and greenhouse gas (GHG) modelling tool was used to understand and evaluate the types and magnitude of changes in our community that would be required to meet our territorial GHG emission reduction targets.

The model (Figure 5, p. 24) shows that reaching our targets will require multiple strategies and transformative change, primarily in areas of mobility and buildings.

The Business As Usual (BAU) projection indicates that only 9% reduction in GHG emissions from 2007 levels would be achieved by 2050 if we adhere to existing and confirmed policies and regulations, including Saanich's Official Community Plan and the federal vehicle efficiency regulations.

However, our target for 2050 is net-zero emissions. In response to these required emissions reductions, the Plan identifies strategies and actions (Section 4) within the District of Saanich's control and influence to help us meet our 2030 and 2050 climate goals.

HOW DOES LAND USE IMPACT GHG EMISSIONS?

The land use policies outlined in Saanich's Official Community Plan and Local Area Plans are necessary to achieving our GHG goals. Committing to compact, complete development will make it easier and more affordable to reach these goals.

It is easier to build low-carbon buildings at higher densities due to reduced energy losses from shared walls and other economies of scale. It is easier to have a low-carbon transportation system when individuals are able to travel shorter distances to meet their needs. It is also more affordable for the District and other levels of government in the long run to provide infrastructure for low-carbon transit, pedestrian and cycling infrastructure if Saanich continues to develop more compactly with easy access to services.

Compact, complete community development yields significant co-benefits, such as improved social networks and community health outcomes, and protection and enhancements of our ecosystems. Our forests, agricultural and rural lands play an important role in carbon sequestration, and through the application of a strong Urban Containment Boundary, Saanich has been able to concentrate new development and minimize impacts on the integrity of our natural environment. This approach to managing growth in a way that limits car-dependent land uses and prioritizes the protection of ecologically productive areas will need to continue if we are to meet our climate goals.

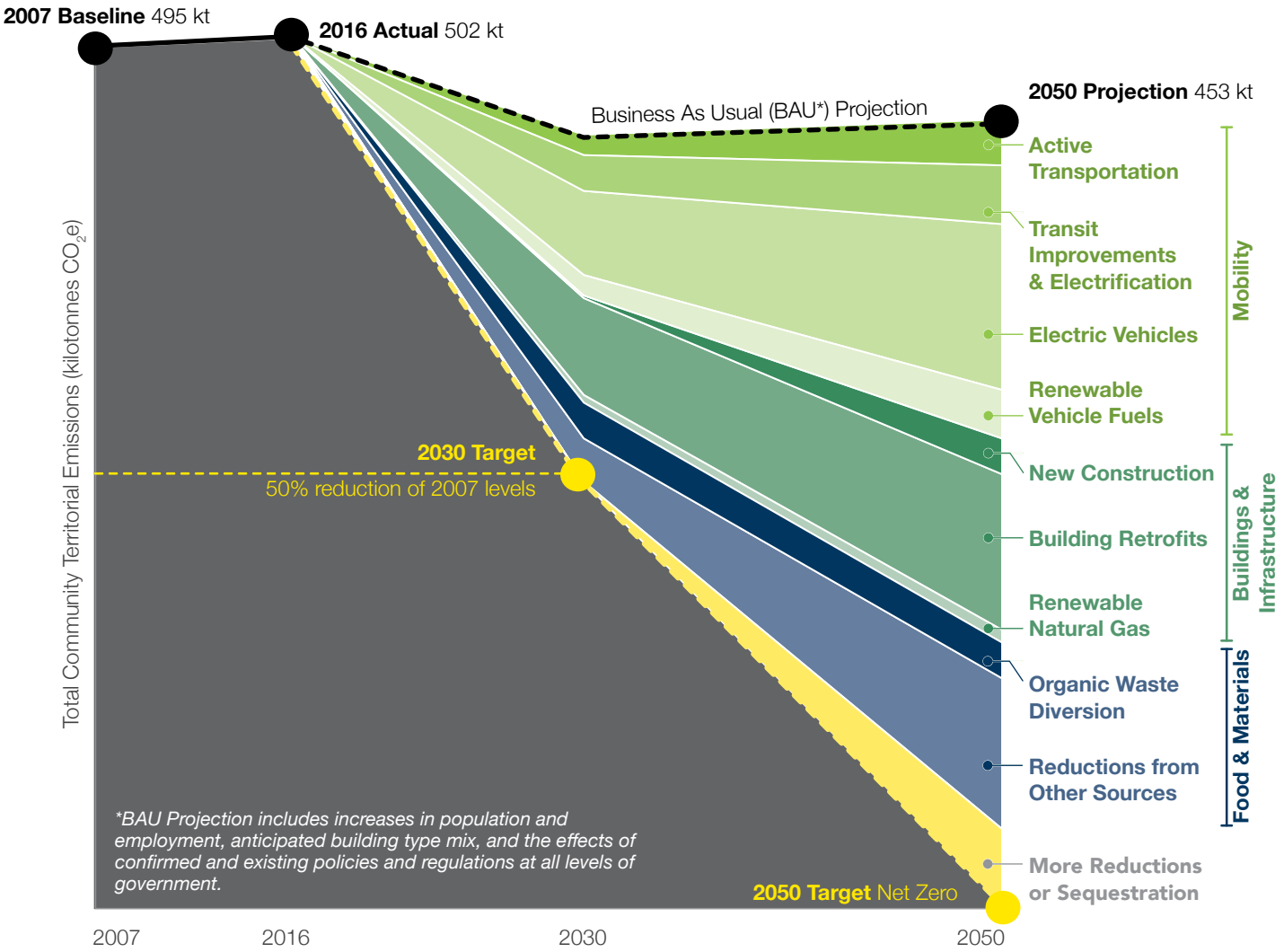


Figure 5. Modelled pathway for Territorial GHG emission reductions in Saanich

Active Transportation (5.1%):
- 22% of trips by 2030, 30% by 2050

Transit Improvements & Electrification (7%):
- 14% of trips by 2030, 20% by 2050
- 100% electric buses by 2030

Electric Vehicles (19.3%):
- 36% of personal vehicles by 2030
- 90% of personal vehicles and 50% of commercial vehicles by 2050

Renewable Vehicle Fuels (5.6%):
- 10% of remaining transport fuel is biofuel by 2030, 100% by 2050

New Construction (4%):
- Highest steps of Step Code by 2025
- 100% net-zero carbon by 2032

Building Retrofits (18.3%):
- 100% oil heating replaced by heat pumps by 2030
- 40% of natural gas space and hot water systems replaced with renewable sources by 2030, 100% by 2050
- 40% of all building envelopes upgraded by 2030, 80% by 2050

Renewable Natural Gas (1.3%):
- Renewable natural gas use in buildings

Organic Waste Diversion (4.3%):
- 100% diversion of compostable organic waste

Reductions from Other Sources (17.5%):**
- 33% reduction by 2030 and 100% by 2050 in all other sources of emissions

***Other sources include industrial processes, products (e.g., refrigerants, foams, aerosols), land use change, livestock, manure, fertilizer and agricultural soil management.*

More Reductions or Sequestration (8.8%)
- To be developed

HOW WE WILL REDUCE EMISSIONS?

ENERGY CONSERVATION

Energy conservation is key to meeting Saanich's emission reduction targets. Strategies for reducing energy use include active transportation (e.g., travelling by foot, bike or transit), building envelope improvements (e.g., increasing insulation in walls and roofs, improving windows and draft-proofing), strategic tree planting for cooling and windbreaks, the use of energy efficient equipment, and changes in consumption behaviour to avoid waste.

TRANSITIONING TO RENEWABLE ENERGY

To meet our emission reduction targets, Saanich will also need to transition from fossil fuels to 100% renewable energy by 2050. Currently, the most abundant source of renewable energy available to us is hydroelectricity from BC Hydro. The Province's CleanBC plan includes electrification as a key GHG reduction strategy, and states there is sufficient capacity for increased electricity use with existing and planned projects to 2030.

FortisBC has committed to making 15% of its overall natural gas supply renewable by 2030. Instead of purchasing conventional natural gas, some FortisBC customers can choose, at an additional cost, to purchase Renewable Natural Gas (RNG), which is produced from decomposing organic waste and has significantly lower emissions per gigajoule (GJ) of energy than conventional natural gas. Homes subscribing to the RNG program don't necessarily receive RNG, but they do support the supply of RNG to the FortisBC grid. The projected availability of RNG is not sufficient to replace the current consumption of conventional natural gas in Saanich. If the projected supply of RNG in the province is divided equally per person, approximately 6% of our community's current conventional natural gas consumption could be replaced with RNG by 2030.

Other renewable energy options that we modelled include biofuels for vehicles and solar photovoltaics. Solar photovoltaics, when replacing hydroelectricity, do not significantly reduce GHG emissions but can contribute to resilience.

Saanich has a target of 100% renewable energy use by 2050.

The majority of Saanich's renewable energy in 2050 is modelled to come from renewable electricity. The remainder of energy required is modelled to come from other sources of renewable energy, such as Renewable Natural Gas from FortisBC, solar energy and biomass (Figure 6).

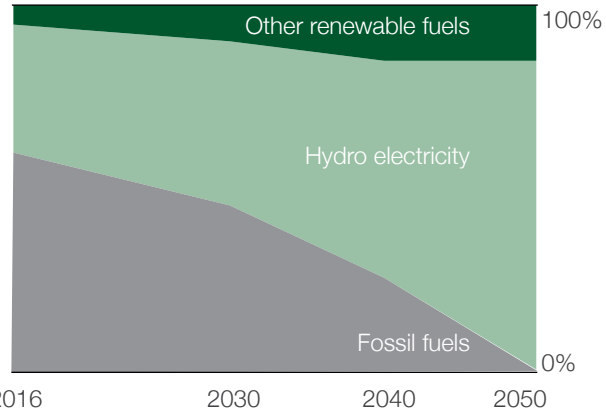


Figure 6. Our path to renewable energy: 2016-2050

CARBON SEQUESTRATION

Carbon sequestration is the process of removing carbon from the atmosphere. It can happen through natural processes (e.g., trees) or technological processes (e.g., capturing and storing gasses from a smokestack). The Saanich Climate Plan aims to enhance natural processes (such as increasing tree coverage) to improve Saanich's long-term carbon sequestration. The science behind carbon sequestration, especially as it relates to natural processes, is still developing. Since it takes time for plants to grow and soil to build, these approaches require a lengthy time horizon to reach their potential.

OFFSETS

A path to carbon neutrality can include offsets. Offsets involve measuring GHG emissions in our community and paying an offset organization to implement carbon-reducing projects that would not be implemented without our payment or funding. Our Climate Plan does not include the purchase of offsets as a strategy. Offsets would come with significant costs, and as they would be generated outside of Saanich's municipal boundary, they would have limited direct benefits to local residents and businesses or the local environment.

Solar photovoltaics on the Saanich Commonwealth Place

4 Strategies & Actions

The Climate Plan strategies and actions are organized within the following six Focus Areas:

MOBILITY

P. 29

STRATEGIES

M1. Invest in active transportation

M2. Prioritize transit-supportive policies and practices

M3. Accelerate electric and renewable mobility

BUILDINGS & INFRASTRUCTURE

P. 41

STRATEGIES

B1. Require efficient, net-zero carbon new construction

B2. Accelerate efficiency and renewable energy upgrades in existing buildings

B3. Increase energy resilience and renewable energy supply

B4. Transition towards a climate-ready building stock

B5. Increase the resilience of Saanich's infrastructure and assets

B6. Prepare for long-term sea-level rise

FOOD & MATERIALS

P. 59

STRATEGIES

F1. Reduce the climate impact of food production and consumption

F2. Move towards "lighter living" in Saanich

F3. Improve the resiliency and self-sufficiency of the local food system

Photo credit (pp. 27-28): Uptown

ECOSYSTEMS

P. 71

STRATEGIES

E1. Enable natural systems to thrive and adapt

E2. Protect and manage natural assets as critical infrastructure

COMMUNITY WELLBEING

P. 81

STRATEGIES

C1. Ensure that emergency and community health services keep pace with climate change

C2. Empower Saanich residents and businesses to take climate action

LEADERSHIP IN DISTRICT OPERATIONS

P. 91

STRATEGIES

L1. Integrate climate action into Saanich processes and decision-making

L2. Become a climate friendly employer

L3. Transition to an efficient, renewably-powered fleet

L4. Transition to efficient, renewably-powered municipal buildings

L5. Reduce waste and GHG emissions from goods and services

4.1 Mobility

VISION

By 2050, Saanich residents live in a complete community where trips can be easily and safely made by all forms of transportation, including walking, cycling, public transit and zero-emission shared and personal mobility options. Goods and services are delivered in an efficient transportation system with vehicles that produce no emissions.

OBJECTIVES & STRATEGIES

	OBJECTIVES	*STRATEGIES*
	22% of all trips are taken by walking and cycling by 2030, 30% by 2050.	**M1. Invest in active transportation**
	14% of all trips are taken by transit by 2030, 20% by 2050.	**M2. Prioritize transit-supportive policies and practices**
	36% of all personal vehicles are electrified by 2030. 100% of personal and commercial vehicles are renewably powered by 2050.	**M3. Accelerate electric and renewable mobility**

To ensure we are on track by 2030:

Choose more trips by walking, cycling or public transit.

Replace fossil fuel vehicles with renewable energy vehicles.

The District of Saanich is doing its part in helping the community make these shifts. Read on!

Where We Are Today

Transportation is the largest source of greenhouse gas (GHG) emissions in Saanich (Figure 7), responsible for more than half of our total GHG emissions (both by territorial and consumption-based measurements).

WHERE DO OUR TRANSPORTATION EMISSIONS COME FROM?

On-road transportation is the largest source of GHG emissions in our region, consisting of emissions from:

- Personal vehicles (50%)
- Light trucks and SUVs (39%)
- Commercial vehicles (10%)

In our mixed rural and urban community, most of our travel is still via single occupant vehicle, and most of those vehicles are using fossil fuels. However, approximately 25% of trips in Saanich are already by active and public transportation.

On-road transportation within Saanich includes GHG emissions from vehicle trips by Saanich residents and businesses within District boundaries.

On-road transportation to/from Saanich (Transboundary transportation) includes GHG emissions from vehicle trips that start or finish in Saanich by Saanich residents and businesses, not trips by those travelling through Saanich.

Off-road transportation includes agricultural tractors, chain saws, forklifts, etc.

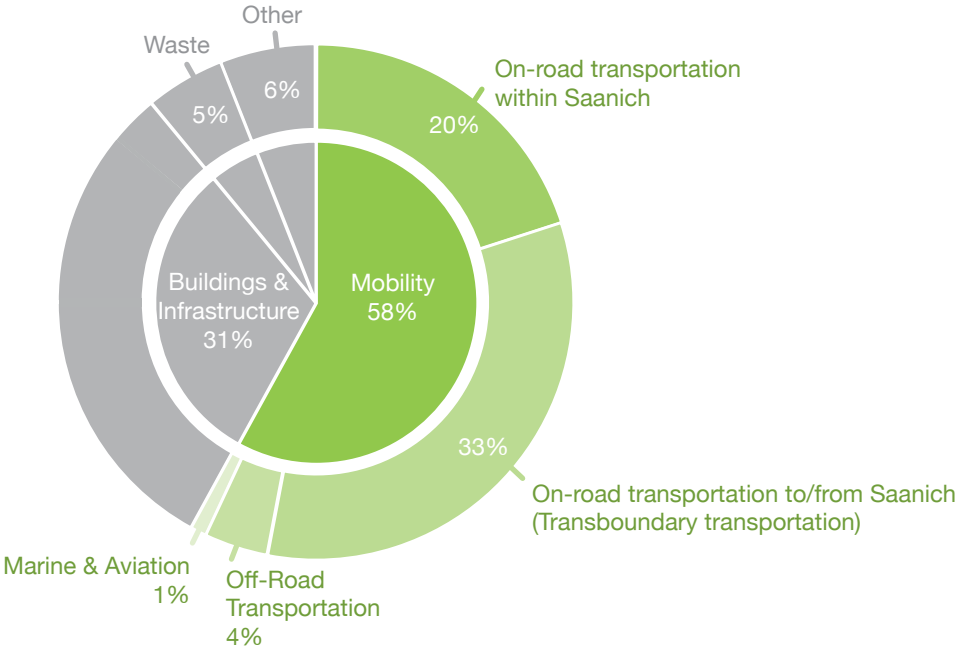


Figure 7. Transportation emissions in Saanich Territorial GHG Inventory, 2017

WHAT WE HEARD DURING COMMUNITY ENGAGEMENT:

Increase density to support easy access to services (e.g., groceries) in neighbourhoods, and reduce reliance on car travel.

Provide more frequent, convenient **bus service on electric buses.**

Promote use of **electric vehicles** with financial assistance for upfront costs and easy access to charging.

Develop safe, attractive and accessible **walking and cycling routes**.

Photo credit: BC Transit

Where We Need to Go

REDUCING EMISSIONS

On-road transportation accounts for more than half of Saanich's GHG emissions, so any significant reduction in our community's emissions must include reducing emissions from vehicles, by reducing the number and length of trips taken by internal combustion engine (ICE) vehicles and by switching from fossil fuels to active transportation or renewable sources of energy to power vehicles (Figure 8).

MOBILITY EMISSION REDUCTION STRATEGIES

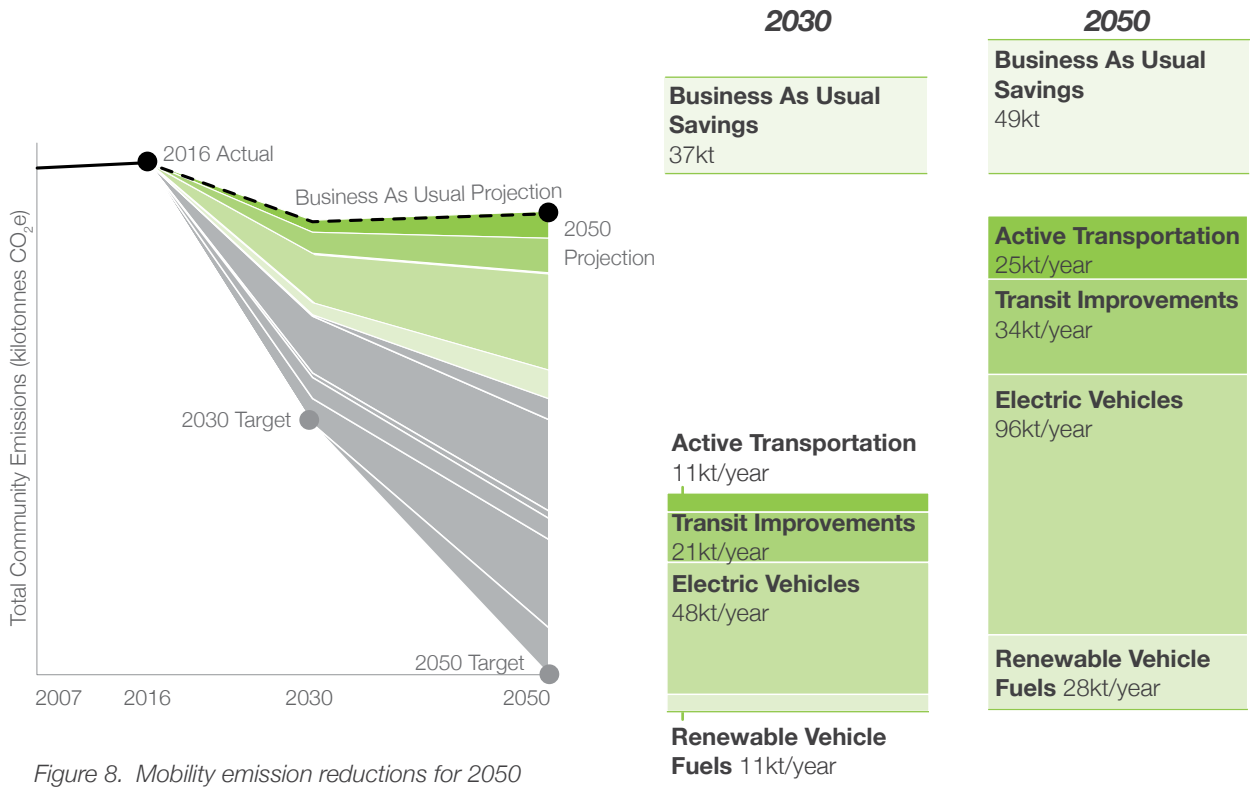


Figure 8. Mobility emission reductions for 2050

Business As Usual Savings: Reductions from policies already in place.

Active Transportation: 22% of all trips by Saanich residents are taken by walking and cycling by 2030, 30% by 2050.

Transit Improvements: 14% of all trips are taken by transit by 2030, 20% by 2050. All BC Transit buses are electrified by 2030.

Electric Vehicles: 36% of all personal vehicles are electrified by 2030, 90% by 2050. 50% of commercial vehicles are electrified by 2050.

Renewable Vehicle Fuels: 10% of remaining fuel is biofuel (in addition to existing federal standards) by 2030, 100% by 2050.

Walking, cycling, wheeling, and other human-powered forms of transportation have no GHG emissions (except for the GHG emissions associated with constructing, maintaining and disposing of the bike, for example, or the related infrastructure, such as roads and sidewalks), and they also support health, safety, equity, local business and community building.

Public transit moves more people using less space and resources than personal vehicles, making transit essential for moving people efficiently in urban areas. Even for buses that are fueled by diesel or gasoline, the fuel use (and GHGs) per person is lower for a trip by bus than for the same trip by single-occupant vehicle. The case for public transit is even stronger when the buses are powered by BC Hydro electricity, which is 98% renewable. BC Transit has a target of a fully electric fleet by 2040 and plans to start purchasing only electric heavy-duty buses starting in 2023.

Saanich's Active Transportation Plan set the transportation mode split targets for 2036 and 2050. The emissions modelling completed for the Climate Plan (Figure 9) suggests that in order to stay within the 2030 GHG emissions limit for our community, the implementation of the Active Transportation Plan needs to be accelerated to meet the 2036 target by 2030.

If people need to travel by personal vehicle, the GHG emissions are much lower when those vehicles are electric. Investing in electric vehicles can also improve air quality and reduce noise pollution in the community. Electric vehicle (EV) ownership is growing substantially in our community. Some heavy-duty vehicles and equipment do not have battery electric options today, so other renewable fuels and/or technological advances are required in order to reach our targets. Figure 10 (p. 36) shows the GHG emissions per trip for different modes of transportation.

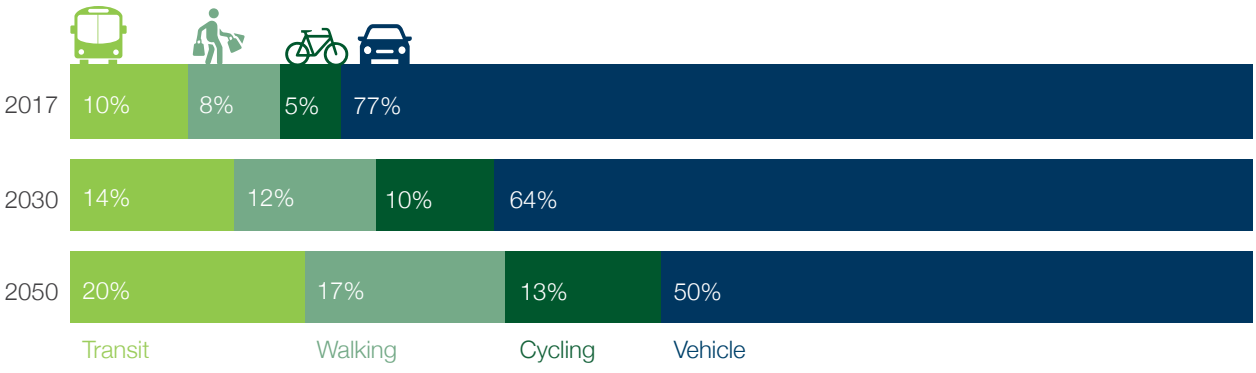


Figure 9. Actual and modelled percentage of trips by mode in Saanich to remain within emissions limits

Where We Need to Go

IMPROVING RESILIENCE

RESILIENCE GOALS

Mobility infrastructure and systems are designed or retrofitted for changing climate conditions, and they enable low-carbon transportation in a changing climate as well as access during emergency events.

Trips are shorter due to smart land-use planning giving more options for accessing services during emergency events.

More backup power options are available as battery technologies for electric vehicles develop.

IDENTIFIED HIGHEST RISKS

Medium-high risk:

Increased average temperatures and extreme weather impacting lifestyle

Hotter, drier summers and increased wildfires causing poor air quality and impacting health (e.g., asthma-related illnesses from smoke or humidity)

Medium risk:

Increased extreme weather events causing disruption and delays in transportation network (e.g., storms, smoke, heavy rainfall delaying flights, ferries, etc.)

Increased extreme weather events (e.g., heat waves, air quality advisories, heavy rainfall, storms, etc.) affecting active transportation

DISTRICT OF SAANICH'S ROLE:

- Designing, building and maintaining public streets, signals, sidewalks, bike lanes and public spaces
- Using land-use and urban design policies and guidelines to influence the location and design of new development
- Regulating road use on streets in our jurisdiction, such as speed limits, parking fees, etc.
- Delivering climate mitigation and adaptation education and incentive programs

WORKING WITH OTHERS TO SUCCEED, INCLUDING:

- BC Transit and the Victoria Transit Commission, who set routes, service levels, fares and local taxes for transit purposes
- CRD and neighbouring municipalities on regional transportation planning and the Regional Growth Strategy
- Development community, who provide active and public transportation amenities in new developments
- Province of BC, responsible for highways, vehicle emissions regulations, the Motor Vehicle Act and more
- People and businesses in Saanich, who are responsible for their own transportation choices

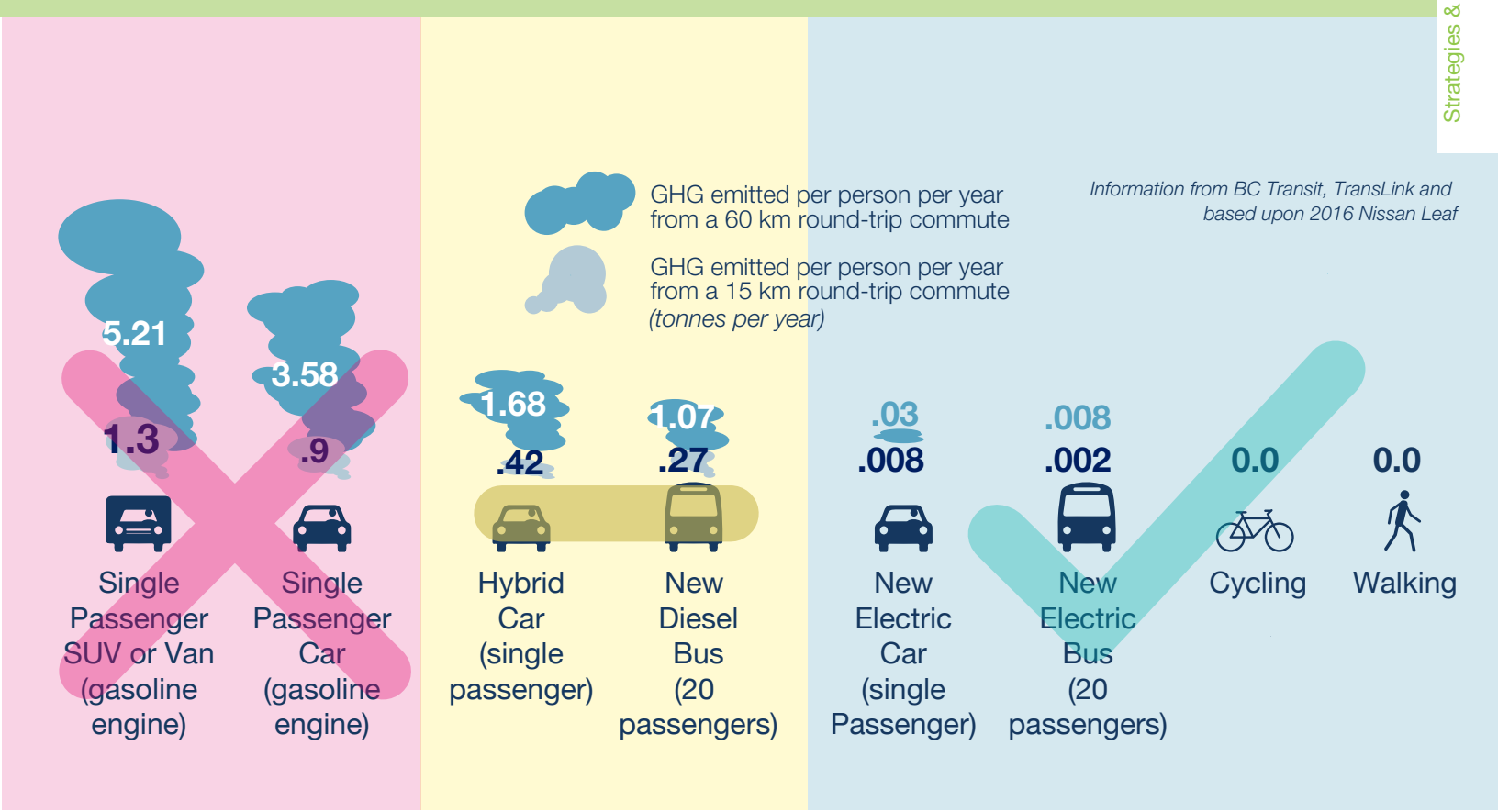


Figure 10. GHG emissions per trip for different modes of transportation

How We'll Get There: Strategies and Actions

Climate actions are presented under each of our three strategies for Mobility (M1 to M3).

STRATEGY M1: INVEST IN ACTIVE TRANSPORTATION

M1.1 Accelerate the implementation of the Active Transportation Plan

Accelerate the implementation of the Active Transportation Plan to, among other actions, build more sidewalks and bike lanes, improve intersection safety for vulnerable users, upgrade transit routes and stops, and incorporate active transportation facilities within development sites.

M1.2 Pilot an electric bicycle incentive program

In partnership with the CRD and the Province, develop and implement a promotion and incentive program for electric bicycles for Saanich residents.

M1.3 Expand the Active School Travel planning program

Expand the Ready, Step, Roll: Active School Travel Planning program to offer walking and cycling skills workshops for interested children and caregivers.

M1.4 Improve bike parking at existing buildings

Explore ways to improve bike parking at existing industrial, commercial and multi-unit residential buildings for tenants and visitors.

M1.5 Explore integration between transit and other shared mobility providers

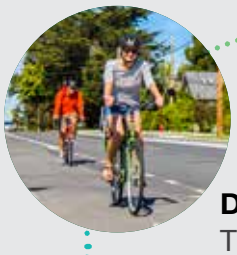
Explore opportunities for integrated multi-modal payment systems with BC Transit and other shared mobility providers such as bikeshares.

M1.6 Support bike shares and other shared mobility services

Support introduction or expansion of bike shares and other shared mobility services (e.g., scooters) in Saanich.

M1.7 Support lower speed limits on residential streets

Support changes to provincial legislation to lower default speed limits on residential streets to improve safety for all transportation modes including pedestrians and cyclists.



Did you know?
The number of people cycling in Saanich has nearly doubled since 2007.

STRATEGY M2:
PRIORITIZE TRANSIT-SUPPORTIVE POLICIES AND PRACTICES

M2.1 Work with partners (VRTC, BC Transit) to accelerate service level improvement and increase transit mode share

Request that Victoria Regional Transit Commission and BC Transit accelerate service level improvement, expand the student pass program at a reduced price in collaboration with schools and/or school boards, and develop a universal pass program for major employers.

Work with Victoria Regional Transit Commission and the Province towards reduced or free fares for eligible riders on public transit.

M2.2 Support increased residential density along public transit routes

Develop policies and mechanisms through the Local Area Planning process to support increased residential density where appropriate along public transit routes, with a focus on high frequency corridors.

M2.3 Make transit travel time-competitive

Decrease travel times for public transit trips through the use of technology or dedicated transit infrastructure where appropriate.

M2.4 Investigate and consider updating off-street parking requirements to support a mode shift towards active transportation

Investigate and consider updating off-street parking requirements to reduce motor vehicle parking spaces in areas well serviced by transit or within walking distance to a Centre or Village while maintaining or improving accessibility for those with mobility challenges.

M2.5 Advocate for increased funding for transit service expansion and improvement

Advocate for increased provincial and local funding needed to expand and improve public transit service levels to meet our public transit mode share targets.

M2.6 Advocate for climate-informed ride hailing regulations

Advocate for regulation by the Province of ride hailing services (e.g., Uber, Lyft) to avoid a displacement of transit ridership and a rise in GHG emissions from increased kilometers travelled in personal vehicles.

M2.7 Work with BC Transit to incorporate latest best practices and new technology needs

Work with BC Transit to update the BC Transit Future implementation plans to incorporate latest best practices and new technology needs.

M2.8 Develop policies and resources for parking management and enforcement

Develop enabling policies and dedicated resources for on-street parking management and enforcement, including time limits, pay parking, ticketing and towing, to optimize use of space and support a mode shift towards active, public, and renewable-energy transportation.

STRATEGY M3:
ACCELERATE ELECTRIC AND RENEWABLE MOBILITY

M3.1 Create a community-wide Electric Mobility Strategy

Create a community-wide Electric Mobility Strategy (including both vehicles and bikes). Explore non-financial opportunities to incentivize uptake of EVs, such as priority parking areas or other benefits. Support shared mobility service providers (e.g., car, bike or scooter share companies), and facilitate access to electric charging.

M3.2 Require EV-ready infrastructure for new development

By bylaw, require new buildings to be EV-ready by ensuring sufficient electrical capacity and infrastructure in new developments to allow for future installation of EV chargers.

M3.3 Support EV infrastructure retrofits in existing buildings

Provide incentives and support for installing EV charging infrastructure, especially in existing multi-family buildings (strata buildings and rental buildings) where more affordable housing options are available.

Did you know?
Over 500 Saanich residents own electric vehicles.

M3.4 Expand public EV charging network

At least double the number of public and business fleet charging stations in Saanich by 2025, including doubling municipal-owned charging stations from 12 to 24. Advocate through FCM and UBCM for continued support from federal and provincial governments for clean vehicles and the development of an EV infrastructure network.

M3.5 Optimize the use of public EV charging stations

Review management options for municipally-owned public EV chargers, such as time limits and fees, to ensure optimal use of chargers.

M3.6 Support "Right to Charge" legislation

Advocate for the adoption of “Right to Charge” legislation by the Province that supports access to home charging for condo and apartment dwellers.

M3.7 Work with organizations in Saanich to reduce emissions from fleets

Work with BC Transit, School Districts, businesses and other organizations in Saanich to identify opportunities to reduce emissions from fleets (e.g., electrification, transitioning to renewable, low-carbon fuels and right-sizing fleets).

Why does the electric vehicle strategy reduce more GHG emissions than active and public transportation?

Distance travelled by vehicle fuel type, size and efficiency are the primary drivers of transportation emissions. Our model showing the pathway to GHG emissions reductions in Saanich (Figure 8, p. 33) assumes that people will travel the same number of kilometers in 2030 and 2050 as they do today; it also assumes that active transportation only replaces shorter personal vehicle trips. (The average pedestrian trip in 2017 was just under one kilometer, while the average vehicle trip was 5.3km.) Therefore, longer electric vehicle trips reduce more GHG emissions than shorter active transportation trips. That being said, this measure is only of territorial emissions (e.g., the "tailpipe" emissions from gas cars and emissions from electricity use in electric cars). If we count embodied GHG emissions (i.e., the sum of all emissions produced during manufacturing, use and disposal), bicycles and walking have lower embodied carbon than personal vehicle ownership.

4.2 Buildings & Infrastructure

VISION

Our homes and buildings are comfortable, healthy, efficient and affordably powered with renewable energy. Infrastructure and buildings in Saanich are designed or upgraded with projected climate changes in mind to help us be resilient to changing sea-levels, temperatures and precipitation patterns.

Image credit: James Munro

Greater Victoria Housing Society (GVHS) is developing a 64-unit affordable rental housing project in Saanich for seniors, people with disabilities, and families. The houses will be designed using Passive House standards, which can reduce energy use by approximately 70% compared to typical new construction.

"Tenants will be more comfortable, it will be cheaper for them to heat, and it will be overall better for the environment."

–James Munro, GVHS

To ensure we are on track by 2030:

Build efficient buildings powered by renewable energy.

Replace fossil fuel space and water heating systems with renewable energy systems.

Adapt buildings and infrastructure to future climate conditions.

The District of Saanich is doing its part in helping the community make these shifts. Read on!

OBJECTIVES & STRATEGIES

	OBJECTIVES	*STRATEGIES*
	All new buildings achieve the higher steps of BC Energy Step Code by 2025. All new buildings are net-zero carbon by 2032. By 2030, the embodied emissions in new buildings are reported and lowered.	**B1. Require efficient, net-zero carbon new construction**
	100% of oil heating systems are replaced by heat pumps by 2030. Heating demands have been reduced by 30% in at least 40% of all buildings by 2030 and at least 80% of all buildings by 2050. 40% of natural gas space and hot water heating systems are replaced by renewable energy systems by 2030 and 100% by 2050.	**B2. Accelerate efficiency and renewable energy upgrades in existing buildings**
	Sufficient renewable energy sources are available to support required conversions from fossil fuel systems.	**B3. Increase energy resilience and renewable energy supply**
	Buildings and infrastructure are designed or retrofitted for changing climate conditions, support ecological functions and reduce exposure to climate hazards.	**B4. Transition towards a climate-ready building stock** **B5. Increase the resilience of Saanich's infrastructure and assets**
	Land use and development patterns minimize exposure to sea-level rise.	**B6. Prepare for long-term sea-level rise**

District of Saanich

"My heat pump was a big improvement from oil—I don't have to worry about oil spills and I feel better knowing I reduced my home's climate impact."

-Wendy Smith, Saanich resident

Photo credit: City Green Solutions

Where We Are Today

Buildings are the second largest source of GHGs in our community (Figure 11). The energy used to heat, power and cool buildings in Saanich makes up 31% of our overall territorial GHG emissions and 20% of our consumption-based emissions. Significant actions to reduce GHGs from buildings will therefore be vital to becoming a 100% Renewable Energy community and reaching our net-zero emission targets by 2050.

Many homes and buildings in Saanich are already powered by renewable energy as BC Hydro electricity is mainly sourced from hydro power (currently 98% renewable). Homes that are heated using oil or natural gas, and have not been upgraded for energy efficiency, may be emitting more GHGs than a typical car every year.

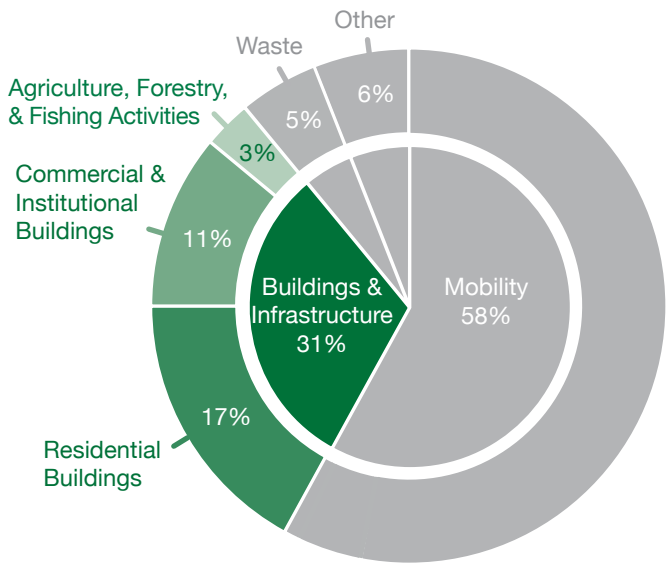


Figure 11. Building & Infrastructure emissions in Saanich Territorial GHG Inventory, 2017

District of Saanich

WHAT WE HEARD DURING COMMUNITY ENGAGEMENT:

Support for **solar energy, methane capture from waste, and other local renewable energy production**.

Concerns about air quality impacts of wood burning.

Interest in **green roofs, rainwater harvesting, carbon sequestration from trees and greenspaces, and other green assets**.

Concerns about **affordability of housing** as well as upfront costs of renovations.

Did you know?

A well-insulated and draft-proofed new home (e.g., built to the highest step of the BC Energy Step code) that uses natural gas for heating may have larger GHG emissions than a home that is less insulated and sealed home (e.g., built to Step 1 of the BC Energy Step Code) but uses electricity for heating.

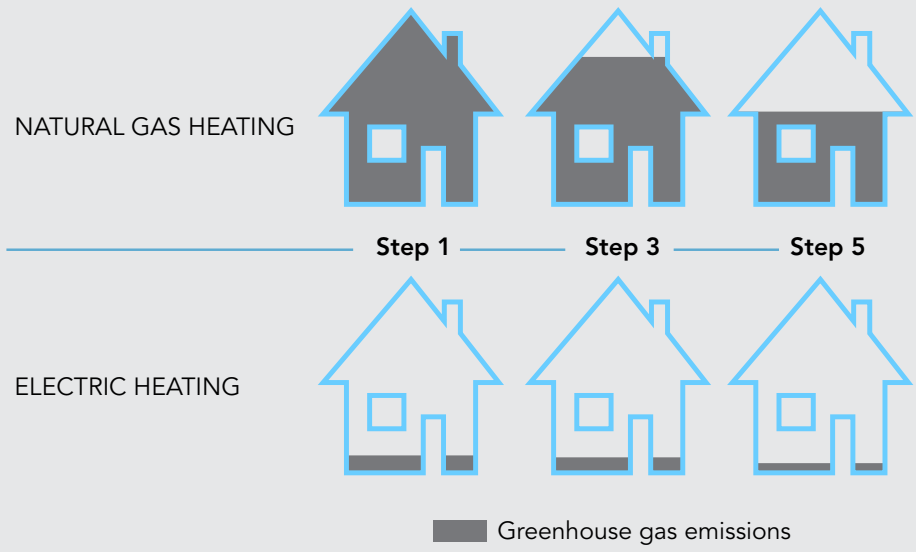


Figure 12. Greenhouse gas emissions by heating type

Image courtesy of Metro Vancouver. Data source: BC Housing and the Energy Step Code Council 2018 report, http://energystepcode.ca/app/uploads/sites/257/2018/09/2018-Metrics_Research_Report_Update_2018-09-18.pdf.

Where We Need to Go

REDUCING EMISSIONS

To become a 100% Renewable Community and achieve net-zero emissions by 2050, all buildings in Saanich will need to be highly energy efficient, powered by renewable energy, designed for future climate conditions, and built using sustainable and low-carbon materials.

Approximately 70% of the residential buildings that will be in operation in 2050 are already constructed today, meaning retrofits are essential to achieving our climate goals. Improving the energy performance of our buildings brings opportunities to save costs, improve indoor health and comfort and make our buildings sites of renewable energy production. The most effective ways to reduce GHG emissions in buildings is to reduce energy use where possible and use renewable energy sources (Figure 13).

BUILDING & INFRASTRUCTURE EMISSION REDUCTION STRATEGIES

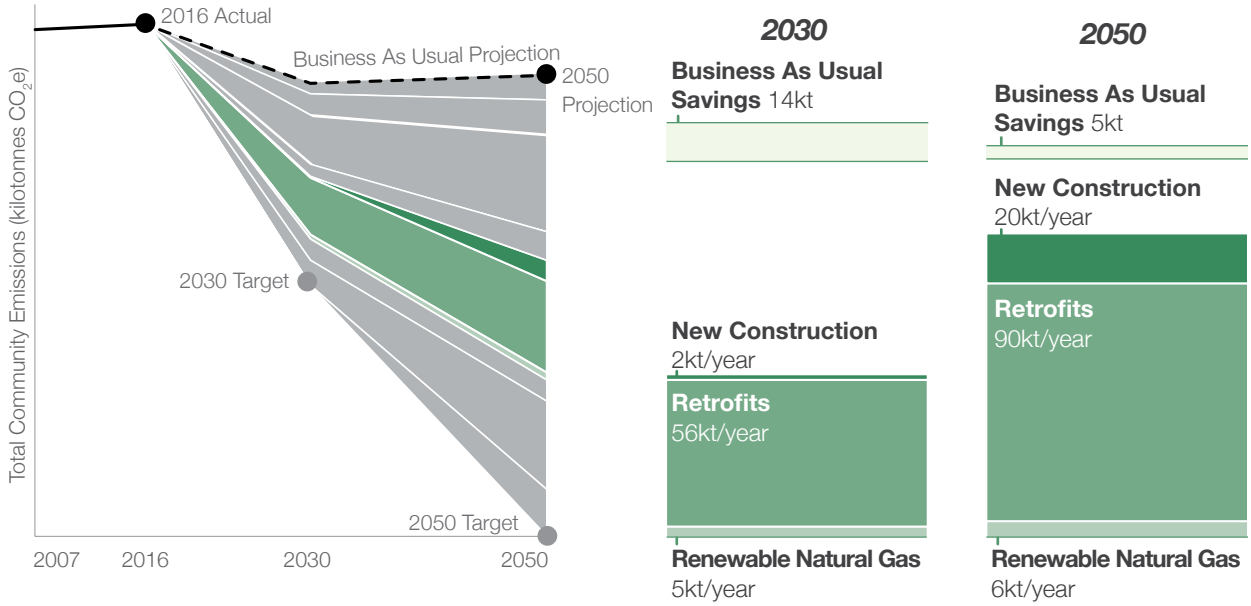


Figure 13. Buildings & Infrastructure emission reductions for 2050

Business As Usual Savings: Reductions from policies already in place.

New Construction: All new buildings achieve the higher steps of BC Energy Step Code by 2025. All new buildings are net-zero carbon by 2032.

Retrofits: 100% of oil heating systems replaced by heat pumps by 2030. 40% of buildings have modest envelope upgrades (e.g., window upgrades, major air sealing, etc.) by 2030, 80% by 2050. 40% of natural gas space and hot water heating systems replaced by renewable energy by 2030, 100% by 2050.

Renewable Natural Gas: 90,000 GJ a year of conventional natural gas is replaced with renewable natural gas before 2030, and 128,000 GJ a year after 2030.

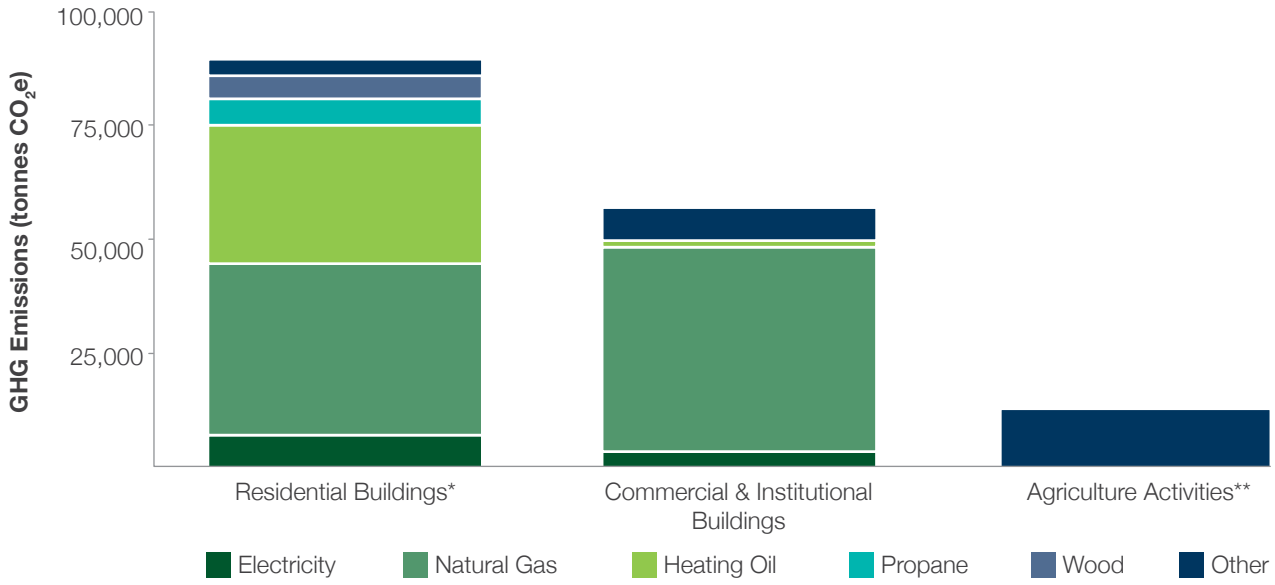


Figure 14. Building sector GHG emissions by energy source

* Residential Buildings includes most housing types except some large multi-family buildings, which are included in the Commercial and Institutional Buildings category based on their account type with their energy utilities.
** Agricultural Activities here refers to the GHG emissions from "stationary energy", i.e., energy to heat agricultural buildings.

WHY SWITCH TO RENEWABLE ENERGY SYSTEMS NOW?

Switching to renewable energy at the time of replacement for space and water heating systems is essential to meeting our 2030 and 2050 GHG emission reduction targets, which are unreachable through efficiency improvements of fossil fuel systems (Figure 13).

A single-family home that meets Step 5 (the highest energy efficiency standard) of the BC Energy Step Code and uses natural gas for heating would achieve a 50% reduction in greenhouse gas emissions. But a home that uses electricity for heating (even a Step 1 home that meets the lowest energy efficiency standard) would achieve at least a 90% reduction in greenhouse gas emissions.

Most residential space heating systems using fossil fuel last between 15 and 25 years. Every time an existing fossil-fuel space heating or hot water system is due to be replaced, it is a crucial opportunity to switch to a renewable energy system. Heating system replacements are a regular cost of building ownership, and if there is a marginal cost increase for a renewable system, incentives or financing can help with renewable energy system adoption. Heat pumps are a market-ready technology for space and water heating that use electricity very efficiently and also provide cooling, which will be increasingly useful with hotter summer temperatures.

If an existing natural gas heating system is not due for replacement, another renewable energy option is to purchase renewable natural gas (RNG). However, RNG costs more than conventional natural gas, and short-term supplies of RNG are still being developed and are predicted to be limited.

Where We Need to Go

IMPROVING RESILIENCE

Existing buildings and infrastructure have been designed for historic climate conditions and sea-levels. Rapidly changing conditions are anticipated due to climate change that is already locked-in. Ensuring our built environment is resilient to more severe weather patterns and changing climate conditions is critical, especially since so many aspects of our infrastructure, such as buildings, pipes and roads should last for decades. Our homes and buildings need to be prepared for more heat waves, poor air quality events and heavy storms and rainfall, as does our drainage infrastructure. Meanwhile, sea-level rise poses a threat to our coastal areas, and requires that we plan ahead to ensure we retain these valuable amenities for generations to come.

RESILIENCE GOALS

Buildings, energy systems, roadways, water-based utilities, and other infrastructure are designed or retrofitted for changing climate conditions.

The built environment (e.g., buildings, landscape designs) supports and enables natural processes that increase resilience, such as rain infiltration, air filtration and species migration.

Land use and development patterns minimize exposure and contribution to long-term hazards such as sea-level rise and changing precipitation and temperature patterns.

IDENTIFIED HIGHEST RISKS

Medium risk:

Sea-level rise and storm surges causing flooding and damage to coastal infrastructure (e.g., drainage, transportation, buildings, etc.)

Increased extreme weather events causing disruption and delays in transportation network (e.g., storms, smoke, heavy rainfall delaying flights, ferries, etc.)

Increased extreme weather events causing impacts to natural ecosystems and biodiversity, compromising capacity of green infrastructure and ecosystem services

Increased extreme weather events (e.g., heat waves, air quality advisories, heavy rainfall, storms, etc.) affecting active transportation

DISTRICT OF SAANICH'S ROLE:

- Designing, building and maintaining municipal buildings, roads, storms and sanitary sewer and waterworks projects
- Regulating land use and development through zoning, neighbourhood planning, permits, policies and bylaws
- Delivering climate mitigation and adaptation education and incentive programs

WORKING WITH OTHERS TO SUCCEED, INCLUDING:

- The provincial and federal governments on building code updates, including efficiency standards, mechanical systems/ fuel types, and climate resilience related to building code requirements
- Utilities and senior levels of government on incentive programs
- The provincial government, which regulates provincial policies and infrastructure including highways, sea-level rise planning parameters for local governments, and much more
- Capital Regional District and neighbouring municipalities on public capacity building, education and community programming
- Industry stakeholders, including developers, architects and designers, construction and retrofit trades, and real estate agents, who are responsible for implementing and communicating about energy and climate performance of buildings
- People in Saanich, who make decisions about building purchases, renovations and operations

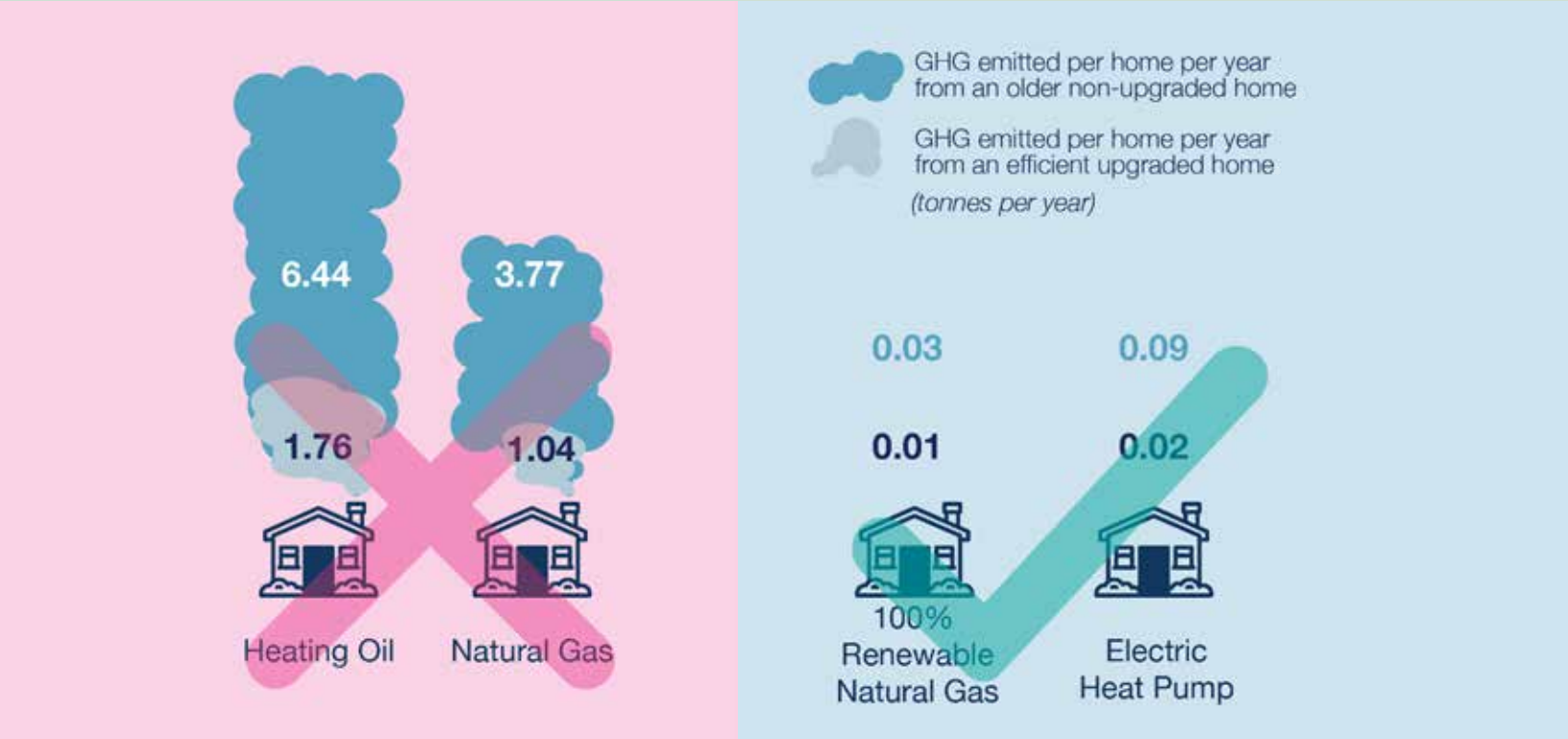


Figure 15. GHG emissions associated with different kinds of home heating systems

How We'll Get There: Strategies and Actions

Climate actions are presented under each of our six strategies for Buildings & Infrastructure (B1 to B6).

STRATEGY B1: REQUIRE EFFICIENT, NET-ZERO CARBON NEW CONSTRUCTION

B1.1 Identify and remove municipal barriers to high-performance buildings

Review Saanich bylaws and other policies to identify potential barriers to resilient, high-performance buildings, and make changes to reduce or eliminate barriers where feasible (e.g., noise and setbacks).

B1.2 Accelerate adoption of net-zero carbon new construction

Develop regulatory tools or incentive programs to achieve net-zero carbon new construction (i.e., electric water and heating systems with on-site renewable energy systems) and/or meet the upper steps of the BC Energy Step Code.

B1.3 Require new construction to achieve upper steps of the BC Energy Step Code by 2025

Develop timelines for achieving higher steps of the BC Energy Step Code so that the highest steps are required for new construction in Saanich by 2025 or sooner. Timelines should be announced well in advance to allow industry to prepare for the new requirements. Also, because the Step Code currently has no requirements for GHG emission performance, develop and implement relaxations to Step Code requirements for buildings with net-zero GHG emissions. The District will continue to advocate for the incorporation of GHG performance into the BC Energy Step Code, and it will also explore other ways it can incentivize or regulate GHG emissions in new buildings in Saanich.

B1.4 Support building industry capacity development

Initiate or participate in a project that helps understand training needs and opportunities and supports skills development for high-performance buildings and renewable energy technologies. Work with partners to support training programs for industry on building practices that improve climate resilience (e.g., high-quality heat pump installations, passive design techniques, incorporation of climate projections into designs, etc.).

B1.5 Encourage the adoption of low carbon materials in new construction

Explore tools to report on embodied energy and emissions in new construction projects and other ways to encourage the use of low-carbon materials in new construction. Examples of low-carbon building materials include wood, Portland-Limestone Cement (PLC), rammed earth, supplementary cementitious materials, biofiber, straw bale and hempcrete.

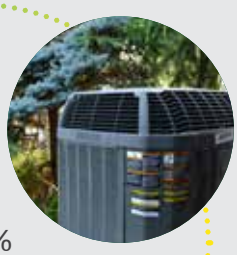
STRATEGY B1:
REQUIRE EFFICIENT, NET-ZERO CARBON NEW CONSTRUCTION

B1.6 Advocate for GHG performance metrics in the BC Building Code

Advocate for the incorporation of GHG performance metrics (e.g., GHG intensity) into the BC Building Code and/or the BC Energy Step Code by the provincial government.

B1.7 Require energy benchmarking for new Part 3 buildings

Introduce mandatory benchmarking for new Part 3 buildings as part of upper steps of the BC Step Code requirement.



Did you know? Among those planning home renovations, 84% of survey respondents were likely or very likely to consider energy efficiency or climate adaptation as part of their upgrades.

STRATEGY B2: ACCELERATE EFFICIENCY AND RENEWABLE ENERGY UPGRADES IN EXISTING BUILDINGS

B2.1 Launch a Home Energy Retrofit Municipal Financing pilot project

Launch the Home Energy Retrofit Municipal Financing pilot project to provide financing to homeowners who convert oil heating to heat pumps (prioritized for lower income households). The pilot project will finance 25 oil to heat pump conversions each year for two years and enable homeowners to repay the District through energy cost savings over time. If successful, the project will be considered for scaling up and for including more energy retrofit measures.

B2.2 Phase out oil heating by 2030

Work with the province and other local governments to develop a strategy for mandatory oil tank removal in order to phase out oil heating by 2030.

B2.3 Carry out effective communications campaigns to promote conversion to renewable energy systems

Carry out effective communications campaigns to building owners, encouraging conversion to renewable energy systems from fossil fuels (i.e., oil, propane, natural gas) and discouraging the replacement of electric systems with natural gas systems.

B2.4 Explore regulatory power to require efficiency and renewable energy upgrades

Work with the Province to explore policies that would require building envelope upgrades and efficient renewable energy upgrades at the time of new construction, major renovation or heating system replacement. Explore options for energy requirements (e.g., EnerGuide home evaluation, air sealing, attic insulation) for major renovations over certain cost thresholds.

B2.5 Increase top-up rebates for conversion from fossil fuel to renewable energy systems

Increase the value of top-up rebates for each home that upgrades from natural gas, oil or propane to electric heat pump and heat pump hot water heater.

B2.6 Develop a comprehensive building retrofit strategy

Develop a comprehensive building retrofit strategy to accelerate energy and emissions reduction retrofits of residential and commercial buildings, based on analysis of building characteristics, improvement potentials and cost effectiveness.

B2.7 Work with partners to support skills development

Work with industry, including the Home Performance Stakeholder Council and other partners, to understand training needs, opportunities and ways the District can support skills development. This will help ensure that Saanich workers and businesses are well-positioned to take advantage of the low-carbon economy and that there is sufficient capacity within Saanich to undertake the needed scale of retrofits for building energy efficiency and renewable energy transition.

B2.8 Advocate for long-term, effective rebate programs

Advocate for consistent, long-term and effective government and utility rebate programs that are tied to emissions reduction requirements.

STRATEGY B2:
ACCELERATE EFFICIENCY AND RENEWABLE ENERGY UPGRADES IN EXISTING BUILDINGS

B2.9 Advocate for provincial support on property-assessed clean-energy financing

Work with property owners, management companies and the building industry to capture opportunities for and address barriers to renewable energy retrofits. Initiatives will include the 2030 Resilient District with commercial building owners and the Transition 2050: Residential Retrofit Acceleration Project.

B2.10 Work with industry partners to support renewable energy retrofits

Work with property owners, management companies and the building industry to capture opportunities for and address barriers to renewable energy retrofits. Initiatives will include the 2030 Resilient District with commercial building owners and the Transition 2050: Residential Retrofit Acceleration Project.

B2.11 Develop incentive tools to encourage commercial and multi-unit residential buildings to undertake deep energy retrofits

Explore and implement effective tools (e.g., property tax freezes on incremental improvements) to encourage owners of commercial and multi-unit residential buildings to undertake significant efficiency or renewable energy upgrades.

B2.12 Work with the Province to prevent fuel switching from low carbon to high carbon energy sources

Work with the Province to develop mechanisms that prevent fuel switching from low-carbon to high-carbon energy sources in our community.

B2.13 Participate in retrofit code development

Work with provincial and federal governments to develop a retrofit code that enables local governments to set requirements for GHG emission performance.

B2.14 Introduce voluntary energy benchmarking for existing buildings

Introduce voluntary energy benchmarking for existing buildings to encourage energy literacy, market transformation, and improvement in building energy performance.

B2.15 Advocate for home energy labelling and disclosure

Request that the Province adopt mandatory energy and greenhouse gas labelling at the time of sale/lease, and work with local governments and the Province to support public disclosure mechanisms for home energy labelling.

B2.16 Support mandatory recommissioning for existing Part 3 buildings

Encourage the Province to implement mandatory recommissioning for existing Part 3 buildings. Recommissioning is a re-optimization process for existing buildings to ensure that building equipment and systems are operating optimally to meet occupant needs.

B2.17 Support mandatory energy and greenhouse gas benchmarking for existing Part 3 buildings

Encourage the Province to enact mandatory energy and greenhouse gas benchmarking for existing Part 3 buildings.

STRATEGY B3:
INCREASE ENERGY RESILIENCE AND RENEWABLE ENERGY SUPPLY

B3.1 Support development of local Renewable Natural Gas production

Support the development of local Renewable Natural Gas (RNG) production, such as an RNG facility at Hartland landfill, by providing Saanich compost or other CRD opportunities as they arise.

B3.2 Support the Province and utilities to produce sufficient renewable energy

Advocate for the supply of affordable, resilient renewable energy where needed, by the Province and utilities, in order to meet targets.

B3.3 Develop a renewable energy guide for residents

Develop a guide to explore clean, renewable energy production potential in Saanich and support residents, individually or collectively, in the use of renewable energy supply and storage to improve self-sufficiency and emergency preparedness (e.g., information about net-metered solar photovoltaics and battery backup systems).

B3.4 Work with the Province and utilities to incentivize local renewable energy production

Work with the Province and utilities to encourage or incentivize on-site or local renewable energy generation (e.g., biogas, solar and wind).

District of Saanich

STRATEGY B4:
TRANSITION TOWARDS A CLIMATE-READY BUILDING STOCK

B4.1 Develop strategies to preserve and enhance permeability and stormwater management

Identify and implement strategies to further preserve and enhance permeability and stormwater management through development. Strategies could include adopting a maximum impermeable/hard surface coverage requirement in the zoning bylaw or other key bylaws, reviewing permeability definitions, ensuring that hardscape alternatives (e.g., permeable pavers) are achieving their intent, and encouraging the implementation of rain gardens/bioswales on private lands.

B4.2 Develop a "programmed roof" policy

Develop a "programmed roof" policy for buildings over a certain size and/or in certain geographical areas to encourage the use of roof space for community benefits, including solar energy generation, community gardens, recreation spaces, and green roofs (which improve stormwater runoff, building energy performance, habitat opportunities and urban cooling outcomes).

Did you know? Among survey respondents who use fossil fuels at home, 50% were very likely or somewhat likely to switch to renewable energy in the next five years, especially if there was help with upfront costs (incentives or financing).

B4.3 Advocate for the incorporation of climate adaptation considerations into the BC Building Code

Advocate for the incorporation of adaption (e.g., higher cooling demand, air filtration, wind loads, etc.) into the next building code update by the Province.

B4.4 Encourage building design or retrofit measures to reduce impact from heat waves and poor air quality events

Encourage building design or retrofit measures to reduce impact from heat waves and poor air quality events through passive and active design strategies (e.g., shading devices, vegetation screens, heat pump/air conditioners with filters).

B4.5 Consider a rainwater collection system requirement in new development

Consider a requirement for the installation of rainwater collection systems (e.g., rain barrels or cisterns) in new ground-oriented development.

B4.6 Encourage the implementation of engineered greywater systems

Provide resources to encourage the implementation of engineered greywater recovery systems in new development, and investigate incentives for large institutional and commercial buildings.

STRATEGY B5:
INCREASE THE RESILIENCE OF SAANICH'S INFRASTRUCTURE AND ASSETS

B5.1 Include climate change considerations in the corporate asset management system

Include climate change considerations in the design, renewal, maintenance and replacement of municipal assets. This should include:

- Undertaking condition and capacity assessments of existing infrastructure (e.g., bridges, pump stations, culverts, retaining walls, etc.) to understand performance under projected future climate conditions and to plan accordingly
- Integrating natural assets into the asset management system to account for the value and services provided by natural systems
- Determining data gaps for Saanich infrastructure resilience and narrowing them by increasing monitoring and data collection accordingly (e.g., flow monitoring, CCTV through pipes, general surveying, etc.)

B5.2 Update engineering design specifications to account for future climate projections

Accelerate efforts to review and update engineering design specifications and other infrastructure guidance documents, as necessary, to account for future climate projections and ensure application to both private and public investments.

B5.3 Conduct flood hazard planning

Conduct flood hazard planning in consideration of creeks/rivers and sea-level rise, and seasonally flooded areas.

B5.4 Accelerate the completion of a stormwater master plan with climate change considerations

Accelerate the completion of a stormwater master plan that integrates climate projections and leverages natural assets. This should include:

- Assessing Saanich's stormwater management assets and management needs
- Undertaking current and projected inland flood risk assessment and mapping to inform updated flood hazard development permit areas

B5.5 Investigate on-site stormwater management practices on private lands

Look at on-site stormwater management practices on private lands by, for example, exploring a drainage utility and rate structure that incentivizes stormwater management and green infrastructure on private property.

STRATEGY B6: PREPARE FOR LONG-TERM SEA-LEVEL RISE

B6.1 Complete sea-level rise mapping

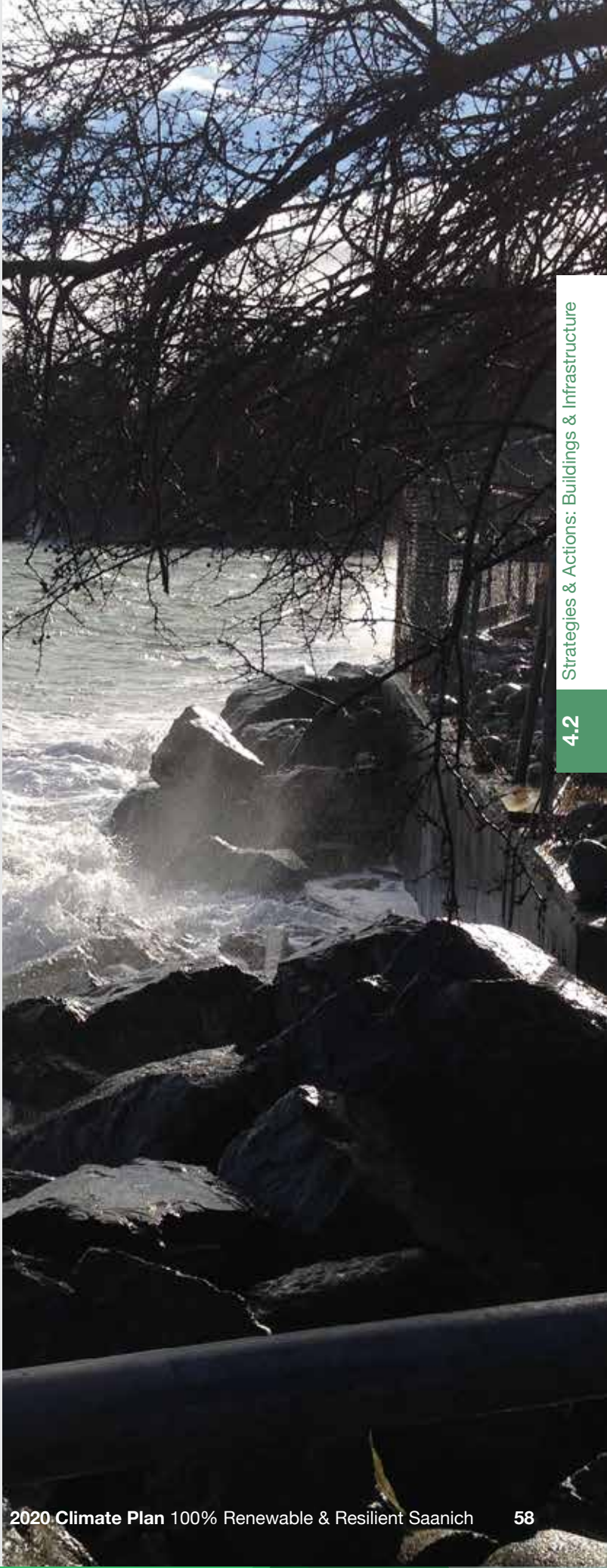
Complete detailed sea-level rise mapping to inform updates to land-use and development policies and bylaws. The District of Saanich is a partner in a region-wide project to model and map flood risk due to sea-level rise and tsunamis, which is anticipated to be completed by March 31, 2020. The results will be used to update Saanich's land-use and development policies as needed to reduce risk from sea-level rise.

B6.2 Increase sea-level rise knowledge and adaptation capacity in the community

Increase sea-level rise knowledge and capacity through the development and delivery of resources and materials for residents, businesses and developers. One example includes incentives and public education strategies encouraging naturalization approaches, such as Green Shore, to protect the shoreline from erosion and sea-level rise.

B6.3 Develop a Coastal Adaptation Strategy

Initiate the development of a Coastal Adaptation Strategy that explores longer term options and the preferred direction for adapting public infrastructure and amenities, supporting sensitive coastal ecosystems, and regulating land uses in response to ongoing and/or severe sea-level rise along specific coastal extents.



4.3 Food & Materials

VISION

People in Saanich have access to affordable, healthy food, and the climate impact of food and materials produced or consumed in Saanich has been dramatically reduced.

OBJECTIVES & STRATEGIES

	OBJECTIVES	*STRATEGY*
	Saanich's consumption-based emissions related to food are reduced. By 2030, 100% compostable organic waste and paper is diverted from landfill.	**F1. Reduce the climate impact of food production and consumption**
	Emissions from consumer choice and industry transition (e.g., refrigerants, aerosols, foams, equipment, livestock, fertilizer, etc.) are reduced by 33% by 2030 and 100% by 2050.	**F2. Move towards "lighter living" in Saanich**
	Agricultural land is protected. A greater proportion of food is grown and consumed locally. The majority of local farmers have the ability to adapt their production practices to a changing climate.	**F3. Improve the resiliency and self-sufficiency of the local food system**

District of Saanich

To ensure we are on track by 2030:

Reduce food waste and choose lower-carbon foods.

Support local farmers to improve food security.

Adopt “lighter living” to reduce consumption and waste of materials.

The District of Saanich is doing its part in helping the community make these shifts. Read on!

Where We Are Today

Food and materials (e.g., consumer goods) are smaller sources of greenhouse gas emissions than transportation and buildings, but they are still significant, especially from a consumption-based emissions perspective. Saanich currently imports most of our food and goods; but, at the same time, more than 20% of Saanich's land area is actively farmed, and the soils and climate in Saanich have good agricultural capabilities.

Our **Territorial GHG Inventory** (Figure 16) accounts for food and materials in the following ways:

- Waste (5%)
  - Methane from decomposition of organic matter (e.g., food waste) sent to landfill
  - Methane from decomposition of sewage discharge to ocean
  - Methane from composting of kitchen scraps and yard waste
- Industrial Processes and Product Use (IPPU) (8%)
  - Emissions produced from industrial processes in Saanich that chemically or physically transform materials, and emissions from the use of products (e.g., refrigerants, foams, aerosol cans, etc.) by industry and end-consumers in Saanich
- Agriculture, Forestry, and Other Land Use (AFOLU) (-2%)
  - GHGs sequestered or emitted through land use and land use changes, including carbon sinks in forest and croplands, and emissions from converting forests to settlements
  - Methane and nitrous oxide emissions from livestock, manure, fertilizer, and agricultural soil management

Manufacturing and industrial processes do not play a large role in our Territorial GHG Inventory as we are mainly a service-based and consuming economy.

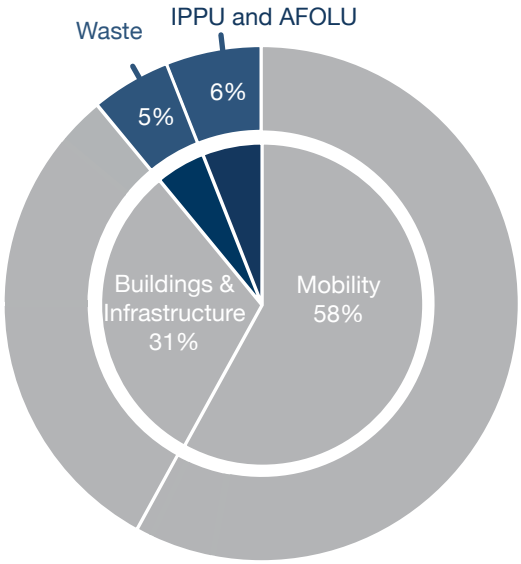


Figure 16. Food & Materials emissions in Saanich Territorial GHG Inventory, 2017

Using a **Consumption-Based GHG Inventory**, our emissions nearly double, as it includes the GHG emissions associated with producing, manufacturing, transporting and disposing of the food and materials we buy and throw away, whether they are produced locally or anywhere else in the world.

In this way of counting emissions, food and materials (not just consumer goods but also the carbon associated with building roads, manufacturing vehicles, using drywall and cement in buildings, etc.) represent 19% and 9% of our community emissions, respectively. Even with these considerations included, the largest emissions categories in our community are still from transportation and buildings.

As shown in Figure 17, our biggest consumption-based GHG emissions from consumables come from textiles, followed by plastics and paper.

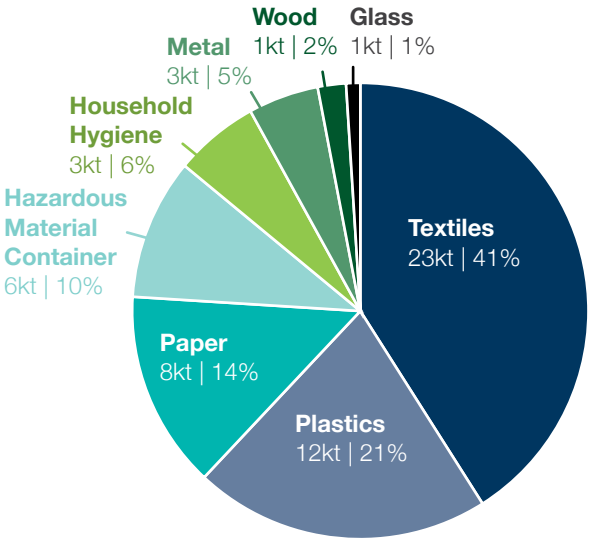


Figure 17. GHG emissions from consumables and waste in Saanich (Consumption-Based Emissions Inventory)

As shown in Figure 18, nearly three quarters of the consumption-based emissions in our community are a result of animal proteins, particularly red meat and dairy products.

GHG emissions are generated in every step of the food system, including:

- Production
  - Land use change for crop and pasture land (e.g., deforestation, soil management)
  - Energy used in farm vehicles and buildings (e.g., greenhouses)
  - Production and use of fertilizers, pesticides, and other inputs
  - Animals (methane from manure and from digestion by cows and other ruminants)
- Food processing and refrigeration
- Transportation
- Home and restaurant cooking
- Waste

In a consumption-based emissions approach, most of the climate impacts from food and materials are "upstream" rather than "downstream." In other words, most of the climate impact happens as the product is produced, rather than when it is discarded.

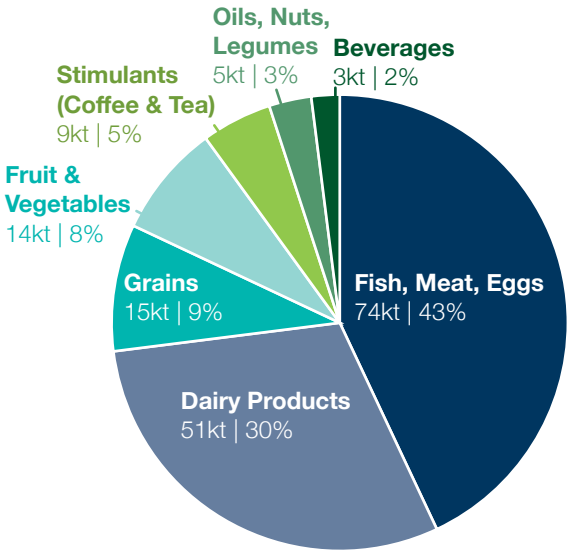


Figure 18. GHG emissions from different food types in Saanich (Consumption-Based Emissions Inventory)

WHAT WE HEARD DURING COMMUNITY ENGAGEMENT:

The **climate impact of personal food choices** was very or somewhat important to 73% of survey respondents.

Survey respondents expressed **strong support for local food production**, including by local farmers, community gardens and home gardening.

Younger respondents expressed significant **support for a plant-based diet.**

Support for **a ban on plastic bags and work to reduce waste from packaging** and non-recyclable products at the source (e.g., producers, retailers).

Desire for convenient and close access to grocery stores to facilitate buying smaller quantities more frequently (to avoid food spoilage and help with active transportation).

Interest in a greater **choice of food portion sizes and packages**, especially for smaller households.

Desire for **easier ways to recycle more items at home and on the go**.

Where We Need to Go

REDUCING EMISSIONS

From a territorial emissions point of view, we need to reduce emissions from food and materials (Figure 19), which includes diverting all feasible organic matter from the landfill, and reducing emissions from "other" GHG sources related to consumer choice and industry transition, including:

- Refrigerants, aerosols and foams
- Lawnmowers, BBQs, leaf blowers, and other equipment
- Emissions from livestock, fertilizer, decomposition, etc.

FOOD & MATERIALS EMISSION REDUCTION STRATEGIES

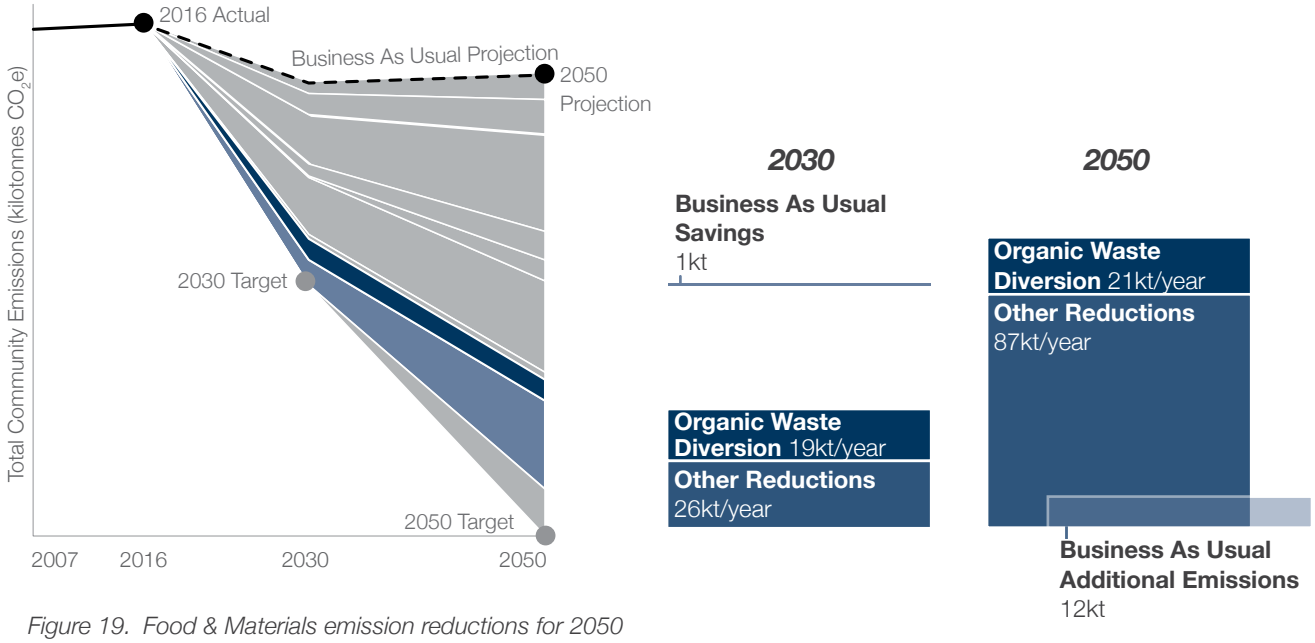
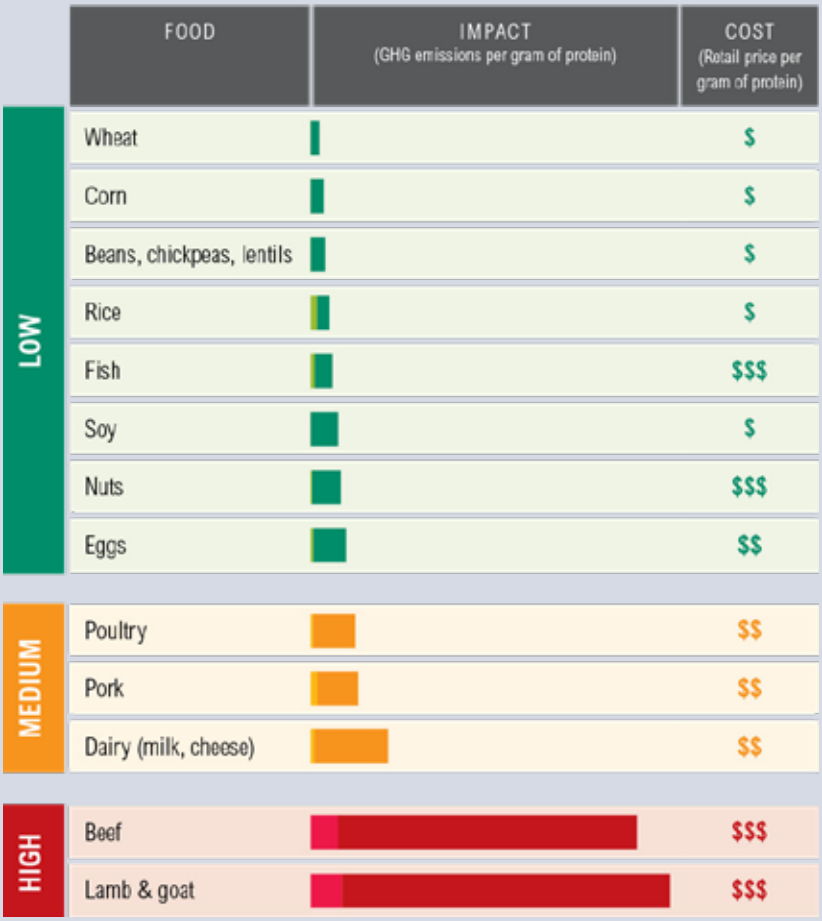


Figure 19. Food & Materials emission reductions for 2050

Business As Usual Savings or Emissions: Reductions or growth in emissions from trends or policies already in place.

Organic Waste Diversion: By 2030, a 100% diversion of compostable organic waste and paper is achieved, resulting in an 88% reduction of organic matter in the waste stream, as some organic waste is not compostable (e.g., non-recyclable wood waste).

Other Reductions: Emissions from sources related to consumer choice and industry transition (e.g., refrigerants, aerosols, foams, equipment, livestock, fertilizer, etc.) are reduced by 33% by 2030. These emissions are reduced by 100% by 2050.



From a consumption-based emissions point of view, we can make different food choices to reduce our GHG emissions, and to reduce consumption and climate impacts of our consumption choices.

Figure 20. GHG emissions impacts of different sources of protein. The lighter shade indicates emissions from agricultural production; the darker shade indicates emissions from land-use change. Source: www.wri.org/resources/data-visualizations/protein-scorecard

FOOD SECURITY & CLIMATE ACTION IN SAANICH

"It filled up my fridge and I don't feel anxious about having to cook a meal now! I have enough food to last four days for my family."
–Community Kitchens Program participant

Saanich Neighbourhood Place Community Kitchens Program helps people who would otherwise not be able to afford fresh fruit and vegetables. It provides a safe, local place to access groceries for free. By reducing food waste, the program also reduces GHG emissions. Other program successes include:

- 600 lbs of food rescue per week
- 2880 community meals served last year
- 435 families accessed the program last year

Where We Need to Go

IMPROVING RESILIENCE

RESILIENCE GOALS:

The District protects and retains agricultural land.

Local farmers have the resources and capacity to adapt their production practices to a changing climate.

The health of the food and agricultural sector is strengthened, with a greater proportion of food grown and consumed locally.

IDENTIFIED HIGHEST RISKS:

Medium risk:

Coastal inundation and overland flooding reducing the availability and use of low-lying land areas

Rising sea-level increasing the impacts of tsunami inundation zones and risks to more properties in Saanich

Drier summers increasing topsoil erosion, pests and invasive species, leading to higher agricultural inputs and compromising food production potential and quality

Increased flooding in spring and drought in summer causing shifts in viable crops

DISTRICT OF SAANICH'S ROLE:

- Regulating land use regarding local agriculture, processing and distribution facilities
- Purchasing products for municipal operations
- Serving food in municipal facilities
- Collecting garbage and organics (kitchen scraps and yard waste)
- Educating people in Saanich about recycling, composting, and waste reduction
- Encouraging pollinator corridors, organic farming, and opportunities for farm businesses
- Promoting and permitting community gardens

WORKING WITH OTHERS TO SUCCEED, INCLUDING:

- Capital Regional District and Recycle BC who administer the blue box recycling program
- Capital Regional District on Hartland landfill management
- Provincial and federal governments on regulating packaging, products and recycling (e.g., extended producer stewardship)
- Local farmers on agriculture issues in Saanich
- Food providers (e.g., grocery stores, restaurants) on food choices provided to consumers
- People in Saanich, who make their own food and consumption choices

How We'll Get There: Strategies and Actions

Climate actions are presented under each of our three strategies for Food & Materials (F1 to F3).

STRATEGY F1: REDUCE THE CLIMATE IMPACT OF FOOD PRODUCTION AND CONSUMPTION

F1.1 Reduce carbon emissions from local food production

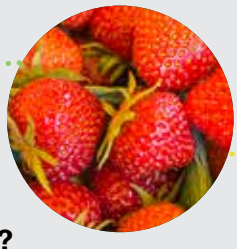
Reduce carbon emissions from local food production by accelerating action on the Agriculture and Food Security Plan, particularly Objective 4D (Encourage the Implementation of Climate Change Adaptation and Mitigation Measures for the Local Food System).

F1.2 Encourage residents to choose low-carbon foods and reduce food waste

Encourage people in Saanich to choose low-carbon foods and reduce food waste through such means as promoting the "Love Food, Hate Waste" campaign and the Saanich Carbon Calculator.

F1.3 Encourage food service establishments to reduce carbon emissions from their operations

Encourage food service establishments in Saanich to reduce food waste, offer low-carbon/plant-based food options, and use renewable-energy cooking methods.



Did you know?
Only a small proportion of the climate impact of food is associated with transportation, or food miles, whereas 98% of the consumption-based emissions are associated with the amount of land and energy used in growing the food.

STRATEGY F2:
MOVE TOWARDS "LIGHTER LIVING" IN SAANICH

F2.1 Reduce single-use plastics

Develop and enforce a bylaw to reduce the use of single-use plastics in Saanich.

F2.2 Develop and implement a Zero Waste Strategy

Develop and implement a community-wide Zero Waste Strategy that aligns with the CRD Solid Waste Management plan.

F2.3 Work towards zero waste for large public events

Work towards zero waste Saanich-led large public events, including such measures as vendor agreements to achieve high rates of waste reduction and diversion, and providing easy-to-use recycling and composting receptacles.

F2.4 Work with partners on circular economy initiatives

Work with local businesses and other levels of governments on circular economy initiatives that recover and regenerate products and materials at the end of their useful lives.

F2.5 Mobilize residents and businesses towards "lighter living"

Mobilize Saanich residents and businesses towards “lighter living” (e.g., reducing, repairing, etc.) by using educational tools, such as the Saanich Carbon Calculator, and supporting lighter living initiatives, such as tool libraries, repair cafes and second-hand initiatives.

F2.6 Advocate for expansion of extended producer responsibility programs

Advocate for the expansion of extended producer responsibility programs by the Province to improve waste diversion and recycling rates.

F2.7 Improve monitoring of and compliance with a recyclable materials ban

Work with the CRD to enhance monitoring and enforcement of the recyclable materials ban for residents and businesses, and work with stakeholders to improve compliance.

Did you know?
On average, 390 kg of food is wasted per Canadian each year. That represents $30 billion dollars wasted and 21 million tonnes of GHG emissions every year from food waste in Canada. Reducing food waste will reduce our community emissions and save money for people in Saanich.

STRATEGY F3:
IMPROVE THE RESILIENCE AND SELF-SUFFICIENCY OF THE LOCAL FOOD SYSTEM

F3.1 Accelerate the implementation of the Agriculture and Food Security Plan

Accelerate the implementation of the Saanich Agriculture and Food Security Plan to, among other outcomes, increase food production on agricultural land, improve food security and self-sufficiency, and support the local food industry.

F3.2 Support an Agricultural Adaptation Strategy for Vancouver Island

Support the development and implementation of an Agricultural Adaptation Strategy for Vancouver Island (being led by the BC Agriculture and Food Climate Action Initiative) to help local farmers and other stakeholders anticipate, plan for and increase resilience to climate change in our local food system.

F3.3 Increase capacity for local food production

Increase capacity for local food production through community gardens and apiaries, edible landscaping (e.g., fruit trees, edible plants), food forests and/or farms in parks and public lands, and facilitate access to training and workshops through recreation centres and community partners.

F3.4 Increase adoption of water-wise agricultural practices

Encourage the Province and the CRD to tie water licenses and subsidies to water-wise agricultural practices (e.g., use of drip irrigation, on-site reservoirs, etc.).

4.4 Ecosystems

VISION

Local ecosystems continue to thrive, adapt and provide critical services.

OBJECTIVES & STRATEGIES

	OBJECTIVES	*STRATEGY*
	Ecosystem health and biodiversity are protected. The removal of carbon from the atmosphere by trees, plants, and ecosystems in Saanich is increased.	**E1. Enable natural systems to thrive and adapt**
	Ecosystem services are maintained or enhanced.	**E2. Protect and manage natural assets as critical infrastructure**

District of Saanich

To ensure we are on track by 2030:

Value and enhance natural assets and services.

Help local ecosystems adapt to a changing climate.

The District of Saanich is doing its part in helping the community make these shifts. Read on!

Where We Are Today

Saanich's ecosystems include shoreline, numerous freshwater lakes, streams and creeks, abundant natural vegetation, and varied wildlife.

The District manages 171 parks (ranging from neighbourhood parks to multi-sport athletic parks to natural areas and open spaces) covering more than 825 hectares with more than 100 kilometres of trails. The park system is ecologically diverse, offering residents a spectrum of active living experiences and opportunities to connect with nature. More than half of the system is composed of natural areas protecting local ecosystems. Signature parks known throughout the region and beyond include Mount Douglas, Mount Tolmie, Gorge, Cuthbert Holmes, Cedar Hill and Prospect Lake Parks.

Our ecosystems and natural areas can be both sinks and sources of greenhouse gas emissions.

Emissions estimates for land use carbon emissions and sequestration have a high degree of uncertainty today. Our Territorial GHG inventory shows that greenspaces in Saanich were sequestering less in 2017 than in 2007 due to changes in land use (e.g., conversion from crop or grass land to buildings and roads.) Figure 21 shows the changes in percentage of Saanich's land area consisting of high-density, impervious surface and high-density tree cover, respectively, from 1986 to 2011.

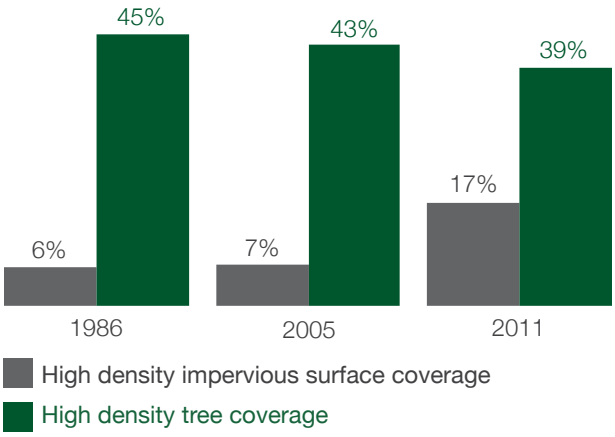


Figure 21. Select land use changes in Saanich, 1986-2011

EXISTING AND GROWING CLIMATE STRESS ON OUR ECOSYSTEMS

Saanich's natural areas and biodiversity are at high risk due to climate change. Many species and ecosystems are already showing strains. Climate changes, including rising average temperatures, hotter and drier summers, heat island effect due to increased urbanization, coastal "squeeze" due to sea-level rise, and more precipitation from fall through spring will cause a range of impacts such as increased opportunities for invasive species, pests and diseases, compromised water quality and availability, and reduced viability of some native species. Climate risks for ecosystems are higher than many other risk areas because there is no "technological fix", and impacts are assessed to be "very likely" and "potentially irreversible."

WHAT WE HEARD DURING COMMUNITY ENGAGEMENT:

Protecting our local species and ecosystems is **one of the primary reasons people care about climate action.**

People value trees, greenspaces and natural areas for many reasons, including the climate services they provide (shade, carbon sequestration, permeable surfaces, etc.).

Over 30% of survey respondents say they have **already seen stress on plants or wild animals** in their neighbourhoods (including native tree species, fish, birds, insects and amphibians) that may be caused by a changing climate.

Drought-stressed cedar tree (Saanich)

Where We Need to Go

Solutions that improve the resilience of ecosystems include expanding natural areas, connecting protected areas with natural corridors and "stepping stones", considering future climate suitability of different species, and adapting our management techniques.

These can have rich co-benefits for the community as a whole, such as increased recreational opportunities, physical and mental health benefits, social benefits, and improved air quality.

Healthy natural systems also have the potential to support our adaptation and resilience efforts by delivering critical services, such as stormwater management, erosion control, carbon sequestration, air filtration and cooling. By viewing ecosystem services as part of our critical infrastructure and integrating them within our asset management approach, we can support the adaptation of our natural areas while improving our own ability to respond to changing conditions, such as drier, hotter summers.

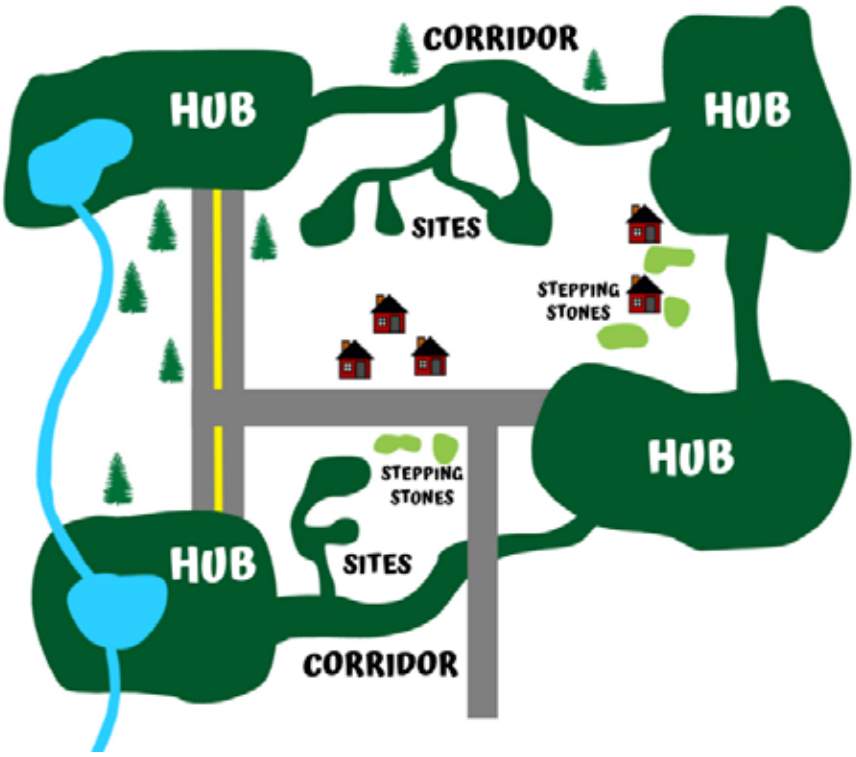
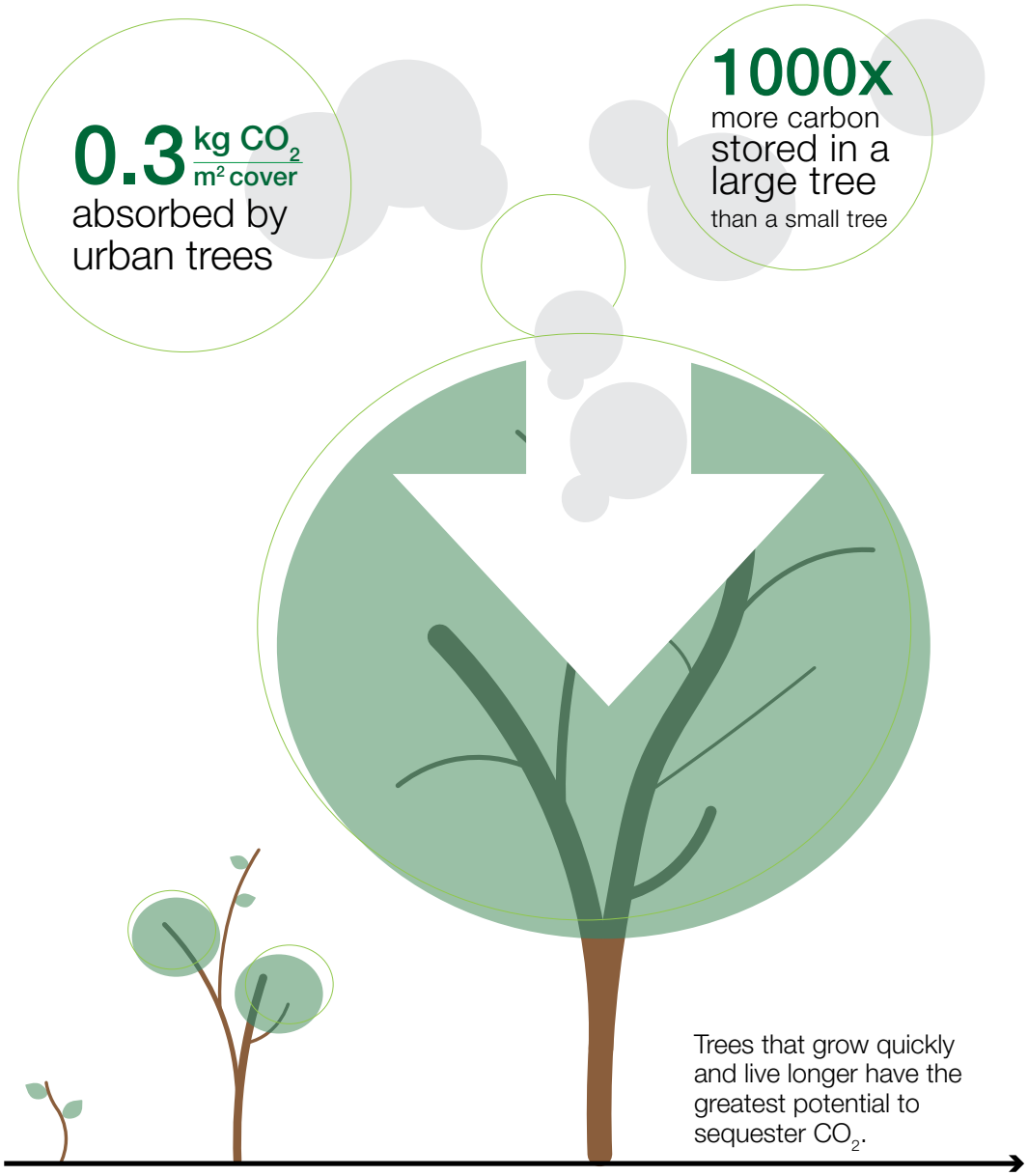


Figure 22. Enhancing natural areas through connections: green hubs, corridors and stepping stones

Carbon Storage and Sequestration by Urban Trees



Data source: "Carbon storage and sequestration by urban trees in the USA" (Novak and Crane, 2001) in Environmental Pollution, p. 381-389. Available from https://www.journals.elsevier.com/environmental-pollution

CAPTURING CARBON

Healthy ecosystems in Saanich can play a small but essential role in achieving net-zero GHG emissions by 2050.

Planting trees and expanding greenspace will increase carbon sequestration, reducing Saanich's GHG emissions and also helping to increase the resilience of our community and ecosystems.

While protection and enhancement of greenspaces in Saanich will play a role in reaching net-zero emissions in our community, we must focus on reduction of fossil fuel use as a main strategy—it is estimated that 10,000 trees can sequester approximately 200 tonnes of CO_2 each year, which is only 0.04% of our community GHG emissions.

Where We Need to Go

IMPROVING RESILIENCE

RESILIENCE GOALS

Ecosystems have the space needed to thrive and adapt, with protected natural areas and well-connected habitat corridors.

Natural areas are carefully monitored and managed to support ecosystem health and biodiversity.

IDENTIFIED HIGHEST RISKS

High risk:

Increased average temperatures and drier summers causing native species to be stressed, affecting biodiversity and creating new opportunities for invasive species

Increased average temperatures causing swift ecological regime shifts

Rising sea-levels causing habitats to shift landward with risk of loss due to coastal squeeze, increased wave action, erosion, soil salinization and other stressors

Medium-high risk:

Increased average temperatures and drier summers reducing groundwater recharge and affecting water quality

More frequent and intense heat waves causing warmer temperatures in streams, decreasing water quality and impacting fisheries

Drier summers turning wetlands into drier ecosystems (i.e., swamp to seasonal wetland)

More frequent and intense rainfall events causing saturated soils, with impacts on natural bio filtering and storage capacity (including water quality and flooding risks)

Increased drought causing increased tree mortality rate and change in urban forest composition

ASSISTED MIGRATION

As the climate changes, species that were well-suited to conditions in a particular region may not adapt quickly enough to survive. Assisted migration is human intervention to speed the distribution of organisms—from seeds to animals—to locations deemed more suitable. It involves potential benefits and risks.

District of Saanich

DISTRICT OF SAANICH'S ROLE:

- Managing natural areas on public land
- Growing the parks and trails system to include links and connections between greenspaces
- Restoring natural areas in Saanich parks in partnership with the community
- Managing invasive species
- Educating residents on Saanich's native species and ecosystems (e.g., Naturescaping, Park Ambassador program)
- Managing natural assets that provide municipal services (e.g., stormwater, erosion prevention)
- Maintaining the Urban Containment Boundary to protect natural spaces and habitats
- Using the Tree Protection Bylaw to regulate the removal of trees on private and public property
- Protecting native ecosystems as part of the development process

WORKING WITH OTHERS TO SUCCEED, INCLUDING:

- Federal and provincial governments, who research and regulate species at risk, wildlife, pollution abatement, spill response, pesticide use, water, fisheries, and more
- Other parks and wildlife agencies, including CRD Regional Parks, BC Parks (Ten Mile Point Ecological Reserve), and Canadian Wildlife Service (Victoria Harbour Migratory Bird Sanctuary)
- CRD's Regional Invasive Species Program and the Capital Region Invasive Species Partnership – Intergovernmental Working Group (CRISP-IWG)
- Community stakeholders, including stewardship groups, residents' groups, individuals and the development industry
- People who make choices about ecosystem management on private and institutional lands in Saanich

GARRY OAK ECOSYSTEMS IN A CHANGING CLIMATE

Saanich is located entirely within the Coastal Douglas-fir (CDF) Biogeoclimatic Zone, which is the smallest zone, encompassing only 0.3% of British Columbia. It is also the least protected (6%) and located mainly (80%) on private land. As a result, all 36 ecological communities in the CDF are ranked globally and provincially as critically imperiled, and 218 species of wildlife and plants in the CDF are at risk. Garry oak ecosystems are home to a high percentage of the rare species found in the CDF zone.

The CDF zone, and Garry oak ecosystems in particular, are the highest conservation priority in BC in regard to climate change. Historically, Garry oak ecosystems occurred inland and northward of their current range. These ecosystems are currently at the northern limit of their range and are considered valuable to protect as the range of species move northward. Acquiring drier areas of forest for the ecosystems' anticipated expansion may be an effective strategy.

How We'll Get There: Strategies and Actions

Climate actions are presented under each of our two strategies for Ecosystems (E1 and E2).

STRATEGY E1: ENABLE NATURAL SYSTEMS TO THRIVE AND ADAPT

E1.1 Double the rate of planting trees to enhance the urban forest

Grow the urban forest in Saanich by planting 10,000 new trees of diverse species by 2025, and increase its resilience to a changing climate through suitable tree selection and management practices (e.g., considering native species, selecting species that can tolerate longer summer droughts and wetter winters, enhancing biodiversity and choosing locations least likely to be affected by sea-level rise).

E1.2 Increase stewardship tools for private land owners

Increase stewardship tools for private land owners to adapt to and mitigate climate change by expanding on existing programs, such as Naturescaping, recommended plant lists, and invasive species management.

E1.3 Implement "Natural Intelligence" parks program

Implement "Natural Intelligence", a new program that engages residents in connecting to nature in their lives through volunteering and experiencing parks and natural areas.

E1.4 Develop an operational approach to tree retention and replacement during development

Establish an internal working group to develop an operational approach to tree retention and replacement on private and public property during development. The operational approach should consider additional and potentially competing objectives (such as maintaining tree canopy cover, enhancing biodiversity, increasing urban density, and expanding the active transportation network).

E1.5 Protect and expand the urban forest

Protect and expand the urban forest in the long term through measures such as:

- Reviewing and revising the Urban Forest Strategy
- Updating canopy cover measurement
- Creating a tree inventory
- Strengthening protections for existing trees on private and public lands
- Developing an Urban Forest Reserve Fund that would be dedicated to enhancing the urban forest through such actions as planting trees and acquiring lands specifically for tree planting

E1.6 Develop and implement a Biodiversity Conservation Strategy

Develop and implement a Biodiversity Conservation Strategy to support the health and resilience of ecosystems and species on public and private lands, working collaboratively with community groups, residents, all levels of government and other stakeholders. In relation to adaptation, the Biodiversity Strategy would provide direction and strategies to increase ecosystem resilience and reduce impacts to biodiversity.

E1.7 Expand, connect and restore natural areas

Expand, connect and restore natural areas in Saanich through a variety of strategies that will ensure their permanent protection and management to maximize ecosystem services and resilience, biodiversity and carbon sequestration potential.

E1.8 Partner with school districts on environmental education

Partner with school districts to support environmental and stewardship education and encourage naturalization projects on school grounds.

E1.9 Explore carbon dioxide removal measures with partners

Work with partners to explore carbon dioxide removal measures, such as restoration of coastal ecosystems and afforestation of non-forested areas. Preliminary exploration in this area indicates that the potential to achieve emissions reductions through ecosystem restoration could be very limited in the short term; and because it takes time for ecosystems to restore and grow, this measure is unlikely to have a significant impact on our 2030 emissions limit. Saanich will seek opportunities to collaborate with other local governments, First Nations and the CRD to better understand the technical feasibility and scalability of restoring local ecosystems to remove carbon dioxide. Partnership with potential stakeholders, such as other levels of governments, owners of large land/natural areas and research institutions, will be sought to support this effort.

E1.10 Prevent planting and spread of invasive plants

Work with regional partners to prevent the planting and spread of invasive plants.

E1.11 Improve monitoring of ecosystem health

Improve monitoring of local species and ecosystem health over time, including the development of methodologies and baselines.

E1.12 Develop principles for assisted migration

Develop principles and approaches for assisted migration to support species whose dispersion rates are unable to keep pace with climate change.

E1.13 Improve compliance with new bylaws and policies

Develop educational programs to assist residents in understanding the value of ecosystems and becoming stewards.

STRATEGY E2: PROTECT AND MANAGE NATURAL ASSETS AS CRITICAL INFRASTRUCTURE

E2.1 Evaluate services provided by natural assets

Determine the value of natural assets to District services (e.g., stormwater management, pollination services, clean air, infrastructure cooling), and include them in asset management and services planning.

E2.2 Develop a strategy to maintain services provided by natural assets

Develop a land acquisition and protection strategy to support delivery of key goals and services required for mitigation and adaptation (e.g., sequestration, drainage, flooding, biodiversity).

4.5 Community Wellbeing

VISION

People and organizations in Saanich are healthy and resilient in a changing climate and empowered in taking climate action. Climate action benefits people in Saanich, helping them be more prepared for a changing climate and connected to the natural environment and their community.

OBJECTIVES & STRATEGIES

	OBJECTIVES	*STRATEGY*
	Emergency and community health services are adequate to respond to the identified climate risks.	**C1. Ensure emergency and community health services keep pace with climate change**
	Climate action benefits people in Saanich, helping to improve air quality and community health while supporting clean energy jobs and a diverse economy.	**C2. Empower Saanich residents and businesses to take climate action**

District of Saanich

To ensure we are on track by 2030:

Increase climate awareness and participation among residents and organizations in every neighbourhood of Saanich.

Prepare to take care of ourselves and each other in emergencies and a changing climate.

The District of Saanich is doing its part in helping the community make these shifts. Read on!

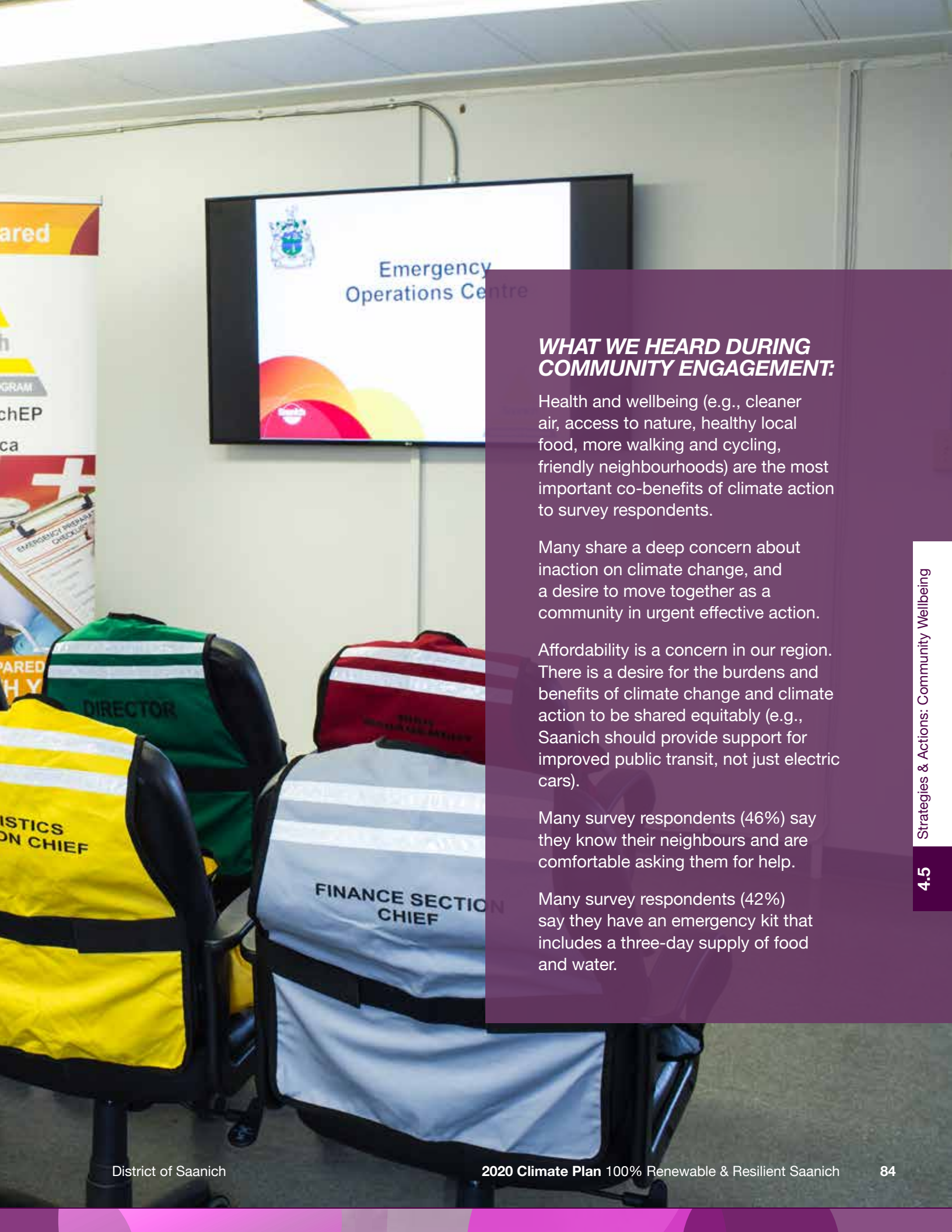
Where We Are Today

Saanich has over a decade of climate adaptation experience, including integrating climate adaptation into infrastructure planning and emergency response.

The early impacts of climate change affect our physical wellbeing as well as our emotional wellbeing, evoking grief for what may be lost and apprehension for the future.

More vulnerable members of our community have already needed to modify their daily routines due to poor air quality from wildfires or overheating in their buildings during hot summers. Adoption of active transportation and clean energy technology has momentum, but access in our community may not be equitable across incomes, abilities, and other factors. Developing specific measures and monitoring community wellbeing as it relates to climate change and climate action will be an important part of the Climate Plan implementation.

District of Saanich



WHAT WE HEARD DURING COMMUNITY ENGAGEMENT:

Health and wellbeing (e.g., cleaner air, access to nature, healthy local food, more walking and cycling, friendly neighbourhoods) are the most important co-benefits of climate action to survey respondents.

Many share a deep concern about inaction on climate change, and a desire to move together as a community in urgent effective action.

Affordability is a concern in our region. There is a desire for the burdens and benefits of climate change and climate action to be shared equitably (e.g., Saanich should provide support for improved public transit, not just electric cars).

Many survey respondents (46%) say they know their neighbours and are comfortable asking them for help.

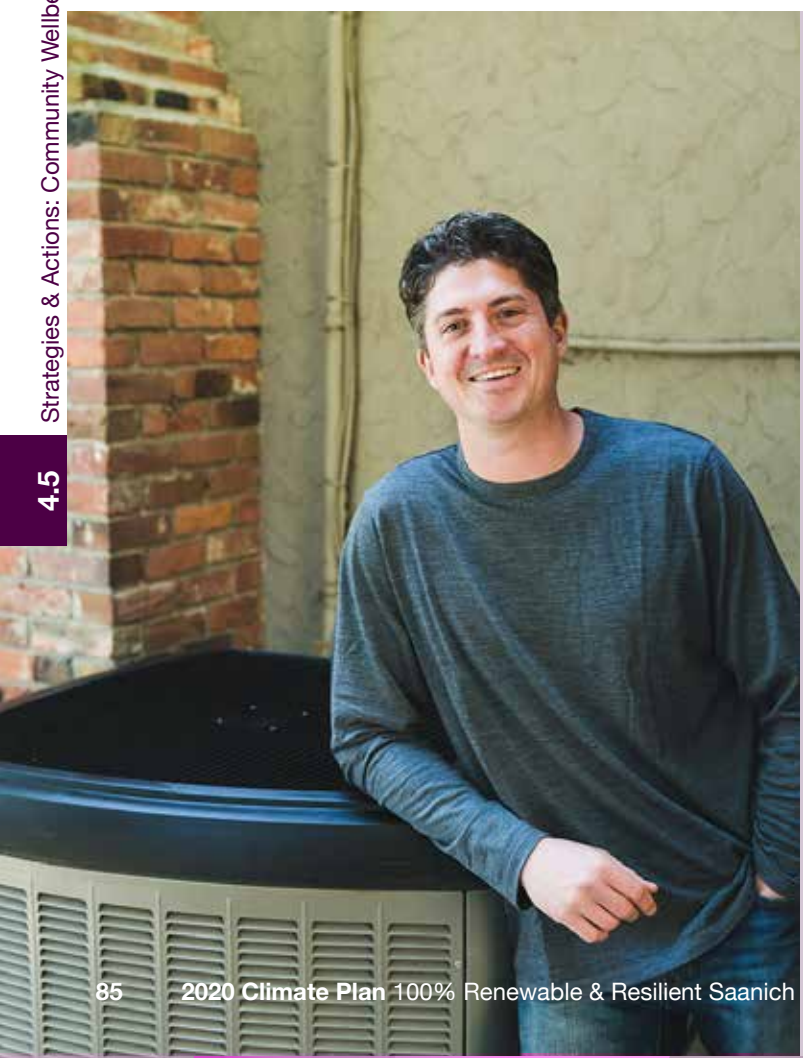
Many survey respondents (42%) say they have an emergency kit that includes a three-day supply of food and water.

Where We Need to Go

IMPROVING RESILIENCE

We cannot simply "weather" the changes ahead; we must foster a more inclusive, connected and engaged community.

Saanich can take proactive action and empower people and organizations to contribute to solutions, prepare themselves and their neighbourhoods, and work collaboratively towards a shared vision of the future. We have a unique opportunity to develop our local economy and increase the number of jobs in the green economy. Climate action is an opportunity to improve the health and wellbeing of our community by creating vibrant and complete neighbourhoods, options for active transportation, improved access to nature, a green local economy, and an engaged population that is prepared to work together.



COMMUNITY MEMBERS IN ACTION

"We've had our heat pump for over five years and really appreciate the efficient heating and cooling it provides. In addition to improving the comfort of our home, we also feel good about how much easier our heat pump is on the environment compared to heating and cooling systems that use fossil fuels."

–Jens Henderson, Saanich farmer and realtor

Photo credit: Transition 2050, Federation of Canadian Municipalities

District of Saanich

RESILIENCE GOALS

Health outcomes and routine emergency service levels are maintained through proactive planning and responding to a changing climate.

Health and emergency services are tailored to serve all, especially vulnerable populations, and to reduce inequities in health outcomes.

Residents stay informed and actively prepare themselves, their homes, their neighbourhoods and their local ecosystems for a changing climate.

Businesses of all sizes are equipped with the knowledge and skills necessary to identify business risks and mitigate the impacts of a changing climate on their operations and services.

People in Saanich have access to affordable and nutritious food, warm homes in the winter and cool homes in the summer, and affordable energy.

Social infrastructure (i.e., community networks and public spaces) are designed to promote community wellbeing and build resilience at the neighbourhood scale.

Wildfire risks are minimized through urban planning, community services and emergency response measures.

IDENTIFIED HIGHEST RISKS

Medium-high risk:

Hotter, drier summers and increased wildfires causing poor air quality and impacting health (e.g., asthma-related illnesses from smoke or humidity)

Increased average temperatures and extreme weather impacting lifestyle

Medium risk:

Increased average temperatures and drier summers increasing wildland/interface fires in Saanich

DISTRICT OF SAANICH'S ROLE:

- Supporting public safety and local emergency response through the operation of Saanich Fire, Saanich Police, Saanich Public Works, Saanich Engineering, Saanich Parks, and the Saanich Emergency Program
- Supporting social wellbeing through local government housing, food security, employment, parks, recreation, community services, arts and culture, heritage, equity, and similar initiatives

WORKING WITH OTHERS TO SUCCEED, INCLUDING:

- Federal government, which issues alerts for severe weather events and is responsible for setting national climate targets and motivating action through broad climate and social policies
- Provincial government, which administers Emergency Management BC and BC Centre for Disease Control
- Capital Regional District, which is responsible for regional planning, provides rental housing, and manages drinking water supply, sewer treatment and parks and trails
- Island Health, which is responsible for providing health care to the community
- Individuals, households, businesses, community groups and non-profit organizations, who are involved in a myriad of human health, social and economic wellbeing initiatives.

District of Saanich

How We'll Get There: Strategies and Actions

Climate actions are presented under each of our two strategies for Community Wellbeing (C1 and C2).

STRATEGY C1: ENSURE THAT EMERGENCY & COMMUNITY HEALTH SERVICES KEEP PACE WITH CLIMATE CHANGE

C1.1 Retrofit municipal facilities to increase cooling and air filtration capabilities

Retrofit Saanich facilities to provide increased cooling and air filtration in anticipation of higher summer temperatures and poor air quality events from wildfire smoke.

C1.2 Undertake urban heat mapping

Undertake heat mapping in urban areas to inform policy and operational priorities for urban forests, landscaping, cooling amenities (e.g., drinking fountains), building materials and/or building features (e.g., green walls), with particular attention to improving equitable health outcomes.

C1.3 Work with partners to ensure coordinated response during severe weather events

Work with the Province and Island Health to ensure coordinated response protocols during severe heat and poor air quality events.

C1.4 Update Wildfire Protection Plan and Interface Fire Hazard Development Permit Area

Update the Wildfire Protection Plan every ten years (or as warranted by significant changes to drought conditions or ecosystem profiles), and update the Interface Fire Hazard Development Permit area as needed.

C1.5 Develop Saanich-specific wildfire prevention materials

Develop Saanich-specific wildfire prevention materials that seek to balance environmental protection with FireSmart principles, such as focusing on building materials and preferred tree species (e.g., deciduous).

C1.6 Work with service providers to vulnerable populations to develop adaptation strategies

Work with service providers to vulnerable populations (e.g., long-term care facilities) to facilitate adaptation planning (e.g., the provision of cooling and air filtration in buildings in anticipation of severe heat and poor air quality events).

C1.7 Work with partners to minimize impacts from vector-borne diseases

Work with the Health Authority and other levels of government to minimize impacts from vector-borne diseases through public education, preventative measures (e.g., habitat modification to reduce mosquito and tick breeding), and early detection, warning and response systems.

C1.8 Review severe weather protocols for vulnerable populations

Review severe weather protocols for vulnerable populations every five years, and ensure they are sufficient for newly emerging and more severe weather events.

STRATEGY C2:
EMPOWER SAANICH RESIDENTS AND BUSINESSES TO TAKE CLIMATE ACTION

C2.1 Implement a tangible and hands-on neighborhood-level program

Implement a tangible and hands-on neighbourhood-level education and support program that encourages and empowers neighbours to take action on climate change together (this could include the use of neighbourhood energy and resilience inventories and plans). The program could be aligned with emergency preparedness, nature education, and other Saanich initiatives.

C2.2 Host an annual climate fair

Host an annual climate fair where progress and success are celebrated, key lessons are shared, cross-pollination of ideas are encouraged, and citizen-led networks are strengthened.

C2.3 Provide educational programming and workshops

Provide access to programming and workshops for residents and businesses on a range of topics related to renewable energy and climate resilience, such as home retrofits, gardening, waterwise landscaping, on-site stormwater management, flood mitigation and emergency preparedness.

C2.4 Carry out a communications campaign on urgent climate action

Implement a communications campaign that highlights the urgency of climate action, showcases examples of local residents and businesses taking meaningful action, and integrates messaging into existing public education and programs (e.g., Saanich Emergency Program).

C2.5 Host a Community Climate Collaborative

Host a Community Climate Collaborative involving local residents, businesses and organizations to advise, monitor progress, and be ambassadors and partners for community climate action.

C2.6 Develop an equity tool

Develop and apply an equity tool for municipal climate actions to improve the climate resilience of those who are vulnerable in our community and to fairly share the benefits of climate action (e.g., access to rebates and incentives for renewable energy technology). Factors such as income, age, gender, ethnicity and ability can affect resilience to climate change and the ability to transition to renewable energy. The equity approach can include: compiling and reporting on equity data; developing ongoing relationships with equity-seeking groups in the community to inform action; and evaluating program design to avoid replicating or furthering historical inequities and to better address the diverse barriers, needs, and priorities of different parts of our community.

C2.7 Develop a Saanich climate information webpage

Develop online resources with mitigation and adaptation information and action resources specifically for people and organizations in Saanich.

C2.8 Seek opportunities to work with neighbouring First Nations

Seek opportunities to partner with or otherwise support climate initiatives and climate-related priorities of neighbouring First Nations governments.

C2.9 Explore a bulk-purchase program

Investigate the feasibility of the development of a bulk-purchase program to provide at-cost equipment and technologies that reduce energy costs and/or improve resilience (e.g., rain barrels, solar kits, emergency kits, etc.).

C2.10 Develop a community grants program

Develop a community grants program for neighbours to work together to implement projects that reduce GHG emissions and to build community resiliency.

C2.11 Collaborate with researchers and post-secondary institutions

Collaborate with post-secondary institutions to inform the District's climate action and provide opportunities for students and researchers to advance climate knowledge.

C2.12 Work with the arts community

Work with the arts community to install public art pieces that awaken, inspire, and remind people in Saanich of climate risks and opportunities for climate action while potentially providing functional benefits to address climate mitigation and/or adaptation.

4.6 Leadership in District Operations

VISION

By 2045, the District of Saanich is successful in fully integrating climate change mitigation and adaptation considerations into organizational operations and culture. Also, municipal operations are powered with 100% renewable energy, with zero GHG emissions, and resilient to changing climate conditions.

OBJECTIVES & STRATEGIES

	OBJECTIVES	*STRATEGY*
	The District of Saanich is a recognized leader in climate action.	**L1.** Integrate climate action into Saanich processes and decision-making **L2.** Become a climate friendly employer
	By 2025, GHG emissions from municipal operations are reduced to 50% of 2007 levels. By 2040, these emissions are reduced to zero.	**L3.** Transition to an efficient, renewably powered fleet **L4.** Transition to efficient and renewably-powered municipal buildings **L5.** Reduce waste and GHG emissions from goods and services

District of Saanich

To ensure we are on track by 2030:

- **Make climate action a priority.**
- **Transition to renewable energy in facilities and fleet.**
- **Adapt infrastructure and services to a changing climate.**

Where We Are Today

The 2010 Climate Action Plan targeted reducing the GHG emissions from the District's municipal operations by 50% of 2007 levels by 2020.

We have made major strides towards this target with several initiatives, including:

- Continuing to replace gasoline light-duty fleet vehicles with electric vehicles
- Creating a pool fleet to share a smaller number of vehicles more efficiently among more staff, and transitioning to electric vehicles
- Making streetlights more energy efficient
- Switching to renewable energy for space and water heating and making energy efficiency improvements in an increasing number of our buildings

The introduction of the new Greener Garbage program in 2014 led to an increase in fuel use by fleet vehicles. However, because the program diverts kitchen scraps and yard trimmings from the landfill, it reduces far more community emissions (through the reduction of landfill gas) than it adds from increased fuel usage.

In 2018, the District of Saanich's greenhouse gas emissions from municipal operations were 13% lower than 2007 levels (as shown in Figure 23).

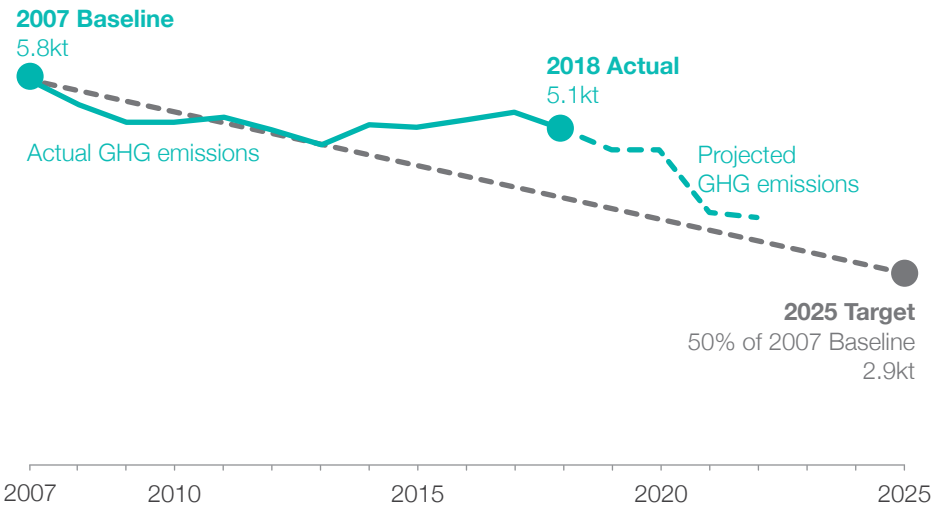


Figure 23. Actual GHG emissions and targets for Saanich municipal operations

District of Saanich

WHAT WE HEARD DURING COMMUNITY ENGAGEMENT:

Focus on actions that directly reduce fossil fuel use.

Consider divesting from fossil fuels.

Incentives for sustainable choices should be available to everyone, not only Saanich staff.

Free parking is not aligned with climate action targets.

Support working remotely to reduce the need for commuting.

Where We Need to Go

REDUCING EMISSIONS

This Climate Plan sets new targets for reducing the GHG emissions from the District's municipal operations:

- Reduce emissions to 50% of 2007 levels by 2025.
- Achieve net-zero emissions by 2040.

The above targets are set for five and ten years earlier, respectively, than the same targets for the Saanich community as a whole. The District can be a leader, demonstrating that these targets are achievable, helping build market capacity for low-carbon buildings and vehicles, and showcasing particular strategies to reduce emissions.

GHG emissions from the District's municipal operations are almost equally divided between our buildings and our vehicle fleet. Efforts to reduce the District's own GHG emissions must focus on both of these areas.

Proposed projects, if fully funded, are estimated to reduce the District's municipal operations emissions by 34% of 2007 levels by 2023. The remaining reduction needed to meet the 50% reduction target has to be achieved through additional projects, as well as through purchasing Renewable Natural Gas for the remaining natural gas use in facilities that have undergone major energy conservation upgrades.

IMPROVING RESILIENCE

The District is committed to protecting and preparing its assets in a changing climate and helping the community cope with severe events by:

- Using resilience as a guiding principle in all decision-making (e.g., for capital investments, policies and operational practices)
- Upgrading corporate facilities and infrastructure to maintain routine service levels in light of climate change
- Upgrading Saanich buildings to improve cooling capacity during heat waves and air filtration in wildfire smoke events
- Ensuring that District facilities are climate-ready and that the District can deliver important services during severe weather events, such as heat waves, severe storms, and poor air quality events due to forest fires

How We'll Get There: Strategies and Actions

Climate actions are presented under each of our five strategies for Leadership in District Operations (L1 to L5).

STRATEGY L1: INTEGRATE CLIMATE ACTION INTO SAANICH PROCESSES AND DECISION-MAKING

L1.1 Establish a new Climate Action Reserve Fund

A new Climate Action Reserve Fund will support GHG emissions reduction for the corporation as well as climate adaptation and GHG emissions reduction in the community.

To provide resources for the implementation of accelerated climate actions, the internal carbon tax rate should be raised in 2020 from $25 per tonne of CO_2e (the current rate) to at least $50 per tonne of CO_2e. The contribution would increase by 2% every year thereafter to remain a stable source of funding even as emissions decrease. The current internal carbon rate of $25 per tonne is lagging behind BC's carbon tax rate.

L1.2 Include a climate alignment scorecard in reports to Council for development projects

Develop and implement a climate lens tool to evaluate the greenhouse gas and resilience implications of development proposals and approvals.

L1.3 Establish a carbon price policy

Develop a policy to establish a price on GHG emissions and to enable the value of those emissions to be incorporated into Life Cycle Cost Analyses for Saanich's projects. This would help incorporate climate change mitigation considerations into cost benefit analyses for projects and initiatives. It would also reduce the financial risks of increased operating costs due to rising external carbon taxes over the life span of Saanich's projects (e.g., building upgrades and replacements, fleet vehicle purchases).

L1.4 Create a climate leadership group

Create a cross-departmental climate leadership group to oversee implementation and monitoring of the Climate Plan. The group would meet yearly to review progress on actions to create an annual report, and to plan for the next year of climate action. They would also work to embed climate change into Saanich strategic, policy and regulatory documents (e.g., economic development strategy, financial plan, strategic plan, and Official Community Plan) and update them as new science and policy direction becomes available.

L1.5 Develop a risk register and monitoring platform

Develop a climate risk register and monitoring platform that integrates climate risks and actions to support shared accountability and to create a mechanism for tracking risks and actions over time.

STRATEGY L2:
BECOME A CLIMATE FRIENDLY EMPLOYER

L2.1 Implement a Climate Friendly Commuter Program

Implement a Climate Friendly Commuter Program that aims to achieve 100% sustainable commuting by Saanich staff (including by renewable-energy or zero-emission vehicles, public transportation and active transportation). Such a program will actively encourage staff to shift towards walking, cycling, public transit use and carpooling. Staff will conduct analyses to understand current commuting patterns among staff, identify potential barriers to climate friendly commuting, learn best practices, and examine a range of potential solutions, such as:

- Promoting public transit use to Saanich staff for commuting and appropriate work trips
- Implementing an employee loan program for personal e-bike purchases to be repaid on employee pay cheques (the employee would also pay the interest)
- Improving bike parking at all Saanich facilities to meet or exceed current bylaw requirements for new construction, with the consideration of replacing car parking with bike parking (rather than removing green space) and adding charging stations for e-bikes and e-scooters.

L2.2 Implement a training and capacity building program

Deliver targeted education programs for Saanich staff on climate adaptation and mitigation topics that are relevant to their responsibilities.

L2.3 Recognize innovation, successes and leadership

Continue to support a culture of sustainability by showcasing and celebrating innovation and successes.

STRATEGY L3:
TRANSITION TO AN EFFICIENT, RENEWABLY-POWERED FLEET

L3.1 Develop a fleet strategy to reduce corporate emissions

Develop a Fleet Strategy for public works vehicles that includes the transformation of Saanich's corporate fleet to 100% renewable energy. Considerations will be given to right-sizing the fleet, vehicle operation optimization, renewable fuel choices and emerging technologies.

L3.2 Convert all light-duty vehicles to zero-emissions vehicles

Continue to replace light-duty internal combustion fleet vehicles with zero-emissions vehicles, and build fleet charging stations.

L3.3 Develop an e-bike fleet program

Implement a pooled electric bike program for work trips.

L3.4 Review industry readiness to support medium- and heavy-duty fleet conversion pilot projects

Support pilot projects using renewable energy for our medium- and heavy-duty fleets, such as garbage trucks and fire engines. As a first step, review industry progress of medium- and heavy-duty electric vehicles and initiate a trial if feasible.

STRATEGY L.4:
TRANSITION TO EFFICIENT AND RENEWABLY-POWERED MUNICIPAL BUILDINGS

L4.1 Transition to highly efficient and renewably-powered municipal facilities

Improve efficiency and transition to renewable energy (including electricity from BC Hydro, renewable natural gas from FortisBC, solar thermal, solar photovoltaic and biomass sources) for space and water heating at municipal facilities through continuous improvement and implementation of Saanich's Strategic Energy Management Plan. Investigate energy resilience and self-sufficiency opportunities for our facilities (e.g., using trees from municipal lands as a biomass source).

L4.2 Pilot low-carbon materials in municipal construction

Continue to pilot materials low in embodied-carbon in new municipal construction projects.

L4.3 Showcase efficient, renewably-powered municipal buildings

Communicate renewable-energy and energy-efficient upgrades and features in municipal buildings to the public.

STRATEGY L5:
REDUCE WASTE AND GHG EMISSIONS FROM GOODS AND SERVICES

L5.1 Model a low-carbon diet through corporate catering

Lead by example with corporate catering at select District funded events by reducing food waste, reducing or avoiding high GHG food types, and providing educational information on a low-carbon diet to event participants.

L5.2 Develop a corporate Zero Waste Strategy

Develop and implement a corporate Zero Waste Strategy, including paper reduction, waste diversion, and water bottle refilling stations at Saanich facilities and public events.

L5.3 Update Saanich Sustainable Procurement Guidelines

Review and update Saanich Sustainable Procurement Guidelines with consideration of the GHG emissions impact from purchasing decisions.

5 Plan Implementation & Monitoring

5.1 Implementation Process

This Plan identifies over 130 actions associated with each of the six Focus Areas (outlined in Section 4) to meet the District of Saanich's climate goals. The tables in Section 5.3 outline implementation timelines and lead Saanich departments responsible for implementing each action.

Plan actions are focused primarily on the first ten years of Plan implementation (2020-2030) because we can most accurately predict and control this period of implementation and the climate emergency demands rapid, transformational change in the next ten years. The implementation plan is a living document and will be reviewed and adjusted periodically, if necessary, to ensure that the most impactful actions are pursued. By 2030, the Climate Plan will be completely updated to reflect new conditions, new challenges and new opportunities.

To guide implementation of the Climate Plan, and to ensure that climate action continues to be an important and integral part of District planning and priority-setting, an internal working group will be established with representation from the departments responsible for implementing the Climate Plan. This working group will meet at least once a year to evaluate actions from the previous year and plan actions for the coming three years. This working group will also lead preparation of an annual report card to evaluate progress on actions, as discussed in Section 5.2.

Recognizing that the District and our community do not have unlimited capacity or resources, actions have been prioritized. The criteria used for prioritization are discussed at the beginning of Section 5.3.

Implementation of this plan will require new resources. District staff will prepare and submit a financial request to Council, through the annual budgeting process, that identifies required resources for plan implementation, taking into account synergies with other District priorities and initiatives as well as potential external sources of funding.

5.2 Monitoring and Evaluation

Transparency and accountability will be key to the success of the Climate Plan. Our Plan monitoring and evaluation strategy includes:

- **Clear implementation:** Ensuring actions are clear, prioritized, time-bound and assigned to lead departments, as outlined in the Implementation Plan (Section 5.3)
- **Report card:** Publishing an annual "report card" to evaluate progress on actions, including new initiatives that respond to changing conditions (technology, opportunities, funding, science, etc.)
- **Indicators for resilience:** Measuring and reporting on Saanich's resilience to climate impacts
- **GHG inventory:** Publishing updates to the community GHG inventory at least every five years
- **Accountability groups:** Establishing internal (local government) and community accountability groups to advise and collaborate on corporate and community climate action implementation

ACTION	SUMMARY OF MONITORING & EVALUATION ACTIONS	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
1	Publish an annual "report card" on the progress of actions, and include updated actions in response to changing conditions and progress towards targets.	●	●	Planning	2020
2	Develop and report on resilience metrics and indicators.		●	Planning	2020-2021
3	Publish updates to the community GHG inventory at least every 5 years.	●		Planning	2022-2024
4	Update the Climate Risk Assessment in response to changing conditions.		●	Planning	2024-2029
5	Update the Saanich Climate Plan by 2030.	●	●	Planning	2024-2029

5.3 Implementation Plan

The following tables outline implementation timelines and lead Saanich departments for each action.

Climate actions are presented under each strategy for the Plan's six Focus Areas: 1. Mobility, 2. Buildings & Infrastructure, 3. Food & Materials, 4. Ecosystems, 5. Community Wellbeing, and 6. Leadership in District Operations.

Actions were prioritized based on the following criteria:

- Potential of GHG emission reductions (mitigation actions) and risk mitigation (adaptation actions)
- Level of control or influence the District has to achieve intended results
- Benefits and tradeoffs, where higher priority was given to those actions that had clear co-benefits aligned with other Saanich priorities
- Public acceptability (as demonstrated in Phase 2 public and stakeholder engagement)
- Timeliness (including urgency, window of opportunity based on funding or partnership opportunities, time required for action to have impact, readiness of technology or information)

Mobility

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
Strategy M1: Invest in active transportation					
M1.1	Accelerate the implementation of the Active Transportation Plan	●		Engineering	2020
M1.2	Pilot an electric bicycle incentive program	●		Planning	2020
M1.3	Expand the Active School Travel planning program	●		Engineering	2020
M1.4	Improve bike parking at existing buildings	●		Engineering	2020
M1.5	Explore integration between transit and other shared mobility providers	●		Engineering	2022-2024
M1.6	Support bike shares and other shared mobility services	●		Engineering	2020
M1.7	Support lower speed limits on residential streets	●		Engineering	Underway
Strategy M2: Prioritize transit-supportive policies and practices					
M2.1	Work with partners (VRTC, BC Transit) to accelerate service level improvement and increase transit mode share	●		Council	Underway
M2.2	Support increased residential density along public transit routes	●		Planning	2021-2022
M2.3	Make transit travel time-competitive	●		Engineering	2021-2022
M2.4	Investigate and consider updating off-street parking requirements to support a mode shift towards active transportation	●		Planning	2021-2022

Implementation Priority:

High Priority	Medium Priority	Low Priority

Mobility

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
M2.5	Advocate for increased funding for transit service expansion and improvement	●		Council	2020-2022
M2.6	Advocate for climate-informed ride hailing regulations	●		Planning	2020-2022
M2.7	Work with BC Transit to incorporate latest best practices and new technology needs	●		Engineering	2022-2024
M2.8	Develop policies and resources for parking management and enforcement	●		Building, Bylaw, Licensing and Legal	2024-2029
Strategy M3: Accelerate electric and renewable mobility					
M3.1	Create a community-wide Electric Mobility Strategy	●		Planning	Underway
M3.2	Require EV-ready infrastructure for new development	●		Planning	Underway
M3.3	Support EV infrastructure retrofits in existing buildings	●		Planning	Underway
M3.4	Expand public EV charging network	●		Planning	Underway
M3.5	Optimize the use of public EV charging stations	●		Planning	Underway
M3.6	Support “Right to Charge” legislation	●		Planning/ Council	2020
M3.7	Work with organizations in Saanich to reduce emissions from fleets	●		Planning	2022-2024

Implementation Priority:

High Priority	Medium Priority	Low Priority

Buildings & Infrastructure

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
Strategy B1: Require efficient, net-zero carbon new construction					
B1.1	Identify and remove municipal barriers to high-performance buildings	●		Planning	2020
B1.2	Accelerate adoption of net-zero carbon new construction	●		Planning	2020
B1.3	Require new construction to achieve upper steps of the BC Energy Step Code by 2025	●		Building, Bylaw, Licensing and Legal	2021-2022
B1.4	Support building industry capacity development	●		Building, Bylaw, Licensing and Legal	Underway
B1.5	Encourage the adoption of low-carbon materials in new construction	●		Planning	2021-2022
B1.6	Advocate for GHG performance metrics in the BC Building Code	●		Planning/ Council	2020-2021
B1.7	Require energy benchmarking for new Part 3 buildings	●		Planning	2021-2022
Strategy B2: Accelerate efficiency and renewable energy upgrades in existing buildings					
B2.1	Launch a Home Energy Retrofit Municipal Financing pilot project	●		Planning	Underway
B2.2	Phase out oil heating by 2030	●		Planning	2020

Implementation Priority:

High Priority	Medium Priority	Low Priority

Buildings & Infrastructure

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
B2.3	Carry out effective communications campaigns to promote conversion to renewable energy systems	●		Planning	2020
B2.4	Explore regulatory power to require efficiency and renewable energy upgrades	●		Planning	2020
B2.5	Increase top-up rebates for conversion from fossil fuel to renewable energy systems	●		Planning	Underway
B2.6	Develop a comprehensive building retrofit strategy	●		Planning	2020-2022
B2.7	Work with partners to support skills development	●		Planning	2021-2022
B2.8	Advocate for long-term, effective rebate programs	●		Planning/ Council	2020
B2.9	Advocate for provincial support on property assessed clean energy financing	●		Planning/ Council	2020
B2.10	Work with industry partners to support renewable energy retrofits	●		Planning	Underway
B2.11	Develop incentive tools to encourage commercial and multi-unit residential buildings to undertake deep energy retrofits	●		Planning	2020
B2.12	Work with the Province to prevent fuel switching from low-carbon to high-carbon energy sources	●		Planning/ Council	2020
B2.13	Participate in retrofit code development	●		Planning	2020
B2.14	Introduce voluntary energy benchmarking for existing buildings	●		Planning	2024-2029
B2.15	Advocate for home energy labelling and disclosure	●		Planning	2024-2029

Implementation Priority:

High Priority	Medium Priority	Low Priority

Buildings & Infrastructure

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
B2.16	Support mandatory recommissioning for existing Part 3 buildings	●		Planning	2024-2029
B2.17	Support mandatory energy and emissions benchmarking for existing Part 3 buildings	●		Planning	2024-2029
Strategy B3: Increase energy resilience and renewable energy supply					
B3.1	Support development of local Renewable Natural Gas production	●		Engineering	Underway
B3.2	Support the Province and utilities to produce sufficient renewable energy	●		Planning	2021-2022
B3.3	Develop a renewable energy guide for residents	●	●	Planning	2024-2029
B3.4	Work with the province and utilities to incentivize local renewable energy production	●		Planning	2024-2029
Strategy B4: Transition towards a climate-ready building stock					
B4.1	Develop strategies to preserve and enhance permeability and stormwater management		●	Engineering	2021-2022
B4.2	Develop a “programmed roof” policy	●	●	Planning	2021-2022
B4.3	Advocate for the incorporation of climate adaptation considerations into the BC Building Code		●	Planning	2020
B4.4	Encourage building design or retrofit measures to reduce impacts from heat waves and poor air quality events		●	Planning	2022-2024

Implementation Priority:

High Priority	Medium Priority	Low Priority

Buildings & Infrastructure

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
B4.5	Consider a rainwater collection system requirement in new development		●	Planning	2024-2029
B4.6	Encourage the implementation of engineered greywater systems		●	Planning	2024-2029
Strategy B5: Increase the resilience of Saanich's infrastructure and assets					
B5.1	Include climate change considerations in the corporate asset management system		●	Engineering	2021-2022
B5.2	Update engineering design specifications to account for future climate projections		●	Engineering	2021-2022
B5.3	Conduct flood hazard planning		●	Engineering	Underway
B5.4	Accelerate the completion of a stormwater master plan with climate change considerations		●	Engineering	2021-2022
B5.5	Investigate on-site stormwater management practices on private lands		●	Engineering	2024-2029
Strategy B6: Prepare for long-term sea-level rise					
B6.1	Complete sea-level rise mapping		●	Planning	Underway
B6.2	Increase sea-level rise knowledge and adaptation capacity in the community		●	Planning	2022-2024
B6.3	Develop a Coastal Adaptation Strategy		●	Planning	2022-2024

Implementation Priority:

High Priority	Medium Priority	Low Priority

Food & Materials

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
Strategy F1: Reduce the climate impact of food production and consumption					
F1.1	Reduce carbon emissions from local food production	●	●	Planning	2021-2022
F1.2	Encourage residents to choose low-carbon foods and reduce food waste	●	●	Planning	Underway
F1.3	Encourage food service establishments to reduce carbon emissions from their operations	●		Planning	2022-2024
Strategy F2: Move towards "lighting living" in Saanich					
F2.1	Reduce single-use plastics			Building, Bylaw, Licensing and Legal	Underway
F2.2	Develop and implement a Zero Waste Strategy	●		Planning	2022-2024
F2.3	Work towards zero waste for large public events	●		Parks, Recreation & Community Services	2022-2024
F2.4	Work with partners on circular economy initiatives	●		Planning	2022-2024
F2.5	Mobilize residents and businesses towards "lighter living"	●		Planning	2020-2022
F2.6	Advocate for expansion of extended producer responsibility programs	●		Planning	2024-2029
F2.7	Improve monitoring of and compliance with a recyclable materials ban	●		Engineering	2024-2029

Implementation Priority:

High Priority	Medium Priority	Low Priority

Food & Materials

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
Strategy F3: Improve the resilience and self-sufficiency of the local food system					
F3.1	Accelerate the implementation of Agriculture and Food Security Plan		●	Planning	2021-2022
F3.2	Support an Agricultural Adaptation Strategy for Vancouver Island		●	Planning	2021-2022
F3.3	Increase capacity for local food production	●	●	Parks, Recreation & Community Services	2022-2024
F3.4	Increase adoption of water-wise agricultural practices		●	Planning	2024-2029

Implementation Priority:

High Priority	Medium Priority	Low Priority

Ecosystems

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
Strategy E1: Enable natural systems to thrive and adapt					
E1.1	Double the rate of planting trees to enhance the urban forest	●	●	Parks, Recreation and Community Services	2020
E1.2	Increase stewardship tools for private land owners		●	Planning	2020
E1.3	Implement “Natural Intelligence” parks program		●	Parks, Recreation and Community Services	Underway
E1.4	Develop an operational approach to tree retention and replacement during development	●	●	Planning	2020
E1.5	Protect and expand the urban forest	●	●	Parks, Recreation and Community Services	2020
E1.6	Develop and implement a Biodiversity Conservation Strategy		●	Planning/ Parks, Recreation and Community Services	2020-2022
E1.7	Expand, connect and restore natural areas		●	Parks, Recreation and Community Services/Planning	2021-2022
E1.8	Partner with school districts on environmental education	●	●	Parks, Recreation and Community Services/Planning	Underway
E1.9	Explore carbon dioxide removal measures with partners	●		Planning	2020
E1.10	Prevent planting and spread of invasive plants		●	Parks, Recreation and Community Services/Planning	2021-2022
E1.11	Improve monitoring of ecosystem health		●	Planning	2022-2024

Ecosystems

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
E1.12	Develop principles for assisted migration		●	Planning	2022-2024
E1.13	Improve compliance with new bylaws and policies		●	Planning	2022-2024
Strategy E2: Protect and manage natural assets as critical infrastructure					
E2.1	Evaluate services provided by natural assets	●	●	Engineering/ Parks, Recreation and Community Services	2021-2022
E2.2	Develop a strategy to maintain services provided by natural assets	●	●	Engineering/Parks, Recreation and Community Services	2021-2022

Implementation Priority:

High Priority | Medium Priority | Low Priority

Community Wellbeing

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
Strategy C1: Ensure emergency and community health services keep pace with climate change					
C1.1	Retrofit municipal facilities to increase cooling and air filtration capabilities		●	Engineering	2020-2022
C1.2	Undertake urban heat mapping		●	Planning	2022-2024
C1.3	Work with partners to ensure coordinated response during severe weather events		●	Fire	2022-2024
C1.4	Update Wildfire Protection Plan and Interface Fire Hazard Development Permit Area		●	Fire	2022-2024
C1.5	Develop Saanich-specific wildfire prevention materials		●	Fire	2022-2024
C1.6	Work with service providers to vulnerable populations to develop adaptation strategies		●	Planning	2024-2029
C1.7	Work with partners to minimize impacts from vector-borne diseases		●	Fire	2024-2029
C1.8	Review severe weather protocols for vulnerable populations		●	Fire	2024-2029

Implementation Priority:

High Priority | Medium Priority | Low Priority

Community Wellbeing

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
Strategy C2: Empower Saanich residents and businesses to take climate action					
C2.1	Implement a tangible and hands-on neighborhood-level program	●	●	Planning/ Fire/Parks, Recreation and Community Services	2020
C2.2	Host an annual climate fair	●	●	Planning	2020
C2.3	Provide educational programming and workshops	●	●	Planning	2020
C2.4	Carry out a communications campaign on urgent climate action	●	●	Planning	2020
C2.5	Host a Community Climate Collaborative	●	●	Planning	2020
C2.6	Develop an equity tool	●	●	Planning	2020
C2.7	Develop a Saanich climate information webpage	●	●	Planning	2020
C2.8	Seek opportunities to work with neighboring First Nations	●	●	Planning	2020
C2.9	Explore a bulk-purchase program	●	●	Planning	2022-2024
C2.10	Develop a community grants program	●	●	Planning	2024-2029
C2.11	Collaborate with researchers and post-secondary institutions	●	●	Planning	2024-2029
C2.12	Work with the arts community	●	●	Planning/ Parks, Recreation and Community Services	2024-2029

Leadership in District Operations

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
Strategy L1: Integrate climate action into Saanich processes and decision-making					
L1.1	Establish a new Climate Action Reserve Fund	●	●	Finance	2020
L1.2	Include a climate alignment scorecard in reports to Council for development projects	●	●	Planning	2020
L1.3	Establish a carbon price policy	●		Planning	2020
L1.4	Create a climate leadership group	●	●	Planning	2020
L1.5	Develop a risk register and monitoring platform		●	Planning	2020
Strategy L2: Become a climate friendly employer					
L2.1	Implement a Climate Friendly Commuter Program	●		Planning	2020
L2.2	Implement a training and capacity building program	●	●	Planning	2020
L2.3	Recognize innovation, successes and leadership	●	●	Planning	Underway
Strategy L3: Transition to an efficient, renewably powered fleet					
L3.1	Develop a fleet strategy to reduce corporate emissions	●		Engineering	2020
L3.2	Convert all light-duty vehicles to zero-emissions vehicles	●		Engineering	Underway
L3.3	Develop an e-bike fleet program	●		Planning	2020
L3.4	Review industry readiness to support medium- and heavy-duty fleet conversion pilot projects	●		Engineering	2022-2024

Implementation Priority:

High Priority	Medium Priority	Low Priority

Leadership in District Operations

ACTION	DESCRIPTION	MITIGATION	ADAPTATION	LEAD DEPARTMENT	INITIATION TIMELINE
Strategy L4: Transition to efficient and renewably-powered municipal buildings					
L4.1	Transition to highly efficient and renewably-powered municipal facilities	●		Engineering/ Planning	Underway
L4.2	Pilot low-carbon materials in municipal new construction	●		Engineering	Underway
L4.3	Showcase efficient and renewably-powered municipal buildings	●		Planning	Underway
Strategy L5: Reduce waste and GHG emissions from goods and services					
L5.1	Model a low-carbon diet through corporate catering	●		Planning	2020
L5.2	Develop a corporate Zero Waste Strategy	●		Planning	2024-2029
L5.3	Update Saanich Sustainable Procurement Guidelines	●		Planning	2024-2029

Implementation Priority:

High Priority	Medium Priority	Low Priority

Glossary

Adaptation	Actions taken to help our community cope with or adjust to a changing climate. Contrasted with mitigation.
Assisted Migration	Human intervention to assist in the movement of organisms in response to climate change to locations deemed more suitable.
BC Energy Step Code	The BC Energy Step Code is an optional compliance path in the BC Building Code that local governments may use, if they wish, to incentivize or require a level of energy efficiency in new construction that goes above and beyond the requirements of the BC Building Code. Builders may voluntarily use the BC Energy Step Code as a new compliance path for meeting the energy-efficiency requirements of the BC Building Code. See https://energystepcode.ca/
Biofuel	A fuel (solid, liquid or gas) derived from renewable biological sources that can be replenished readily, unlike fossil fuels that are replenished on a much longer timescale. Biofuels can include biodiesel, syngas, wood, bio-ethanol, and other fuels.
Carbon Dioxide Equivalent	A unit that allows different greenhouse gases, which have different global warming potentials over a set amount of time, to be compared against each other.
Carbon Sequestration	Natural or technological processes that provide longer-term storage of carbon dioxide from the atmosphere.
Circular Economy	Minimizing waste and using waste as a resource (in contrast to a linear economy from production to use and disposal).
Climate Change	In the context of this report, climate change refers to the effects of burning fossil fuels and emitting other greenhouse gasses (including methane and refrigerants), which trap increasing amounts of the sun's energy in our atmosphere, causing potentially serious and rapid changes in the earth's climate.
Climate Projections	Anticipated changes in temperature, precipitation, extreme weather events, etc., based on climate models.

Consumption-Based Emissions Inventory	A tally of the greenhouse gas emissions resulting from production and consumption of goods and services within a region, regardless of where those goods and services are produced.
Embodied Emissions	The greenhouse gas emissions produced in creating and delivering a particular material (e.g., infrastructure or consumable goods), including the energy used for extraction of raw materials, manufacturing and transportation of the end product.
Fossil Fuel	Fuels such as coal, gasoline, natural gas, oil, diesel, etc., that are sourced from organic materials formed over a long geological time period.
Global Warming Potential	The Global Warming Potential metric examines the ability of each type of greenhouse gas to trap heat in the atmosphere, compared to carbon dioxide (CO_2) and measured over a specified time horizon.
Greenhouse Gas	A gas that contributes to climate change by trapping heat in the earth's atmosphere, including carbon dioxide, methane, nitrous oxide, and fluorinated gases.
Mitigation	Actions taken to reduce climate change, primarily by reducing greenhouse gas emissions—contrasted with adaptation.
Net-Zero Carbon	For the purposes of this report, net-zero carbon for our community means that territorial (GPC Basic +) greenhouse gas emissions minus carbon sequestration equals zero on an annual basis.
Net-Zero Energy	In the context of a building, it is a building that produces as much energy as it consumes on an annual basis.
Renewable Energy	Renewable energy is energy derived from natural processes (e.g., sunlight and wind) that are replenished at a faster rate than they are consumed.
Renewable Natural Gas	Renewable natural gas is biogas (primarily methane) that is produced from decomposing organic waste (from landfills, agricultural waste and wastewater from treatment facilities) and then purified to be used as an energy source.
Resilience	Capacity to withstand and/or recover from hazards, risks and challenges associated with a changing climate.
Retrofit	To improve an existing building's energy performance (including mechanical systems, such as space and water heating systems), and building envelope (including insulation, windows and doors, and air sealing).

Solar Photovoltaic System Panels that convert the sun's energy into electricity.

Solar Thermal System A system that harvests the sun's heat, usually for domestic water heating.

Territorial Emissions Inventory A tally of the greenhouse gas emissions in a specific geographical region. In Saanich's case, we use the Global Protocol for Community-Scale Basic Plus (GPC Basic+) methodology. With regard to emissions from transportation, we choose to calculate emissions from Saanich registered vehicles.

Climate Plan Terminology	GPC Basic+ Terminology
Mobility	Transportation
Buildings and Infrastructure	Stationary Energy
Waste	Waste
Other	AFOLU and IPPU

Zero Emission Vehicle A vehicle that produces no tailpipe exhaust, such as a battery electric vehicle.

Acroynyms

AFOLU	Agriculture, Forestry, Other Land Use (GPC Basic+ GHG Inventory category)
BAU	Business as usual
CBEI	Consumption-Based Emissions Inventory
CO_2e	Carbon dioxide equivalent
GHG	Greenhouse gas
GPC	Global Protocol for Community-Scale Greenhouse Gas Emission Inventories
ICE	Internal combustion engine (e.g., gas-powered car)
IPPU	Industrial Processes and Product Use (GPC Basic+ GHG Inventory category)
RNG	Renewable Natural Gas

The preparation of the Climate Plan: 100% Renewable and Resilient Saanich was carried out with the assistance from the Government of Canada and the Federation of Canadian Municipalities. Notwithstanding this support, the views expressed are the views of the authors, and the Federation of Canadian Municipalities and the Government of Canada accept no responsibility for them.