



CITY OF VICTORIA

CLIMATE LEADERSHIP PLAN & CLIMATE ACTION PROGRAM UPDATE

July 26, 2018



PURPOSE

- Present the final Climate Leadership Plan for Council's consideration.
- Provide an update on the Climate Action Program for Council's information.

Background

August 18, 2016, Council motion:

*“Establish a long-term greenhouse gas (GHG) reduction target for both corporate and community emissions consistent with global reduction goals of **80% GHG reduction** by 2050, including a corresponding target of **100% renewable energy**.”*

Updates:

Dec 2016: staff provided update on completed actions and further work, including development of Climate Leadership Plan (CLP).

Sept 2017: staff provided update on development and structure of CLP.

Dec 2017: staff presented draft CLP and council approved draft and directed staff to carry out community and stakeholder engagement. Council also approved allocation of over \$400,000 from Climate Action Reserve Fund for priority staffing and actions and directed staff to report back in June with final CLP, long-term funding strategy and program update.



CLP Staff Review: Focus Areas

- Updated or additional GHG analysis and modelling
- Improvement of language and making adjustments
- Assessment of aesthetic document needs



Engagement Summary

- Community Engagement
- Subject Matter Engagement
- Draft CLP promotion/marketing

Feedback (overview)

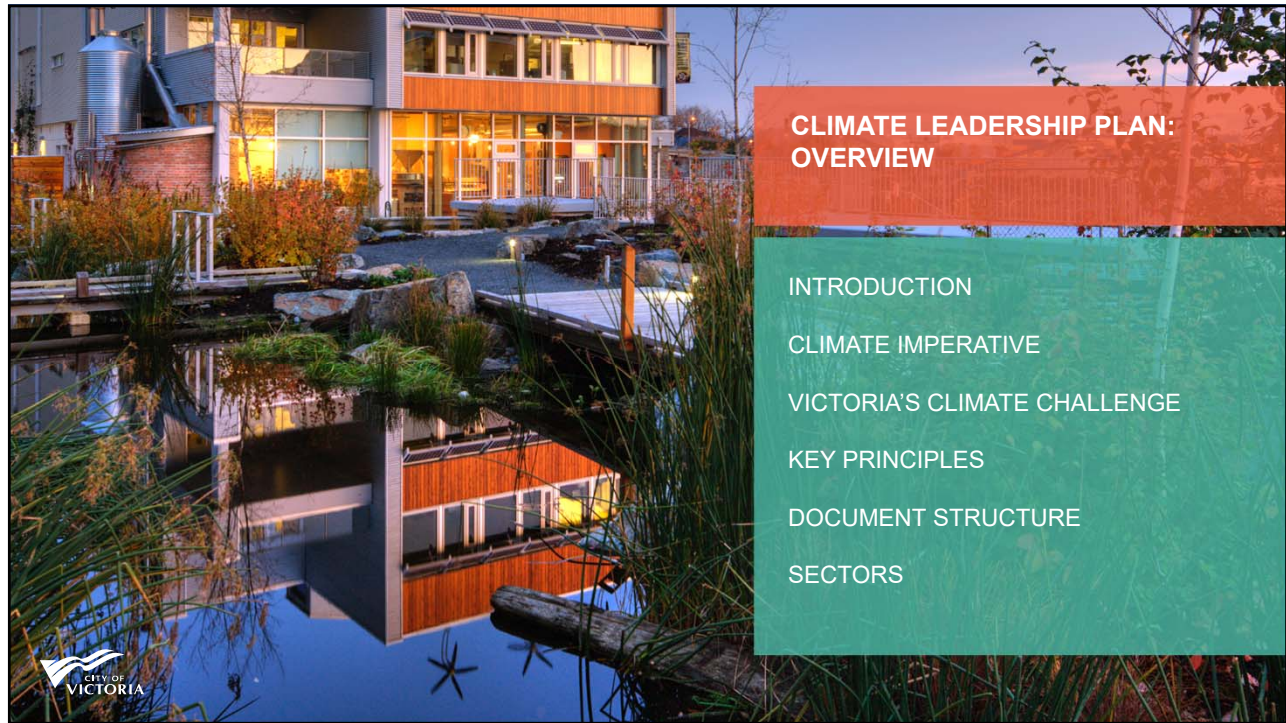
- Use accessible and easy to understand language
- Make actions more prominent
- Provide practical solutions and show how change is possible
- Change can be difficult, but incentives can motivate
- Education and awareness
- The City can't do this alone; partnerships and advocacy are key
- Involve youth in future planning and programming
- Climate Leadership Plan is an important step in climate action by the City



Climate Leadership Plan: Overview of Changes

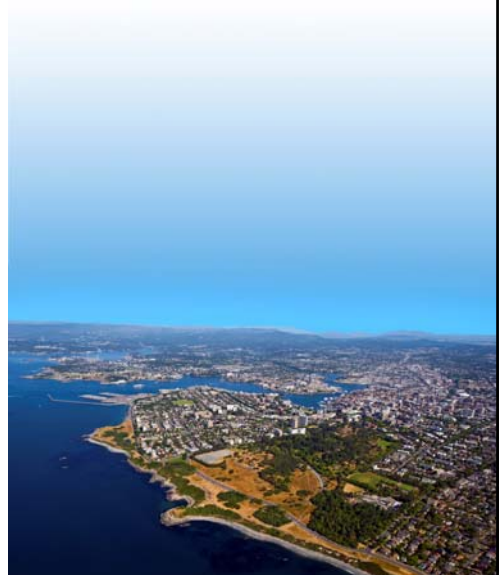
- Rewritten and improved text and content
- Updated document structure
- Additional final chapter introducing embodied emissions and the circular economy
- Updated information and GHG performance
- Improved, or added, graphics, icons, photos and charts
- Feature content dedicated to Community in Action
- Reviewed, renewed, improved distinct action sets
- Refined goal and target language





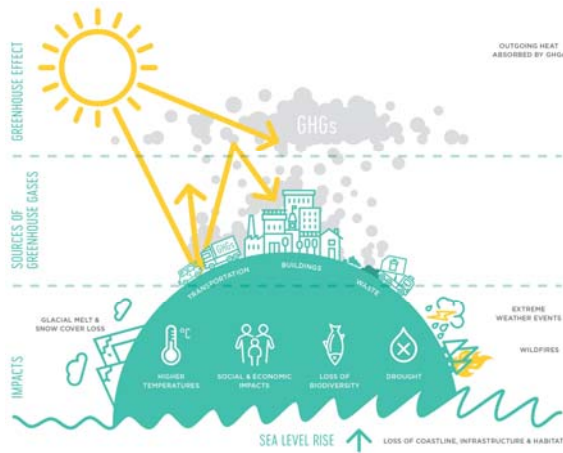
Introducing the Climate Leadership Plan

- Cities account for more than 70 percent of GHG emissions
- Part of the solution, not just part of the problem
 - Centres for innovation, technology
- Lead and inspire: the big win lies in inspiring the entire community to action
- Climate action and building resilience will deliver financial, environmental and social benefits across our community
- Targets align with National and International commitments:
 - **Reduce** community-wide **GHGs** by **80 percent** below 2007 levels by 2050
 - Shift away from fossil fuels to **100 percent renewable energy**



Climate Imperative

- Human activity has produced greenhouse gases (GHGs) at an intensity beyond what the earth's natural systems can absorb
- Warming of Earth's surface will unleash more extreme impacts. Additional 2 degrees of warming expected by the end of this century.
- Experts project impacts could be catastrophic without deep cuts in future GHG emissions
- Local climate risks include:
 - Increased seasonal precipitation
 - Rising sea levels
 - More frequent, longer heatwaves
 - Unavoidable impacts (including wildfires, drought, and increased infrastructure costs)



Victoria's Climate Challenge

2017 GHG EMISSIONS BY SECTOR (387,694 tCO₂e11)

32%	COMMERCIAL, INSTITUTIONAL, INDUSTRIAL, AND MULTI-UNIT RESIDENTIAL
19%	SINGLE FAMILY HOMES
9%	SOLID AND LIQUID WASTE
40%	ON-ROAD TRANSPORTATION



Figure 1: City of Victoria GPC Compliant Inventory, 2017

2017 RENEWABLE AND NON-RENEWABLE ENERGY MIX

35%	RENEWABLE ELECTRICITY
8%	HEATING OIL AND PROPANE
3%	WOOD
<1%	RENEWABLE NATURAL GAS
2%	BIODIESEL AND ETHANOL
23%	GASOLINE AND DIESEL
29%	NATURAL GAS



Figure 3: City of Victoria GPC Compliant Inventory, 2017

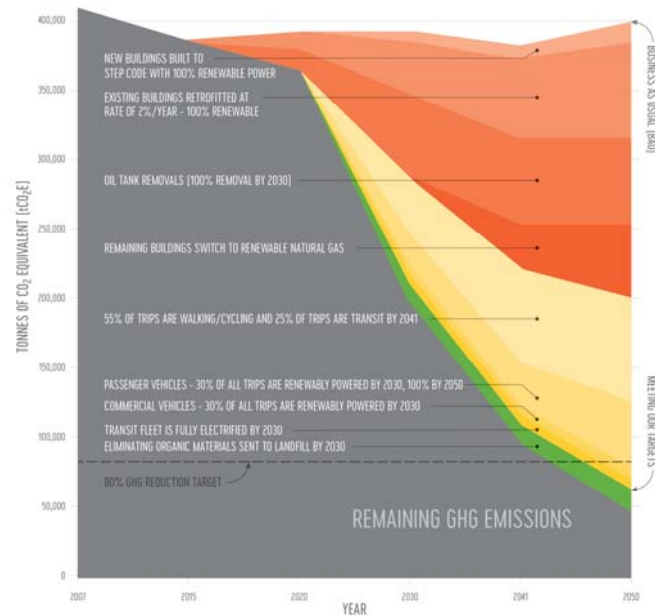
2017 GHG EMISSIONS BY FUEL TYPE

36%	GASOLINE
3%	ELECTRICITY
7%	DIESEL
2%	WOOD
2%	PROPANE
12%	HEATING OIL
38%	NATURAL GAS



Figure 2: City of Victoria GPC Compliant Inventory, 2017

Victoria's Climate Challenge



Getting to Low Carbon Prosperity

The City's **vision** for 2050 is of a vibrant, healthy, and prosperous community, fueled by renewable low carbon energy systems, and designed and integrated in ways that promote a high quality of life for all Victorians.

The City's **mission** is to lead Victoria's transition to a renewable energy future, and to inform, equip, enable and inspire the community to rapidly reduce their own GHG emissions and prepare for climate change.



CLIMATE LEADERSHIP PLANNING PRINCIPLES

- 1 Lead and inspire** – The City will be a regional and national leader on climate mitigation and adaptation. It will take urgent action to drive innovative GHG reductions, creatively and collaboratively with other leaders and key stakeholders.
- 2 Harmonize climate action to secure co-benefits** – GHG reduction actions should be integrated with all other priority areas for City planning, including health, safety, and environmental protection, affordability, and quality of life.
- 3 Universal accountability** – All Victorians (residents, businesses, employees, and visitors) have a role to play in improving GHG performance, and should be encouraged to take meaningful action.
- 4 Make energy visible** – Our community's energy use, GHG performance, and climate impacts must be clearly known to drive effective change.
- 5 Evidence-based decisions** – Energy and GHG decisions should be socially-minded, cost-effective and supported by science, including a full, life-cycle understanding of relevant issues and technologies. ●
- 6 Renewable energy for all** – Our entire community, regardless of circumstances, must have access to efficient, affordable and renewable energy options.
- 7 Dismantle barriers** – The City will remove barriers preventing rapid decarbonisation of our energy mix by supporting policies that support smart energy choices and GHG-reduction behaviours. ●
- 8 Climate resilience is developed early** – Victoria must act with a sense of urgency and take early and meaningful action to avoid the most disruptive economic, social, and environmental impacts imposed by climate change.
- 9 Think globally, change locally, partner regionally** – Partnering and advocating across jurisdictional boundaries is key to achieving consensus and maximizing global GHG reductions.
- 10 Track and Adjust** – The City will measure, track and report on its targets and actions annually, making adjustments where required. ●

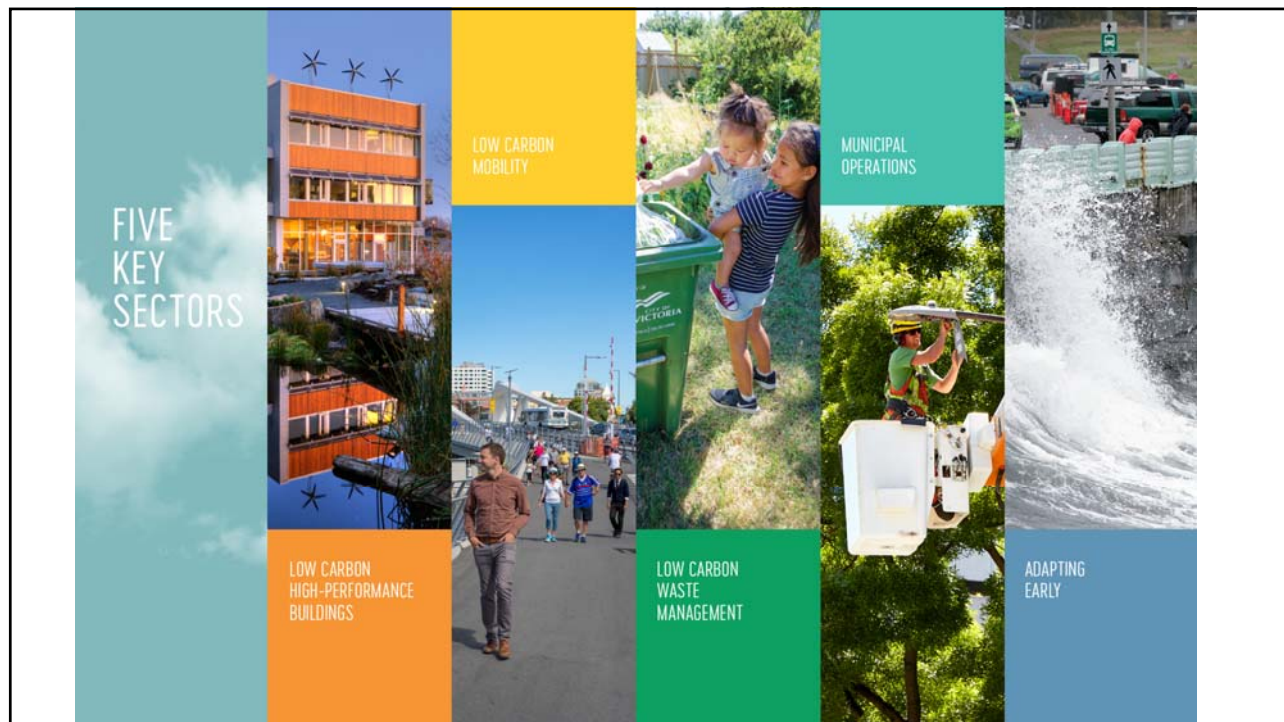
Document Structure

EACH SECTOR INCLUDES:



The CLP's actions fit into four general classes:





Low Carbon, High Performance Buildings (p. 24)



The Vision: By 2050, Victoria will be home to efficient, renewably powered, high performance buildings. Building design, operations and management will have evolved to deliver more sophisticated, comfortable, healthier buildings with far low energy needs...

The Challenge

- Building energy-use (heating and cooling)
- Aging and inefficient building stock

The Plan

- Address energy-efficiency
- Replace old systems with renewable systems
- Redesign building design and construction

Actions

- Energy efficiency and fuel switching programs for new and existing buildings; advocacy

Community in Action

- Passive House
- Home Retrofit

GHG CONTRIBUTION BY BUILDING TYPE AND HEATING SOURCE



Figure 4: City of Victoria GPC Compliant Inventory, 2017

Low Carbon, High Performance Buildings



GOALS

- All buildings are highly energy efficient.
- All buildings are powered by renewable energy.



TARGETS

- *By 2030, all new buildings are 'net zero energy ready.'*
- *By 2050, all existing buildings meet new high efficiency standards.*
- *By 2030, heating oil is phased out.*
- *By 2050, all buildings exclusively use renewable energy.*



Low Carbon Mobility (p. 34)



The Vision: *By 2050, people, goods and services moving around Victoria will generate little to no GHG emissions. A seamless and integrated mobility system prioritizes low carbon transportation including walking, public transit and shared electric mobility options...*

The Challenge

- Single-occupancy and larger in-efficient vehicles
- Not enough people taking alternative transit

The Plan

- Reduce the number of vehicles, travel distance and trips
- Encourage uptake of EVs and other renewable fuels
- Redesign the way people move around the city

Actions

- Electrification; mode shift; low carbon fuels; partnerships/education

Community in Action

- Switch to EV and hybrid-electric
- Mode shift

GHG CONTRIBUTION BY VEHICLE TYPE

48% LIGHT TRUCKS, SUVs

3% OTHER VEHICLES

12% COMMERCIAL VEHICLES

37% PASSENGER VEHICLES



Figure 6: City of Victoria GPC Compliant Inventory, 2017



Low Carbon Mobility



GOALS

- All Victorians have access to low carbon, high performance and affordable multi-modal transportation.
- Vehicles in Victoria are powered by renewable energy.
- Smart land use minimizes transportation emissions.



TARGETS

- By 2030, 25 percent of all trips by Victoria residents are taken by public transportation.
- By 2030, 100 percent of BC Transit buses in Victoria are renewably powered.
- By 2030, Victoria residents choose walking and cycling for 55 percent of all trips.
- By 2030, renewable energy powers 30 percent of passenger vehicles registered in Victoria, and 100 percent of passenger vehicles are renewably powered by 2050
- By 2030, 30 percent of commercial vehicles operating in Victoria are renewably powered.
- By 2030, 100 percent of Victoria's neighbourhoods are "complete" by design with substantial transportation system diversity.

Low Carbon Waste Management (p. 42)



The Vision: *By 2050, waste-related emissions have been eliminated. Greenhouse gases produced by organic materials collected and treated in the region supply renewable energy to the community...*

The Challenge

- Organic materials breakdown in landfill and release methane
- Organic materials are still ending up in the landfill

The Plan

- Reduce organic materials entering the landfill
- Reduce the amount of waste generated
- Capture emissions and nutrients from organics

Actions

- Improve organics collection/processing; partnerships/education

Community in Action

- Food Rescue Project

LANDFILL WASTE GENERATING GHGS AT HARTLAND LANDFILL

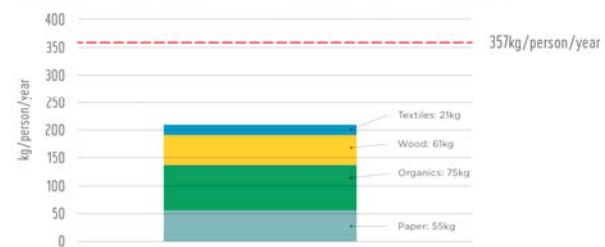


Figure 9: Landfill waste generating GHGs at Hartland Landfill. Numbers from 2016 CRD Waste Stream Composition Study.



Low Carbon Waste Management



GOAL

- Organic materials are managed to avoid GHG emissions.



TARGETS

- Eliminate 100 percent of food and yard waste sent to the landfill by 2030.
- Eliminate 100 percent of other organic materials sent to the landfill by 2030.
- Capture methane from collected organic waste to provide renewable energy by 2025.



Municipal Operations (p. 48)



The Vision: *By 2050, all of the City's operations, fleet and buildings will be renewably powered. The City has consistently demonstrated a track-record of successful GHG reduction programs...*

The Challenge

- Fossil fuels power buildings, vehicles and operations

The Plan

- Reduce energy use through energy efficiency
- Redesign services and infrastructure management
- Replace fossil fuels with renewable energy

Actions

- Electrification of fleet; transition facilities to renewable energy; operational energy improvements; develop strategies and plans

City in Action

- Victoria Conference Centre

GHGs FROM CITY OPERATIONS

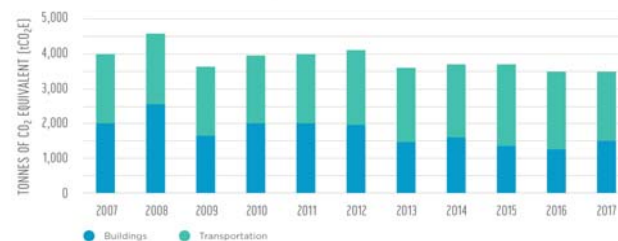


Figure 10: City of Victoria corporate GHG inventory, 2017



Municipal Operations



GOALS

- The City is a recognized leader in climate mitigation and adaptation.
- The City takes integrated and informed climate action.
- The City will provide timely and accurate data supporting strong climate mitigation and adaptation actions.



TARGETS

- By 2040, 80 percent of the City's fleet is electrified, or renewably powered.
- All new City facilities are renewably powered.
- By 2025, all City power tools and small engine-driven equipment are renewably powered.
- By 2040, 80 percent of the City's fleet is electrified, or renewably powered.
- By 2020, capital and operating plans are informed by climate data, carbon pricing, and the City's GHG reduction targets.
- By 2022, the City has developed a 'triple bottom line' accounting system that guides City business planning.
- By 2022, partner with other local governments and the region to develop a community-accessible Energy and GHG information management System (EGIMS).

Adapting Early (p. 54)



The Vision: *In 2050, Victorians share sustainable community values... Innovative adaptation projects were completed early and affordably to manage an increase in severe and prolonged storms, heatwaves... Victoria municipal infrastructure is strong and supports a healthy, biodiverse and resilient natural environmental, a thriving economy, and a vibrant, active community.*

The Challenge

- Known and unknown risks to City and community assets
- Minimizing environmental, economic and social impacts

The Plan

- Continually monitor all climate risks
- Create resiliency in our physical and natural infrastructure
- Educate and empower the community to take action

Actions

- Strengthen natural and built infrastructure; partnerships; public education

Community in Action

- Increasing home comfort and resilience



Adapting Early



GOALS

- All climate-related risks to City infrastructure are minimized through early and wise planning and action.
- Victoria's natural environment flourishes in a changing climate.
- All Victorians are empowered and prepared for climate impacts and emergencies.



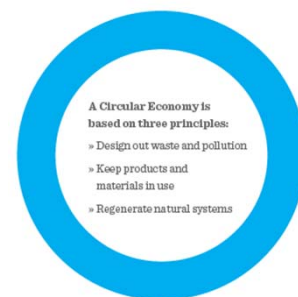
TARGETS

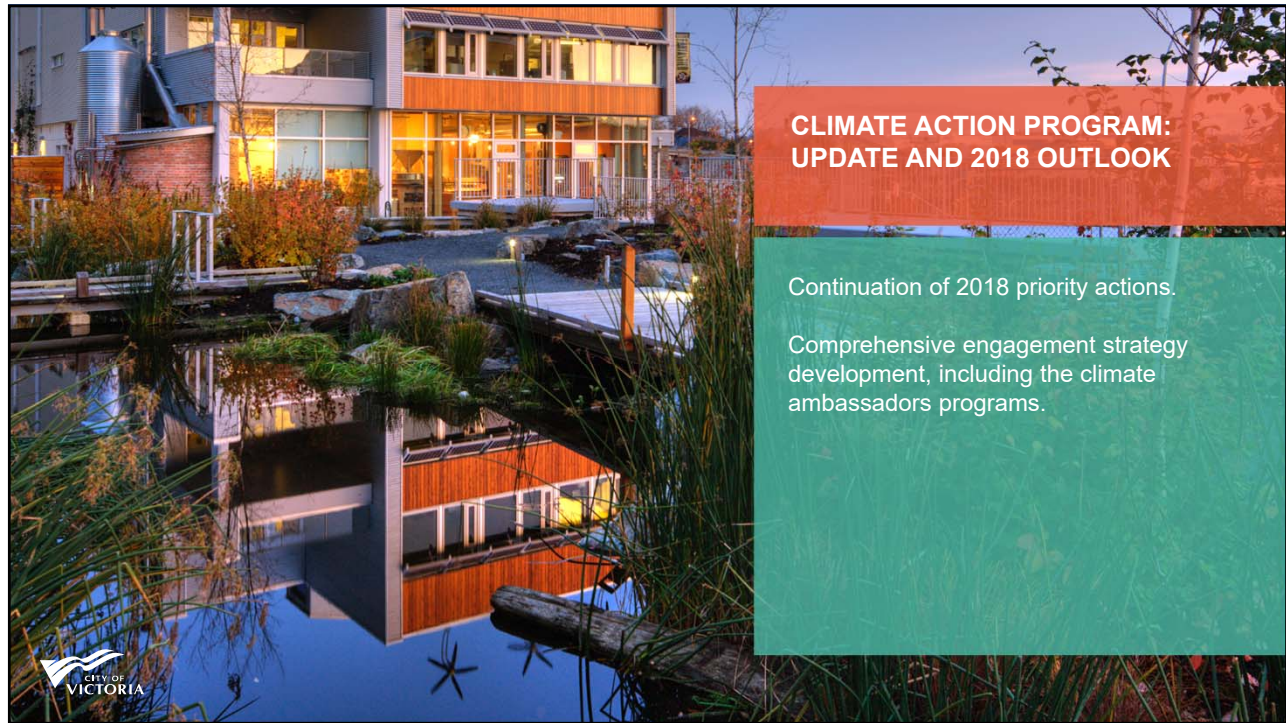
- Climate resilience is embedded into all City business.
- The City's infrastructure and services are ready to protect and respond to the risks associated with a changing climate.
- Natural habitats support healthy fish, wildlife, and plant populations and healthy ecosystem function
- The community is knowledgeable and prepared to address the impacts from a changing climate.
- The City incorporates best practices in risk communication (e.g. advanced warning systems, short videos) covering all climate hazards.
- Climate resilience enhances quality of life for all Victorians, especially the most vulnerable.



The Next Chapter: Embodied Emissions (p. 62)

- Embodied emissions are those GHGs generated beyond city limits to make and deliver the materials, products and services that we consume
- Cities may not have direct control over the embodied emissions of these goods, but they do have opportunities to design and promote sustainable consumption habits





RECOMMENDATION

- That Council approve the City's Climate Leadership Plan for publishing and ongoing work/collaboration with community stakeholders.