

**DRAFT**

# **Climate and Environment Strategy**

**DRAFT**

## LAND ACKNOWLEDGMENT

The City of North Vancouver acknowledges that it is situated on the ancestral, traditional and unceded territories of the Sk̓w̓x̓w̓7mesh (Squamish) and Səlilwətał (Tsleil-Waututh) Nations. These Nations remain deeply connected to their lands and waters and as we build community here it is critical we acknowledge this has been their home since time immemorial. We thank them for sharing this land with us and for their ongoing partnership with the City on shared priorities.

## A COMMITMENT TO TRUTH AND RECONCILIATION

The City is committed to Truth and Reconciliation. We humbly recognize that we need to learn the truth about Indigenous history in Canada and are at the beginning of our journey of reconciliation with First Nations.

The City will work collaboratively, cooperatively, and respectfully with the Sk̓w̓x̓w̓7mesh (Squamish) and Səlilwətał (Tsleil-Waututh) Nations on policy, projects, programs, and services at the City and incorporate the Truth and Reconciliation Commission's Calls to Action, support the principles and objectives of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), and the Province of British Columbia's Declaration on the Rights of Indigenous Peoples Act (DRIPA).

## APPRECIATION AND THANKS

The Climate and Environment Strategy was developed with input and support from many residents, businesses, rights holders, stake holders, partners, non-profit organizations, community experts and the Climate and Environment Advisory Task Force, City staff, and more. The City is grateful for the efforts and time provided by everyone in working to support our environmental resilience and community sustainability through this work.

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# 1. What is the Climate and Environment Strategy?

The City is facing an unprecedented climate and environmental crisis. To navigate these challenges, this Strategy will help build a resilient and low carbon community where everyone thrives. The Strategy will help us mitigate and adapt to climate change, and to promote a healthy environment. Resilience works to address all of these challenges – mitigation, adaptation, and health.

This plan is a guide for staff and all community members on our response to the climate and nature crises. It recognizes the role of the City, other levels of government, businesses and residents in taking action, and considers that different people will need varying levels of support to participate. Our community benefits from a rich diversity in the backgrounds, cultures and languages of residents, and the Strategy aims to reflect the needs and priorities of a range of voices.

This Strategy will be our guide for making decisions that foster a resilient urban and natural environment, today and over the coming decade.

## WHAT DOES THE STRATEGY INCLUDE?

The City of North Vancouver Climate and Environment Strategy will provide guidance to improve our community's resilience over the coming decade.

In order to implement effective change we need to understand the current situation and where we want to be. This information is presented in the “Big Picture”.

“What Are We Trying to Achieve” articulates the outcomes that we will achieve over the course of the plan.

This Strategy includes four pathways focused on enhancing and supporting our community, the environment, and reducing carbon emissions. Each is connected to and supports one another, like a series of interlocking building blocks. Each pathway provides clear policy directions and a series of objectives that communicate expectations and guide decision-making while remaining nimble within an evolving context.

The implementation of this Strategy requires support and action from City Council, all City departments, and the community at large. There is something for everyone to participate in and contribute to!

## STRATEGY DEVELOPMENT PROCESS

Development of this Strategy has involved several steps to get us to where we are today:

- **Phase 1:** We started the process by undertaking a wide range of research to understand how we're doing, where we need to improve and what opportunities and challenges we face.
- **Phase 2:** We released our proposed Strategy Framework structure. This framework supported engagement with the public and interested parties to understand values, priorities and perspectives and to refine our Strategy.
- **Phase 3:** We're currently in Phase 3 of the strategy development process. We are finalizing a draft Strategy that incorporates feedback from our previous engagement and incorporates input from Climate and Environment Advisory Task Force and a peer review process.
- **Phase 4:** Share the draft Strategy for further community feedback.
- **Phase 5:** Finalize the Strategy and implement it.

## WHAT WE HAVE HEARD SO FAR

We received feedback through listening sessions with equity-deserving groups, stakeholder workshops, and survey responses during the first round of engagement on this Strategy. The following themes emerged in the feedback received and shaped the draft Strategy.

- **High level of concern about the climate and nature crises:** There is deep concern about the future of the planet among community members.
- **Support for urgent action:** A high level of support was expressed for the urgency communicated in the Strategy framework, and encouragement to go further with mitigating climate and environmental impacts.
- **Desire to see stronger emphasis on adaptation:** In light of recent storms, flooding, air quality, and heat wave events, a stronger emphasis on climate resilience and adaptation is needed in this Strategy.
- **Equity is important:** Respondents expressed concerns about the accessibility of low carbon technologies and the impacts of climate change on vulnerable populations.
- **Reconciliation is important:** There was strong support for this Strategy to be developed with early and ongoing input from local First Nations and for actions to be informed by Indigenous knowledge.
- **All sectors need support in low carbon transition:** Consideration should be given to the range of supports needed to achieve Strategy objectives for different sectors in the City including businesses, organizations, renters, and homeowners.

# 2. The Big Picture

## WE ARE IN A CRITICAL DECADE

### A WINDOW FOR ACTION

Greenhouse gas emissions must peak by 2025 and be nearly cut in half by 2030 to avoid devastating and irreversible impacts from climate change. The most recent reports from the [Intergovernmental Panel on Climate Change \(IPCC\)](#) make clear that immediate and deep emissions reductions across all sectors are needed to limit warming to 1.5°C above pre-industrial levels, and secure a livable future.

At the same time, urgent action is needed to adapt to the impacts we are already beginning to experience. Increased heatwaves, extreme weather events, droughts and floods are affecting human wellbeing, biodiversity and infrastructure.

### GLOBAL MOMENTUM

Global momentum has been building since 2015 when 195 countries signed the Paris Agreement to commit to limiting warming to well below 2°C. Countries' current pledges represent the first time we have been on track to limit warming below 2°C.

Whilst global pledges are to limit warming well below 2°C, it is still possible for us to achieve the emissions reductions needed to limit warming to 1.5°C. This means no investment in new fossil fuel development, and rapid expansion of clean and efficient energy technologies through electrification. Many countries have been moving to clean energy. However, the transition to renewable energy sources must accelerate. We need to act now, so we can limit warming to 1.5°C.

We all have a role to play in the transition to a low carbon economy and resilient natural environment. Cities are significant contributors to climate change and uniquely equipped for emissions reductions. We can lower energy consumption by building compact cities in which it is convenient to walk or roll to our daily needs, and by constructing and retrofitting buildings to be highly energy efficient. We can reduce fossil fuel demand through electrification of transportation and buildings. We can increase the resiliency of biodiversity by restoring and enhancing natural assets, such as the urban forest.

### EQUITY: FRONT AND CENTRE

People's health, livelihood, energy security and personal property are being adversely affected by heatwaves, storms, drought, and flooding, along with slower stresses such as sea level rise and

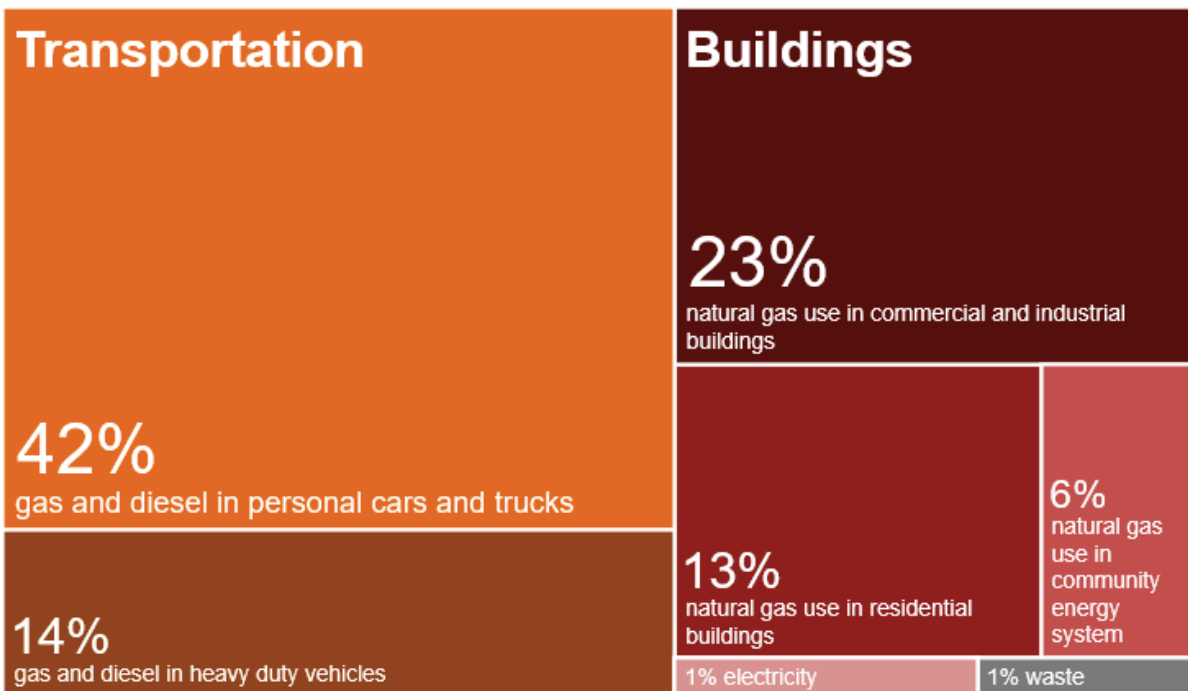
ocean acidification. The impacts of climate change are much greater for our most vulnerable and marginalized residents, and may be even be more severe in other areas of the province. Residents that are affected by systemic vulnerabilities and inequities – including racialized/people of colour, lower income communities, immigrant and refugee communities, people with disabilities and older adults – are often at greater risk from the impacts of climate change. As well, our community needs to consider that livability in other parts of the province, country, or globe may be more severe and result in an increase climate-related migration.

It is paramount that priorities, investment and action is directed towards creating a more inclusive and equitable community.

*The next few years are critical. The decisions we make today will determine our future.*

## OUR CARBON POLLUTION TODAY

In the City, the majority of carbon pollution comes from natural gas use in buildings and gas and diesel use in vehicles. In 2020, a total of 259,422 tCO<sub>2</sub>e<sup>i</sup> of greenhouse gas emissions were produced in the City. This equates to 4.4 tCO<sub>2</sub>e per person, which is lower than the regional average of 5.3 tCO<sub>2</sub>e/person<sup>ii</sup>, but higher than many other leading cities around the world.



### EMISSIONS FROM TRANSPORTATION

Emissions from transportation come from gas and diesel use in vehicles for the movement of goods and people, with the majority being attributed to personal cars and trucks. Transportation is the largest source of emissions in the City, accounting for 56% of total community-wide emissions.

Today, 70% of personal trips in the City are made by vehicles, compared to 30% by walking, cycling and transit<sup>iii</sup>. The majority of trips stay local to the North Shore, with an average of 15km driven by City residents each day.

### EMISSIONS FROM BUILDINGS

Buildings are the second largest source of emissions in the City, behind transportation. Most emissions from buildings in the City come from using natural gas to heat space and water.

Most large buildings constructed in the City since 2003 are heated by the Community Energy System, run by the Lonsdale Energy Corporation (LEC). While LEC has renewable energy sources in its system, including the solar array on the library and ground source heat recovery, most of the system is currently powered by natural gas boilers.

The changing climate means buildings have different needs to maintain comfort. With warmer summers and increasing heat events, cooling is becoming a necessity. As we make our buildings more efficient, ventilation systems become important to maintain indoor air quality, especially when windows need to be closed during wildfires.

### CONSUMPTION-BASED EMISSIONS

We also produce carbon pollution outside of City boundaries from the goods we consume, the trips we take and the materials we use. Our choices have impacts outside of the City from the extraction, manufacturing, transportation and disposal of resources. It is estimated that we produce approximately twice as much **consumption-based** emissions compared to the emissions we generate in the City<sup>iv</sup>. The main sources of these emissions are food, transportation (including air travel) and building materials.

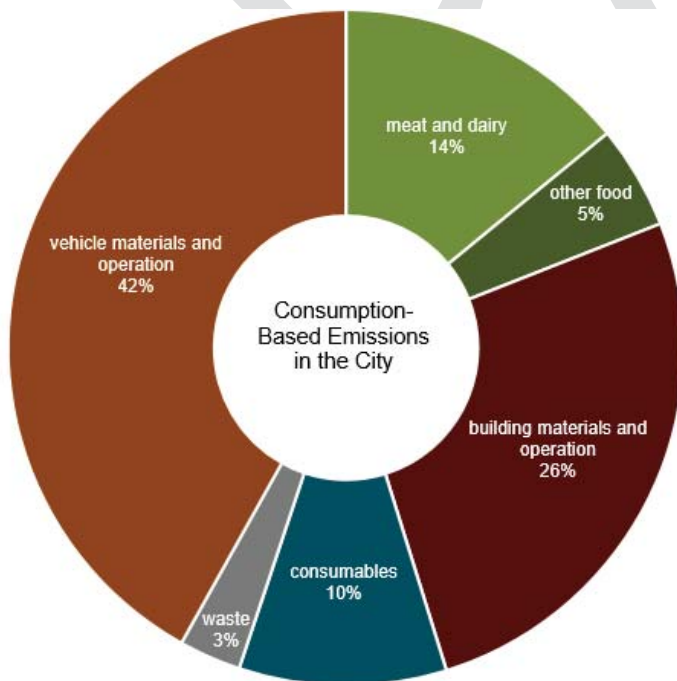


Figure 1 Consumption-based emissions in the City of North Vancouver



## THE NATURAL ENVIRONMENT TODAY

### WHAT DO WE MEAN WHEN WE SAY NATURAL ENVIRONMENT?

The natural environment encompasses naturally occurring elements and living creatures – including ourselves. The local natural environment – from the forests in the surrounding mountains, to the streams and ravines, down to our shoreline – shapes and nourishes our City. The City's trees, gardens, and landscaped areas provide important habitat for flora and fauna as well as providing key [ecosystem services](#) that keep our City functioning. We have a shared responsibility to care for the natural environment, which sustains us.

### TREES

The City's urban forest includes all of the trees and supporting vegetation on both public and private lands, and are crucial habitat for the living creatures that share our community. Trees provide numerous benefits to our community including sequestering carbon, cleaning the air, capturing rainwater, and cooling our environment. The City monitors the amount of tree canopy coverage that exists within our boundaries.

The City's canopy coverage has been stable at 20% since at least 2007; this number is comparable to other highly urbanized and compact communities, but below the regional average. However, our forest is facing more challenges – through high temperatures, longer periods of drought, and pests – and will need additional support and care to stay healthy and productive.

### STREAMS

The City's streams – Mackay Creek, Mosquito Creek, and Wagg Creek – flow through and help to shape our urban fabric. These streams are habitat for insects, fish and other animals, help us to manage our stormwater effectively, and provide residents with access to nature that supports physical and mental health.

The City uses a monitoring framework to track water quality. One of the ways stream health is monitored is by measuring the amount and diversity of stream insects which are otherwise known as benthic invertebrates. The presence of benthic invertebrates has increased in recent years – mostly in response to improved stormwater management efforts. Despite these positive trends, increased pressure from a growing population, more extreme weather events and rising temperatures mean more must be done to mitigate negative impacts and improve the resiliency of streams in the City.

### BIODIVERSITY

Biodiversity refers to the variety and number of species in an area and is used as an indicator of the health and integrity of ecosystems. The level of biodiversity generally increases with the size and connectivity of an area, diversity of habitat features, distance from human disturbances,

access to water, and the abundance of different types of food and cover. The City’s ravine and forested areas – such as Heywood and Greenwood Parks – support relatively high levels of biodiversity while manicured parks, such as Victoria Park or Grand Boulevard also support some biodiversity.

## OUR PROGRESS

### REDUCING CARBON POLLUTION THROUGH CITY DESIGN

Total emissions generated in the City have been consistent since 2007 despite our population growing by 20%. Our per capita emissions have decreased significantly over the last two decades, and are lower than the regional average, primarily because of our urban form. Higher density housing near transit corridors and a mix of uses is less emissions-intensive than lower density housing because less energy is required to heat these homes and residents are less likely to rely on a vehicle. As a result, per capita emissions from people living in high density housing can be less than half that of those living in low density housing<sup>v</sup> (see Figure 2). As our population has grown, we have accommodated much of this growth by expanding our multi-family building stock<sup>vi</sup> (see Figure 3), leading to less energy use per person.

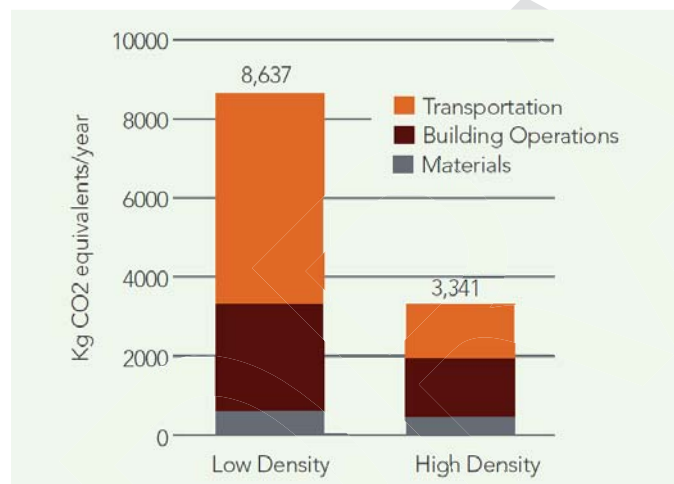


Figure 2 Emissions by building type



Figure 3 Comparison of the City’s housing stock by type from 2001 to 2021

## OUR FUTURE

***Climate change is already impacting the City, and will be more severe in the future. Even if we eliminate carbon pollution globally today, the effects of climate change would impact the world for generations.***

Climate change is one of the biggest challenges our society currently faces. It is disrupting local and global economies, the surrounding ecosystems, our physical infrastructure, and our health. More extreme events are increasing in frequency with recent notable local events such as 2021's summer heat dome, and major floods only a few months later that closed roads to and from the region.

There is no one easy solution to navigating this complex problem. We do know that in order to decrease the impact for our generation and generations to come, we need to become carbon neutral as quickly as possible.

By 2050, we can expect that climate change will be affecting our region in the following ways<sup>vii</sup>:

- **Warmer temperatures with a near doubling of days over 25°C by the year 2050, and an increase in nights with temperatures over 20°C**
  - Hotter temperatures and more wildfires will increase the risk of respiratory and heat-related illness, especially in vulnerable populations.
- **Drier summers with a 16% decrease in summer rainfall by the year 2050**
  - Drier summers and an expected 62% decreased snowpack could put strain on our drinking water supply, and threaten native plants and animals' ability to thrive.
- **More extreme precipitation events in non-summer months**
  - Extreme rainfall events will challenge infrastructure capacity, and result in more frequent sewer overflows and unplanned discharge to receiving waters.
- **Sea level rise to 50cm by year 2050 and 1m by year 2100**
  - Sea level rise and storm surges will increase the risk of flooding.

The best way we can adapt to and mitigate these impacts is by following Our Pathway to Resilience.

## OUR PATHWAY TO RESILIENCE

Climate resiliency encompasses mitigation and adaptation, which need to work hand-in-hand. Mitigation means reducing our carbon pollution through our Low Carbon Pathway. Adaptation means ensuring we are prepared for a changing climate, so everyone in our community can thrive.

### THE LOW CARBON PATHWAY

The Official Community plan indicates that we should reduce our carbon emissions to 50% of 2007 levels by 2050. We know now that this reduction is inadequate. Through the CES we are presenting a new target of net zero by 2050. The City has determined our Low Carbon Pathway to achieving our climate targets by modeling the changes needed to achieve the necessary

emissions reductions. The Low Carbon Pathway shows that transformational change across all sectors is needed to achieve net zero by 2050.

Without making any changes, the Business as Planned projection indicates that emissions will decrease 10% by 2030 and 43% by 2050 as a result of actions already adopted by the City and senior levels of government. In particular, emissions are expected to decline from the transportation sector as a result of BC's electric vehicle sales targets. These reductions are steps in the right direction, but more action is needed to achieve our climate targets.

Shifting from fossil fuel-powered buildings and transportation to renewable electricity is central to the Low Carbon Pathway. Though it won't be easy, we know that the tools and technologies exist today to make the Low Carbon Pathway possible through collective action from all levels of government, the private sector and individual choices.

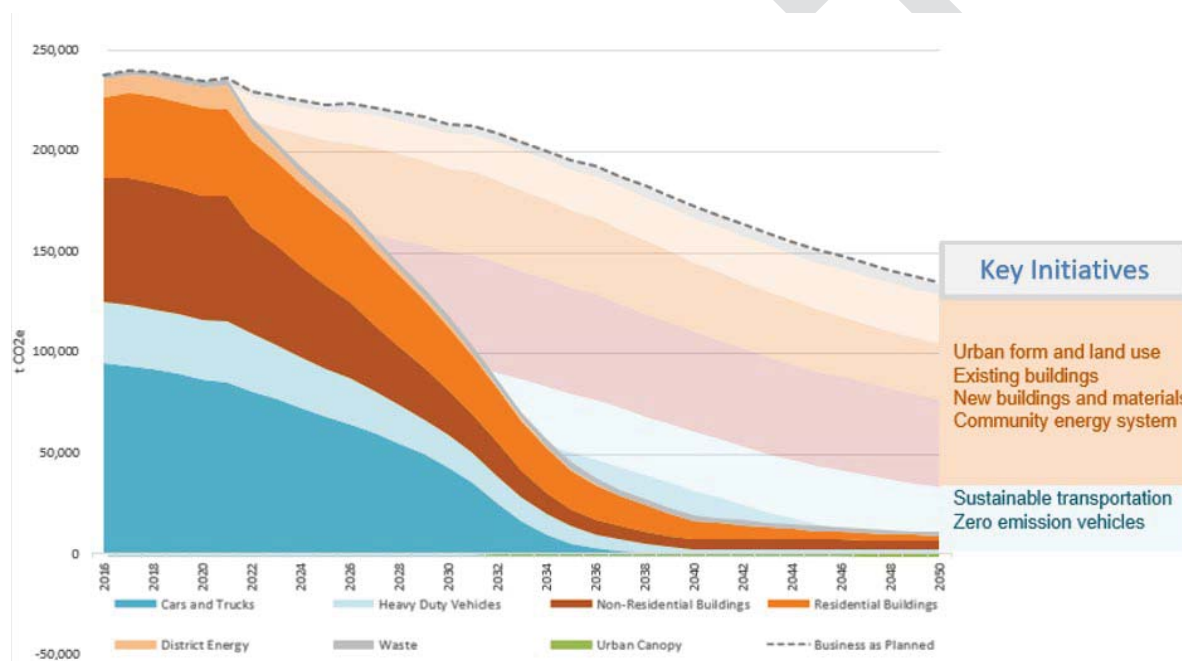


Figure 4 City of North Vancouver Low Carbon Pathway

## CLIMATE ADAPTATION

Climate change is occurring now; it is not just a future event. Even on our pathway to net zero, we can still expect 1.5°C or more of global warming. As the climate continues to warm, the City will experience an increase in severity and frequency of extreme weather. The community, biodiversity, infrastructure, and the natural environment will be affected. Understanding risks and our capacities can support climate adaptation. Taking action now will help to lessen human and natural losses.

There are many actions that individuals, neighbourhoods, and workplaces can take to adapt to a changing climate. It will be important for us all to support one another, and to understand that we all play a part in climate adaptation. This Strategy also outlines actions the City will take to support adaptation in an equitable manner.

## THE CITY'S POLICY LANDSCAPE

To further support the directions in this Strategy it is helpful to understand the City's broader policy landscape and how the different policy documents relate to one another.

### ABOUT THE OCP

The City's main city-building policy document is the Official Community Plan (OCP).

Official community plans describe the long term vision of communities and are governed by the Local Government Act. They are a statement of objectives and policies that guide decisions on municipal planning, investment and land use management.

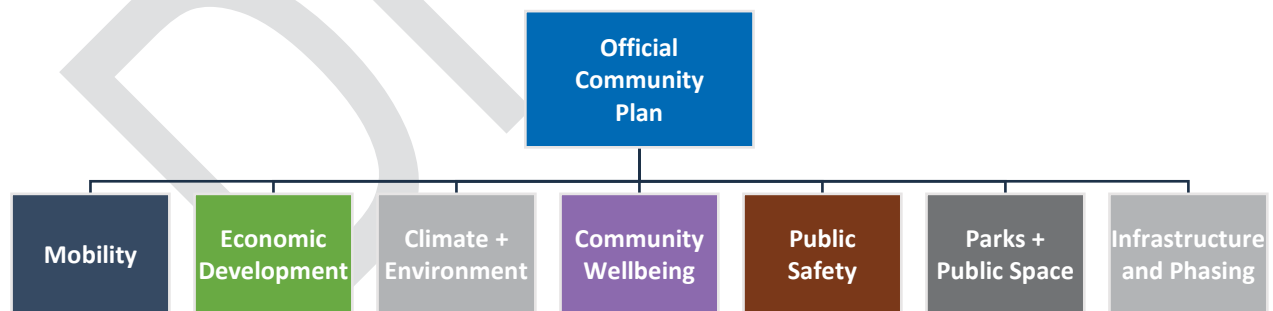
OCP's must include statements or map designations for existing and future land uses, housing policies, community greenhouse gas emissions targets and policies, existing and future public facilities, phasing for major roads, sewer and water systems, and restrictions for land that is subject to hazardous conditions or that is environmentally sensitive.

The City's **Vision**, as stated in the Official Community Plan (2014):

***"In 2031, the City of North Vancouver will be a vibrant, diverse and highly livable community that is resilient to climate or other changes, and sustainable in its ability to prosper without sacrifice to future generations."***

### THE FUTURE CITY POLICY LANDSCAPE

To support the OCP and its vision for the City, we are developing a number of strategies that will guide our next decade of planning, decision-making, and action in key areas:



## ***People + Place Based***

To ensure that each of the strategies reflect the City's values and priorities, the directions and objectives and their subsequent actions are vetted or filtered through the guiding principles of the OCP and the City's Financial Plan, Corporate Business Plan, and Council's Strategic Plan.

## REGIONAL POLICY

Beyond the City of North Vancouver, there are external policy documents that influenced the development of this Strategy in an effort to align and achieve common objectives:

- CLEAN BC ROADMAP TO 2030 is the BC government's plan to achieve its 2030 target of reducing emissions by 40% compared to 2007 levels. The plan lays out a set of actions to transform BC's economy by shifting away from fossil fuels and towards renewable energy, with tailored approaches for each sector. This Climate and Environment Strategy aims to coordinate with the commitments and proposed actions in this plan as they relate to emissions from buildings, transportation, and energy production.
- CLIMATE 2050 is Metro Vancouver's strategic framework to coordinate local government efforts and demonstrate bold leadership in responding to climate change. The framework is supported by several sector-focused roadmaps. This Climate and Environment Strategy follows guidance from these roadmaps that support Climate 2050 and will continue to work closely with Metro Vancouver and local jurisdictions as further guidance is developed on this program.
- The CLEAN AIR PLAN is Metro Vancouver's air quality and greenhouse gas management plan. Actions in the plan will reduce air contaminant emissions and impacts, including greenhouse gases in the near-term and support a commitment to be a carbon-neutral region by 2050. This Climate and Environment Strategy has aligned its air pollution and carbon pollution targets with this plan, and follows a similar set of actions with particular emphasis on reducing emissions in the transportation and building sectors.
- METRO 2050 is Metro Vancouver's regional growth strategy. It is the vision for accommodating anticipated future growth to the region with considerations for diverse and affordable housing, transit and mobility, resilient employment, protected industrial, ecological, and agricultural lands, and the impacts of a changing climate. Metro 2050 sets a goal for achieving zero emissions by 2050, with an interim step of reducing greenhouse gas emissions from buildings by 45% by 2030. This Climate and Environment Strategy supports emission reduction targets of Metro 2050, as well as other goals to protect and enhance natural features and their connectivity; encourage land use and transportation infrastructure that reduce energy consumption and greenhouse gas emissions, and improve air quality; and encourage land use and transportation infrastructure that improve the ability to withstand climate change impacts and natural hazard risks. IPCC SIXTH ASSESSMENT REPORT is a global report on climate change with contributions from three working groups and a synthesis report. This report assesses scientific, technical, and socio-economic information concerning climate change, including projections. This report states that it is only possible to avoid warming over 1.5°C through massive and immediate cuts to carbon pollution and to reach net zero by 2050.



# 3. What are we trying to achieve?

## *A resilient and low carbon community where all people and nature thrive.*

Our vision acts as an aspirational guide to the Strategy, and is supported by objectives and our pathways. It paints a picture of a healthy, green and low carbon City that is well-equipped to navigate a rapidly changing future for generations to come, and where the benefits of a clean environment are shared by everyone.

With a focus on:



**NATURE**



**EMISSIONS**



**URGENCY**

## **NATURE**

*We recognize the value of watersheds and ecosystems in the City and the need to protect, restore, and enhance these natural areas.*

Our health, wellbeing, and prosperity are linked to the natural environment. We can improve our social and environmental resilience through planning and regulation, an improved relationship to the environment, and working closely with Indigenous people who have been stewards of the land since time immemorial.

## **EMISSIONS**

*We mitigate our climate impact by changing our buildings and the way we move to achieve net zero emissions by 2050.*

We have a limited window of opportunity to reduce carbon pollution, and avoid severe and irreversible impacts. Our City needs to act alongside other jurisdictions around the world to be leaders in reducing carbon pollution.

## **URGENCY**

*We are leaders and prepared for rapid changes to adapt our community to current and expected climate impacts.*

By growing a culture of climate leadership, we can inspire transformative change that extends beyond our boundaries. Working together, we can adapt to our changing climate now and into the future.



# 4. The Path Forward

## WHAT DOES THE PATH FORWARD LOOK LIKE?

This section includes four pathways, each with clear directions and objectives that will help us realize a resilient and low carbon community where all people and nature thrive.

The pathways include:

- 1: Less Grey, More Green**
- 2: Climate Resilient Buildings**
- 3: Connected Neighbourhoods**
- 4: Empowered Choices**

In the final Strategy, each pathway will also include how we will track progress and measure success.

# 1 Less Grey, More Green

## DIRECTION

*Restore, protect, and enhance natural areas and biodiversity on public and private property.*

## CONTEXT

The City's natural areas and assets support our community in countless seen and unseen ways, from cleaning the air and water, providing habitat to numerous species, shading and cooling our streets and buildings, to providing places for social and physical pursuit. Supporting the health and the extent of the environment by increasing the connectivity of natural areas, expanding the urban tree canopy, and prioritizing opportunities to incorporate more green to our urban fabric will foster biodiversity, improve ecosystem wellbeing, reduce stress on grey infrastructure, and result in a more resilient and biodiverse City.

## OBJECTIVES

- 1 a) Position the environment and climate priorities at the core of land use and transportation planning, and at the foundation of decision-making.
- 1 b) Integrate an updated hazard, risk, and vulnerability analysis approach to ensure safe and resilient land use planning, and for the management of the City's public infrastructure and natural assets.
- 1 c) Protect and grow the City's park and public space system, natural areas, [urban forest](#), and habitat connectivity.
- 1 d) Protect and improve biodiversity, the health of flora and fauna, and improve soil health for a changing climate.
- 1 e) Improve stream and [riparian](#) health and water quality across the City and as it flows to the Burrard Inlet.
- 1 f) Enhance and restore the City's [foreshore](#) while adapting to rising sea levels.
- 1 g) Better utilize rainwater, protect groundwater, and reduce [impervious surfaces](#) on public and private property.
- 1 h) Conserve drinking water and promote education concerning its management.
- 1 i) Reduce hazardous noise and air pollution.

# 2 Climate Resilient Buildings

## DIRECTION

*Transition to a resilient building stock through improvements to new and existing buildings.*

## CONTEXT

Buildings currently make up over 40% of emissions generated in the City – primarily from natural gas used for space and water heating. Our buildings are also largely unprepared for the heat and wildfire events we are already experiencing. As one of the faster growing municipalities in Metro Vancouver, the City has a significant opportunity to improve the climate resilience of our buildings through regulation of new construction, retrofitting existing buildings, and [decarbonizing](#) of the City's [community energy system](#).

## OBJECTIVES

- 2 a) Implement energy and [carbon performance standards](#) for existing buildings.
- 2 b) Incentivize and support [low carbon](#), resilient [retrofits](#), including buildings connected to the community energy system.
- 2 c) Undertake low carbon resilient retrofits of City buildings.
- 2 d) Transition to high efficiency, [zero carbon](#) building standards that are adapted to a changing climate and extreme weather events.
- 2 e) Use the development process to demonstrate leadership in resilience and innovation for buildings and sites.
- 2 f) Increase public and industry awareness and action regarding the energy and carbon performance of buildings.
- 2 g) Reduce the [embodied carbon](#) of building materials and construction projects.
- 2 h) Ensure the City's community energy system meets our [climate goals](#), including the transition to renewable energy.

# 3 Connected Neighbourhoods

## DIRECTION

***Build compact and mixed-use communities that support zero emission modes of transportation.***

## CONTEXT

Carbon pollution from transportation accounts for 56% of community-wide emissions with the majority being attributed to personal cars and trucks. By building compact, mixed-use neighbourhoods where residents live within a short distances of their daily needs we can ensure the lowest carbon option for all trips is convenient, accessible, comfortable and safe.

## OBJECTIVES

- 3 a) Create a City of low carbon and resilient neighbourhoods that enable access to daily needs and greenspace within a short walk or roll from home.
- 3 b) Increase the utilization and climate resilience of the City's transit network.
- 3 c) Ensure pedestrian and active transportation networks are adapted to a changing climate.
- 3 d) Support and enable the switch to [zero emission passenger vehicles](#) (ZEVs) and the electrification of medium and heavy duty vehicles.
- 3 e) Reduce the need for car ownership by increasing access to zero emissions mobility-sharing and car-sharing services.
- 3 f) Decarbonize the City's fleet and equipment, and make low-carbon travel the most attractive option for City staff trips.
- 3 g) Transition to sustainable [urban logistics](#).

# 4 Empowered Choices

## DIRECTION

*Foster a low-impact and **circular economy** that empowers our community to move to a zero carbon and zero waste future.*

## CONTEXT

Emissions are generated throughout a product's lifecycle: from the extraction of raw materials, to waste disposal. By embracing a low-impact and circular economy – reducing, rethinking, sharing, reusing, repairing and recycling – we are moving towards a **zero carbon**, **zero waste** future.

## OBJECTIVES

- 4 a) Embed a culture of reducing and rethinking the use of products and materials into City policies and communications.
- 4 b) Support reusing, repairing and repurposing of materials to extend the life of goods in circulation.
- 4 c) Increase the recovery and recycling of resources such as food and construction materials to reduce waste.
- 4 d) Encourage shifting to the consumption of **low-impact** food, products and services and support businesses making this transition.
- 4 e) Expand opportunities to grow more food locally.
- 4 f) Encourage and facilitate the sharing of resources and common amenities, such **lending libraries**, shared laundry rooms, and consumer goods rental services.
- 4 g) Provide leadership and resources to support community-driven change that furthers climate and environment objectives.
- 4 h) Advocate and coordinate for legislation that strengthens the circular economy across products' full lifecycle such as **durability and right-to-repair standards**, and **extended producer responsibility**.
- 4 i) Embed a culture of innovative sustainable operations within the City's processes, procurement and financial practices through interdisciplinary collaboration.

# 5. Implementation: Delivering the Climate and Environment Strategy

This is a 10-year Strategy and it is intended that the directions and objectives will be delivered over this timeframe. The implementation of this Strategy requires strong teamwork, adequate resources, staff time, partnerships, and an engaged community to be successful. There is an opportunity for everyone, including city residents, staff, political and community leaders, and other levels of government, to contribute to this work.

Each of the four pathways in this Strategy provide directions and objectives to communicate expectations and guide decision-making while remaining nimble to changing conditions. Because this is a fully integrated Strategy, the resulting work will be delivered by various departments and divisions within the City. Much of the work will also require partnerships with other governments, rights holders, non-profit organizations, the business community, other stakeholders, and the public. The delivery and timing of the work will be dependent Council's objectives and priorities, along with the need, annual budgets, and capacity.

We cannot predict the future, however the aim is that the Climate and Environment Strategy establishes the enabling conditions for overcoming issues and challenges, as well as being able to capitalize on opportunities as they arise.

## FUNDING AND RESOURCES

Given that funding and resources are limited, and that many components of this Strategy need to build on one-another and on other City policies, the decisions as to when actions will be undertaken must be thoughtfully and strategically considered. (We cannot do it all at once.)

The typical opportunities for allocating funding and resources in the City include:

- The **Annual Financial Planning Process** at which time all City departments propose a list of projects and/or programs to be included in the City's operating and capital budgets in the Financial Plan. These projects are then evaluated and selected based on how well they support the City's objectives and strategic priorities.
- **Work Programming** which happens annually and by each City department, to guide the staff's work and budget allocation for the calendar year. Policy development and implementation are typically considered through this process.
- **Partnerships and External Funding Sources** may enable the City to deliver projects and/or programs on expedited timelines, as funding or partnerships are secured.

For this Strategy, it means that staff will bring forward funding and resource requests to undertake work that delivers on the directions and objectives through the above processes or as opportunities arise.

## HOW WE DO THE WORK

When we undertake implementation of actions, the below is how we support integration, consistency, and coordination as well as learning and information sharing:

**1. MONITORING AND REPORTING:**

We cannot improve what we do not measure. Strategic monitoring and reporting programs will be established to encourage continual improvement. This includes proactively collecting and analyzing both quantitative and qualitative data, mitigating inequities by amplifying key indicators, and regularly reporting out on progress.

**2. TALK AND ENGAGE:**

Conversations and engagement make it possible to better understand the needs of the community and find collective solutions. This includes ongoing engagement with other governments, stakeholders, and the community at large, reducing barriers to participation, and increasing representation and diversity of viewpoints.

**3. PILOT, LEARN, ADAPT:**

Planning can go a long way in anticipating outcomes, but we can often learn just as much, if not more, from monitoring on-the-ground outcomes. The world is changing quickly and being nimble is critical. The City will continue to be open to piloting (or testing), learning as we go, and adapting as required to enable faster implementation and more opportunities to try new things.

**4. EDUCATION, EMPOWERMENT, AND STEWARDSHIP:**

Much of the success of the actions in this Strategy will depend on a high level of community participation. This includes building awareness, knowledge, and empathy, working with non-profit and other community organizations to expand education opportunities, offering internal training, and creating opportunities for volunteering and community involvement.

**5. FINANCING WELLBEING:**

To support the implementation of the Strategy and community outcomes, new approaches toward decision-making and strategic financial planning will be considered. This includes building partnerships and relationships, participating in grants and other funding opportunities, documenting the environmental impact of investment (and community outcomes), strategically increasing non-profit and community organization capacity, and advocacy to higher levels of government to support social infrastructure.

# Glossary

**Carbon dioxide equivalent or CO<sub>2</sub>e:** refers to the number of metric tonnes of CO<sub>2</sub> emissions with the same global warming potential as one metric tonne of another greenhouse gas. There are a number of gases that contribute to global warming all of which together are quantified in the single unit of CO<sub>2</sub>e.

**Carbon performance standards:** are imposed to limit the amount of carbon pollution that can be emitted by a building.

**Carbon pollution:** is greenhouse gas emissions, primarily carbon dioxide, that are generated from human activities like the combustion of fossil fuels and cause climate change.

**Circular economy:** is a model of production and consumption that involves sharing, reusing, repurposing, recovering, rethinking, repairing, and recycling materials and products as long as possible. Circular economies reduce and divert much of the waste that goes to landfills.

**Climate resilience:** is the ability to anticipate, prepare for, and respond to hazardous stresses or shocks related to climate change.

**Community energy system:** is a centralized heating system that distributes thermal energy through a network of underground pipes to multiple buildings in an area. Lonsdale Energy Corporation is the City's community energy system.

**Consumption-based:** refer to emissions associated with using of products and services that have been produced elsewhere, such as consuming food that was grown in another country.

**Decarbonization:** is the reduction of CO<sub>2</sub> emissions through use of low carbon renewable power sources to achieve a lower output of greenhouse gases.

**Durability and right-to-repair standards:** legislation or regulations that set standards for producers regarding the quality, durability and repairability of goods.

**Ecosystem Services:** are the many direct and indirect benefits to human wellbeing provided by the natural environment, such as food production and flood mitigation.

**Embodied carbon or embodied emissions:** of a material is the carbon pollution generated from its full life cycle from production to disposal.

**Extended Producer Responsibility:** an approach to recycling that requires producers, such as manufacturers, distributors, and retailers to take responsibility for the life cycle of the product they sell including collection and recycling.

**Foreshore:** is the part of the shore that is between the lowest and highest tides, such as the inter-tidal zone.

**Greenhouse gas emissions:** are the gases in the atmosphere, both natural and anthropogenic, such as carbon dioxide, methane and nitrous oxide that trap heat and cause climate change.



**Impervious surfaces:** are surfaces that do not allow water to soak into the ground such as paved roads or buildings. This can lead to higher urban temperatures (e.g., heat islands), more stormwater runoff, increased pollutants into our water systems, and impacts to stream and wildlife health.

**IPCC or Intergovernmental Panel on Climate Change:** is the intergovernmental body of the United Nations that is responsible for advancing knowledge on human-induced climate change.

**Lending Libraries:** community hubs for sharing, borrowing and reusing tools, equipment and household goods amongst neighbors.

**Low carbon pathway:** refers to the necessary adjustments that are needed to achieve our carbon pollution targets. The City has set targets to be achieved before 2050. See page 12 of this Strategy.

**Low-impact:** refers to actions and choices made that emit less carbon pollution than an alternative, such as buying locally grown food rather than importing food that emits more transportation-related emissions.

**Native species:** are flora and fauna that are indigenous to a given region or ecosystem with no human intervention.

**Natural environment:** refers to the non-human-made surroundings and conditions in which all living and non-living things exist on Earth. This includes ecological units that operate as natural systems (e.g., soil, vegetation) and universal natural resources (e.g., air, water).

**Net zero emissions or net zero or carbon neutral:** means an overall balance between the greenhouse gas emissions produced and removed from the atmosphere. For the City, this means reducing emissions as much as possible, and removing any remaining emissions using natural solutions and technology.

**Resilient:** refers to the ability withstand and/or recover from shocks and stresses, and the ability to proactively learn from experiences and improve conditions with consideration for mitigation, adaptation, and health.

**Retrofits or low carbon retrofits:** refer to increasing energy efficiency and renewable energy produced by older buildings to decrease carbon pollution created from these buildings.

**Riparian:** refers to the natural areas adjacent to streams, lakes, and rivers.

**Stormwater:** is rain that lands on rooftops, roads, and sidewalks, and into our stormwater infrastructure system instead of soaking into the ground. Stormwater can be managed through measures like rain gardens, permeable surfaces, and planting trees.

**Stormwater Treatment Systems:** are built or naturalized infrastructure that capture pollutants from surface water runoff before they reach a body of water.

**Tree canopy:** indicates the extent of urban forest and ecosystem services it provides and consists of ground cover, stems, branches, and leaves of trees both on public and private land.

**Urban forest:** is an interconnected ecosystem that refers to all of the trees, soil, and supporting vegetation in the community.

**Urban logistics:** refers to the movement of goods and describes the transport of goods in urban areas.

**Walking and rolling:** refer to walking, using a mobility device (e.g., wheelchair), biking, skating, taking a scooter, or using a micromobility device (e.g., e-bike-share).

**Watershed or catchment area:** is the area of land that drains all the rainfall and streams to a common outlet into the ocean.

**Zero carbon, or zero carbon emissions:** means that no greenhouse gas emissions are generated at the point of use.

**Zero Emission Passenger Vehicles (ZEVs):** is a vehicle that does not emit carbon pollution from the onboard source of power.

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<sup>i</sup> City of North Vancouver GPC Community Energy & Greenhouse Gas Emissions Inventory, 2020.

<sup>ii</sup> Metro Vancouver Air Quality Annual Work Plan, 2022

<sup>iii</sup> TransLink Regional Trip Diary, 2017.

<sup>iv</sup> City of North Vancouver ecoCity Footprint Tool, 2020.

<sup>v</sup> Norman et al. Comparing High and Low Residential Density: Life-Cycle Analysis of Energy Use and Greenhouse Gas Emissions. 2006.

<sup>vi</sup> Statistics Canada Census of Population, 2021.

<sup>vii</sup> Metro Vancouver Climate 2050 Strategic Framework, 2018