

# Climate Mitigation and Adaptation: Pathways to Success



## How can land use planning affect Richmond's climate response?

While climate change poses a significant challenge, responding to it presents opportunities to advance overall sustainability. This is because many of the things that reduce the impacts of climate change can simultaneously contribute to other sustainable land use objectives such as community safety, resilient economies, local food security, live-work-play communities, less car dependency, higher performing buildings, and healthier natural environments.

## Why is this important?

It does not take a major change in temperature to change climatic conditions. Updating Richmond's land use planning, including the protection of natural areas and assets, will make the community more climate-resilient and contribute to equity, affordability and sustainability.

## What are we doing today?

The City is a leader in climate mitigation and adaption action:

- In 2019, Richmond declared a climate emergency in response to the United Nation's call to action.
- Community Energy and Emissions Plan (CEEP) 2050 and Circular City Strategy set paths to reduce energy use, greenhouse gas (GHG) emissions and waste.
- High performance buildings (BC Energy Step Code) and low carbon district energy reduce energy use and GHG emissions from heating and cooling.
- Improved transit, active mobility (e.g., walking, rolling, biking) and electric vehicle (EV) charging are encouraged city-wide.
- Flood protection measures (e.g., dikes) address rising sea levels and the increased frequency and intensity of storms due to climate change.
- Tree canopy and green roofs help reduce heat impacts in urban areas.
- A transit-oriented village framework guides City Centre growth.

## How do climate mitigation and adaptation differ?



### Climate Mitigation

Climate Mitigation is about reducing greenhouse gas (GHG) emissions from human activities through means like energy-efficient buildings, low carbon district energy systems, using transit, living in compact walkable communities, and minimizing disturbances to carbon stored in soils (e.g., peatlands in agricultural areas outside Richmond's residential development areas).



### Climate Adaptation

Climate Adaptation is about preparing for the current and future impacts of a changing climate with things like enhanced flood protection, shade, energy efficient in-building cooling systems, drought-resistant planting and emergency response measures.

What are the challenges?	What does 2050 look like?	How do we get there?
High-performance standards apply to all new buildings, but it takes time to improve climate resiliency across neighbourhoods, especially in low density areas that are slow to change.	High performance standards (e.g., BC Energy Step Code) for new buildings and retrofits, district energy and related measures contribute to less energy use and reduced GHG emissions (e.g., net zero by 2050).	<b>1</b> Prioritize continual improvement in high-performance development practices
Downtown is becoming transit-friendly, but elsewhere the shift away from cars to more compact, walkable communities remains a challenge.	Climate-based decision making ("climate lens") has reduced car dependency and supported the development of a network of compact, walkable transit-oriented villages.	<b>2</b> Build connected climate-resilient transit-oriented urban villages
As extreme weather conditions become more common, it is important to future-proof the community by building shelter, shade and other measures into the spaces and places people use every day.	Richmond's public spaces, City facilities and homes and businesses are adaptable and support community resiliency with measures that mitigate climate impacts (e.g., cooling) and speed recovery from weather events.	<b>3</b> Future-proof public and private spaces and places



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## *Build connected climate-resilient transit-oriented urban villages*

### What can we do?

Building connected, transit-oriented urban villages is the single-most impactful land use planning response the City can use to address the challenges of climate change. The design and development of new urban villages will be guided by a “climate lens” that will embed climate-based decision-making into community planning and strengthen public resiliency to the impacts and events arising from a changing climate.

### What is a transit-village?

A transit-village is a compact, walkable urban community that clusters shops, services, multi-unit housing (e.g., apartments, townhouses, SSMUH) within easy reach of residents’ daily needs, including parks, schools, jobs, amenities and existing or future frequent transit service.

### What are the benefits?

#### Climate **Mitigation** Benefits

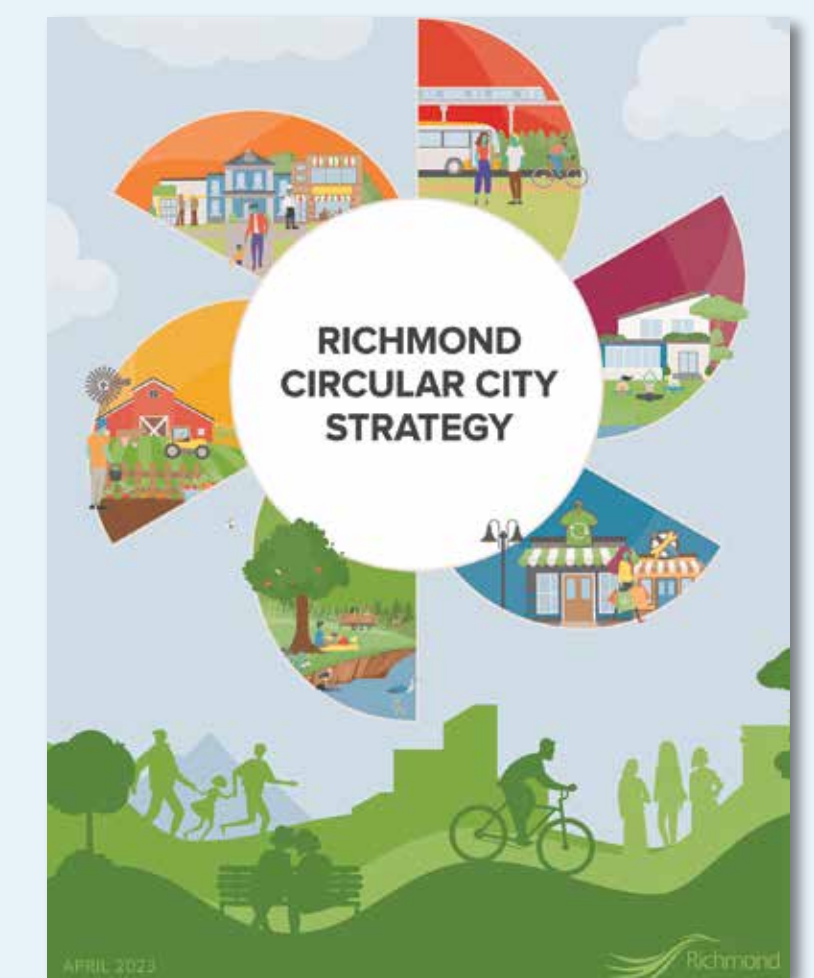
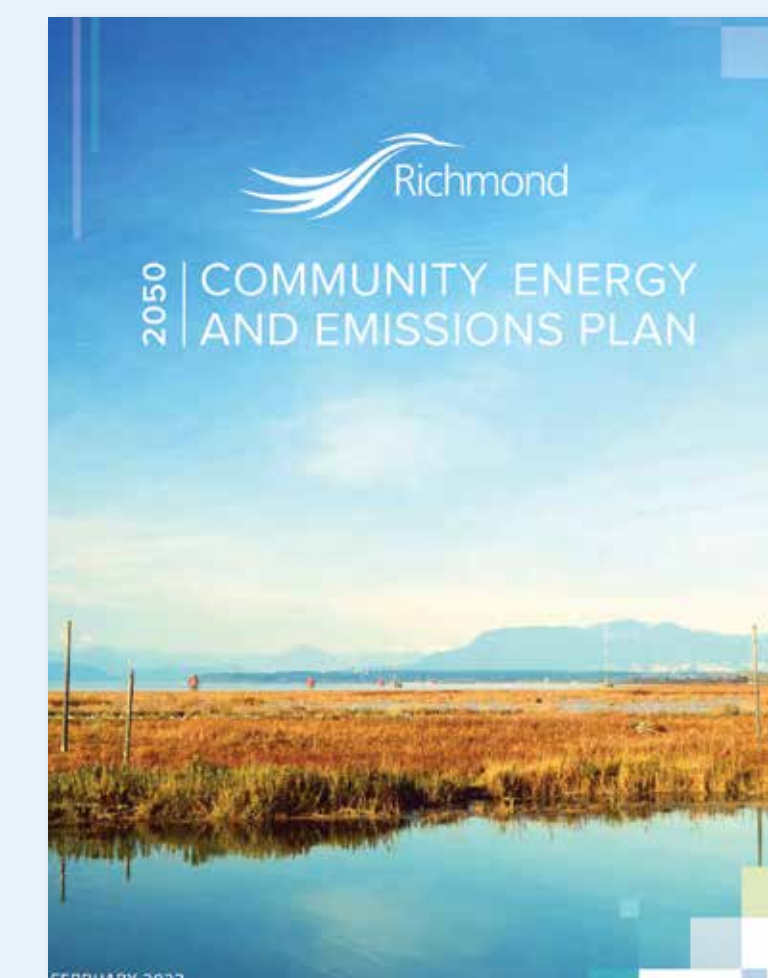
- Residents rely less on cars to get to their daily needs
- New energy efficient buildings, features and infrastructure
- Safe, connected and attractive walking, rolling and cycling networks
- Increased village populations contribute to better transit service
- Compact communities may facilitate low carbon district energy systems that reduce emissions and provide more affordable heating and cooling

#### Climate **Adaptation** Benefits

- A connected network of climate-responsive public spaces and places enhances livability and equitable access to daily needs throughout villages and neighbouring areas (e.g., shade and weather protection).
- Indoor and outdoor emergency hubs integrated with everyday spaces and uses (e.g., village square, village shops or community facility) support a commonsense approach to dealing with climate-related events and other urgent situations.



### Key City initiatives



#### Richmond’s Community Energy and Emissions Plan (CEEP) 2050

Sets a path to reduce greenhouse gas (GHG) emissions by 50% by 2030 and net zero by 2050.

#### Richmond’s Circular City Strategy

Prioritizes a collaborative approach to responsible consumption and a sustainable, equitable, low-carbon economy.

#### Lulu Island Energy Company (LIEC)

A City-owned district energy utility delivering low cost, low carbon heating and cooling and contributing to GHG reduction goals.

### What else can we do?

#### Support local action

With climate-smart and energy initiatives implementable at the neighbourhood and household scale.

#### Increase community capacity for action

With programs supporting climate-smart knowledge and awareness.

#### Support Continuous Improvement

By measuring and monitoring contributions to climate mitigation and adaptation with standardized criteria for public and private places and spaces.

#### Support future planning of Local Villages

With a climate-smart approach to building design, complete communities and future-proofing public places.