

environmental

SUSTAINABILITY PLAN



Coquitlam

environmental

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Table of Contents

- Acknowledgements 2**
- Executive Summary 4**
- Introduction 6**
- Themes..... 12**
 - Climate Action 13**
 - Understanding Climate Action 13
 - Our Progress to Date 15
 - Goals, Strategies and Actions 19
 - Built Environment..... 23**
 - Understanding the Built Environment 23
 - Our Progress to Date 25
 - Goals, Strategies and Actions 28
 - Waste Management 34**
 - Understanding Waste Management 34
 - Our Progress to Date 35
 - Goals, Strategies and Actions 38
 - Water Management 42**
 - Understanding Water Management..... 42
 - Our Progress to Date 44
 - Goals, Strategies and Actions 48
 - Natural Areas, Wildlife and Habitat 52**
 - Understanding Natural Areas, Wildlife and Habitat 52
 - Our Progress to Date 54
 - Goals, Strategies and Actions 57
- Implementation and Monitoring 62**
 - Action Implementation Tables 67**
 - Glossary..... 84**

Acknowledgements

Coquitlam's first Environmental Sustainability Plan (ESP) was created through the collaborative efforts of a broad representation of individuals and organizations. The plan was led by the City's Environment Division, working closely with an interdepartmental staff project support team, who engaged with City Council, First Nations, advisory committees, community groups, external partners and the general public to ensure the community's environmental values were well represented and reflected throughout the plan's goals, strategies and actions. Consultant support included a peer review of the draft ESP completed by Urban Systems and greenhouse gas emissions modeling completed by Pinna Sustainability. These individuals and groups provided invaluable insight and feedback throughout the development of the plan and staff are incredibly grateful for their valuable contributions.



ESP engagement session



Cedar bark harvesting



kʷikwə́łəm drum

Recognizing First Nations Stewardship

kʷikwə́łəm (Kwikwetlem) First Nation are the first people of the Coquitlam River Watershed and have been sustained by area lands and waters since before remembered time. At the core of kʷikwə́łəm stewardship are teachings from generations of ancestors that guide the kʷikwə́łəm Nation on how to honour and care for the Coquitlam River Watershed, as the ancestral home of their people. Central to these teachings is that the lands, waters, and spirit of the Coquitlam River Watershed must be protected for all future generations.

Restoring balance to the Coquitlam River Watershed and returning home the sockeye salmon that once thrived there is a main focus of kʷikwə́łəm stewardship. kʷikwə́łəm means “Red Fish Up the River” and the spirit of the kʷikwə́łəm Nation is tied to the destiny of these fish. The Nation is currently spearheading many habitat restoration and enhancement projects across the territory that benefit all our communities.

kʷikwə́łəm are forging stronger partnerships with federal, provincial and municipal governments to take a leadership role in stewarding lands and resources within their territory. The City of Coquitlam recognizes that kʷikwə́łəm knowledge and input into the Environmental Sustainability Plan is important, and the City will seek to collaborate with kʷikwə́łəm on key sustainability and stewardship initiatives as the actions in the ESP are implemented.



Executive Summary

The Environmental Sustainability Plan (ESP), the first of its kind for the City of Coquitlam, is a forward-looking plan to guide future decisions that support the long-term environmental resiliency and sustainability of the community.

Creating a Framework for Environmental Sustainability in Coquitlam

Designed to align with and complement overarching City plans such as Coquitlam's Strategic Plan and Citywide Official Community Plan (CWOCP), the ESP provides a strategic and sustainable pathway for the City towards achieving the vision of a community that "sustains a high quality of life for current and future generations, where people choose to live, learn, work and play". The ESP links existing and future environmental actions together in a single plan with clear goals and targets coupled with specific actions for implementation.

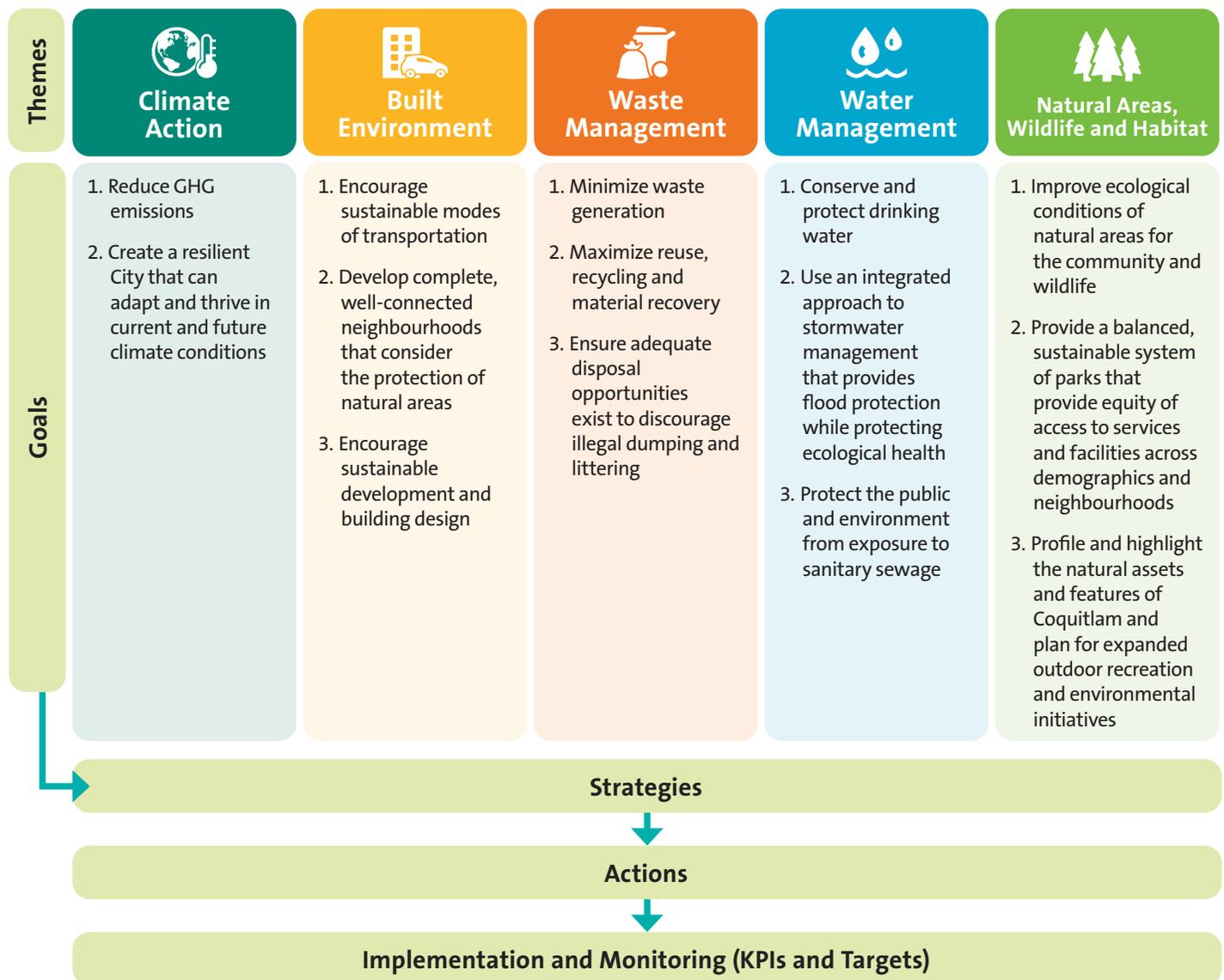
The ESP will continue to enhance the City's established leadership in environmental sustainability and support its ongoing integration into other City projects and policies.

The plan is organized into five key themes. Goals for each theme are presented alongside a detailed list of the strategies and actions required to achieve them as well as key performance indicators (KPIs) to continually monitor success and progress. The strategies and actions of the ESP include best practices from a spectrum of leading edge examples including local and global contexts that were then specifically tailored to Coquitlam and the unique challenges and opportunities that exist within our growing City.

Achieving the goals of the ESP is a challenge that will require the efforts and support of Mayor and Council, senior administration, strong interdepartmental collaboration, interagency partnerships and the entire community. Monitoring KPIs to track progress towards each goal will be instrumental in both ensuring and demonstrating the City’s success. Regular reports to Council will summarize progress to date with a fulsome review and update of the ESP to occur on a 5 to 10-year schedule.

The themes are followed by an implementation strategy which includes a table of high-level cost estimates, proposed timelines and assigns the lead City department.

Environmental Sustainability Plan Structure



Introduction

Purpose of the Environmental Sustainability Plan

The Environmental Sustainability Plan (ESP) is a forward-looking plan that guides future decisions that support the long-term environmental resiliency and sustainability of the community. The ESP incorporates the City’s existing and newly developed environmental goals, objectives and key performance indicators into a single cohesive strategy that inspires systemic thinking in the way the City approaches these topics and aims to maximize co-benefits for the community. Environmental sustainability is also key to achieving the City’s strategic goals and overall vision for 2032: sustaining a high quality of life for current and future generations, where people choose to live, learn, work and play.

“To provide for continued community sustainability, efforts to protect environmental health must be comprehensive. They must also be integrated with community, social and economic values, and recognize that no one element is absolutely achievable at the expense of another.”

– Coquitlam Citywide Official Community Plan

What is Sustainability?

Sustainability is broadly defined as meeting the social, economic and environmental needs of the present generation without compromising the future generation’s ability to meet its needs. Figure 1 shows the three components, or “spheres”, of sustainability and how they are interconnected. Each sphere is essential to develop and maintain a sustainable community. “Livability, health and safety”, “resource efficiency” and “equity” are key features of sustainability that exist in the overlap between the spheres.

Figure 1: The three spheres of sustainability



Sustainability in a Growing Community

Coquitlam is a demographically and environmentally diverse community, where people choose to live, learn, work and play. It is also one of the fastest-growing cities in the country, with a current population of 154,000 and projections by Metro Vancouver for over 255,000 residents by 2050. Growth of this magnitude can create significant pressures on the environment as well as City services and infrastructure, but also creates opportunities to approach development in a way that encourages sustainable choices.

Creating a compact urban area is one of the goals of the Regional Growth Strategy. By concentrating development within Metro Vancouver’s **Urban Containment Boundary**, we minimize our footprint and leave space for natural systems to function and provide valuable **ecosystem services**. Thoughtful and strategic planning is required to ensure that Coquitlam grows in a way that protects and enhances our natural environment while sustaining a high quality of life for current and future generations.

The ESP and the City’s Planning Framework

The ESP aligns with and complements the existing environmental and sustainability policies and goals of the Citywide Official Community Plan (CWOCP) and Strategic Plan as well as those present in many other City plans, bylaws, strategies and policies. In some cases, existing City documents will need to be updated over time to ensure they fully support the goals and strategies presented in the ESP. Figure 2 depicts the City’s planning framework. The ESP is an official City plan which will be reviewed on a 5 to 10-year cycle.



Figure 2: Coquitlam’s Planning Framework



Community engagement, City Centre Library

Our Process of Developing the ESP

Step 1. Initiate Project

Staff from across all City departments were engaged to develop the key themes for the ESP and to identify the City's current status in relation to these themes. The review process also included an inter-municipal survey, an internal document analysis and a review of environmental plans regionally and globally.

Step 2. Initial Community Engagement

External stakeholders, advisory committees, focus groups and the general public were engaged to ensure that the ESP themes and objectives reflect the values and vision of the community.

Step 3. Draft Plan

The plan was drafted incorporating the internal engagement and public consultation feedback. Staff utilized an internal project support team composed of staff experts from all City departments.

Step 4. Third-Party Expert Review

A third-party professional peer review of the draft ESP was completed to confirm the plan includes regional, national and international best practices and policies in environmental sustainability planning.

Step 5. Final Community Engagement

The draft ESP was presented to the public, kwikwə'əłəm First Nation and key stakeholder groups for final review and feedback.

Step 6. Final Plan

The ESP was approved by Council on Jan. 17, 2022.

Coquitlam City Council was consulted throughout the development of the ESP including staff engagement with the City's advisory committees and direct engagement with Council at key milestones.

Community Engagement

Community engagement helped staff identify and understand the priorities, needs and aspirations of stakeholders related to environmental sustainability. This extensive process included two campaigns designed to reach a diverse range of respondents. Feedback collected during this process informed the development and prioritization of goals, strategies and actions included in the ESP.

The first campaign took place in fall 2019 and established the community’s vision and priorities for environmental sustainability. Participants ranked all aspects of environmental sustainability presented in the engagement survey by level of importance and provided thousands of ideas on how the City could advance specific sustainability topics and help the community lead more environmentally sustainable lifestyles. The City referenced this feedback

to align the goals, strategies and actions proposed in the ESP with the community’s needs and priorities. Staff also identified that many suggestions from the public are already being implemented, supporting the need for more education to promote awareness of existing programs.

The second engagement campaign took place in fall 2021 and provided opportunity for the community to give feedback on the draft ESP. Participants identified how well each of the five themes of the ESP addressed the needs of the community and when asked to rank their level of support for the overall plan, 78% of participants were supportive of the plan as a whole. Additionally, the community provided over 1,000 original comments and thoughts on the ESP, which helped facilitate further refinements to the plan.

We engaged with the community in a variety of ways (2019 and 2021):



1,600+
surveys
completed



4,500+
respondent
comments



17 in-person
consultation
sessions



8 virtual
engagement
sessions



10 pop-up
engagement booths



8,600+ web visits
(letstalkcoquitlam.ca/enviroplan
and coquitlam.ca/enviroplan)



500+
YouTube video views

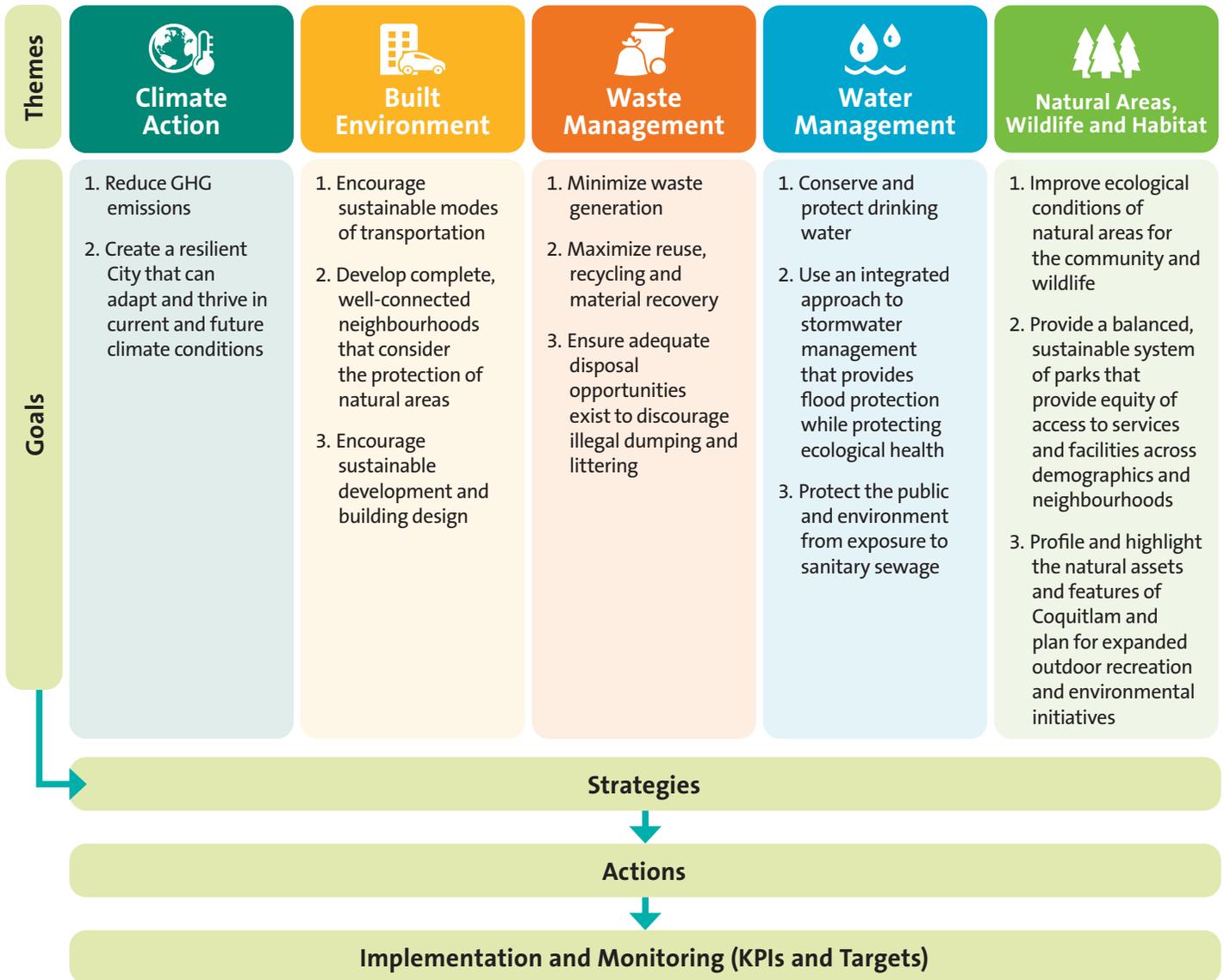
* In-person and virtual consultation sessions included *kʷikwəλəm* First Nation and a variety of stakeholders including City Advisory Committees, the Urban Development Institute, the Coquitlam Youth Council and the Coquitlam River Watershed Roundtable.



ESP engagement sessions

Our Plan at a Glance

Environmental Sustainability Plan Structure



Themes

The Plan is organized into five key themes.

- **Climate Action** – includes greenhouse gas emissions reduction, energy management and climate change adaptation
- **Built Environment** – includes transportation, buildings, land use and urban design
- **Waste Management** – includes reduce, reuse and recycle
- **Water Management** – includes water conservation, water quality, stormwater and watershed management, and liquid waste management
- **Natural Areas, Wildlife and Habitat** – includes watercourses, fish and wildlife, biodiversity, forests and trees, and parks and green spaces

Goals, Strategies and Actions

In each of these five themes, key goals, strategies and actions are identified. To develop the primary goals, strategies and actions Environment Division staff worked closely with an internal project support team (PST), composed of managers and senior staff representatives from departments across the organization. In addition, aggregated survey responses from public engagement were analyzed with the PST to prioritize and include actions in the ESP based on a number of considerations including their environmental benefits, jurisdiction, alignment with other City plans and strategies, co-benefits, legislative requirements, educational value, potential risks and impacts.



Implementation and Monitoring

The themes are followed by an implementation plan which includes a table of high-level cost estimates, proposed timelines and identifies the lead City department. Over time, strategies and actions in the ESP will be updated as progress is made and new information becomes available. Regular reports to Council will summarize progress to date, monitored primarily through a suite of key performance indicators (KPIs). The “ESP Dashboard” provides a snapshot of these KPIs, which are associated with the theme and goals they align with most strongly, recognizing that several KPIs also reflect progress for other themes and goals. Some KPIs include targets where they already exist while others include a desired trend and will undergo further refinement through implementation of the ESP.

A fulsome review and update of the ESP will occur on a 5 to 10-year schedule consistent with other corporate plans.

Recognizing Co-Benefits and Interconnectivity

The ESP focuses primarily on the environmental aspects of sustainability. In each theme, key co-benefits* that advance economic and social sustainability are highlighted to recognize the overlapping and systemic relationship that exists between the three spheres of sustainability and underscore opportunities to streamline resource allocation to advance multiple community priorities. Social and economic actions are addressed more directly in other City plans and strategies including the City’s Financial Plan, Housing Affordability Strategy and Multiculturalism Strategic Plan, which work in tandem with the ESP.

Additionally, the City recognizes there are many overlapping and related environmental sustainability topics that could fit within a number of the five themes. For example, the ESP places most transportation-focused actions in Built Environment, water conservation actions in Water Management and waste reduction actions under Waste Management. However, these topics also address climate action through GHG reductions, climate adaptation or both. Climate action is multi-disciplinary and, therefore, integrated throughout many sectors of the City’s operations which is reflected in the distribution of actions throughout the ESP’s themes.

**The co-benefits referenced in the ESP are inspired by the work of the Simon Fraser University Action on Climate Team’s Integrated Climate Action for BC Communities Initiative.*

Throughout the Plan, terms are bolded to indicate key concepts defined in the Glossary (page 84).



Themes





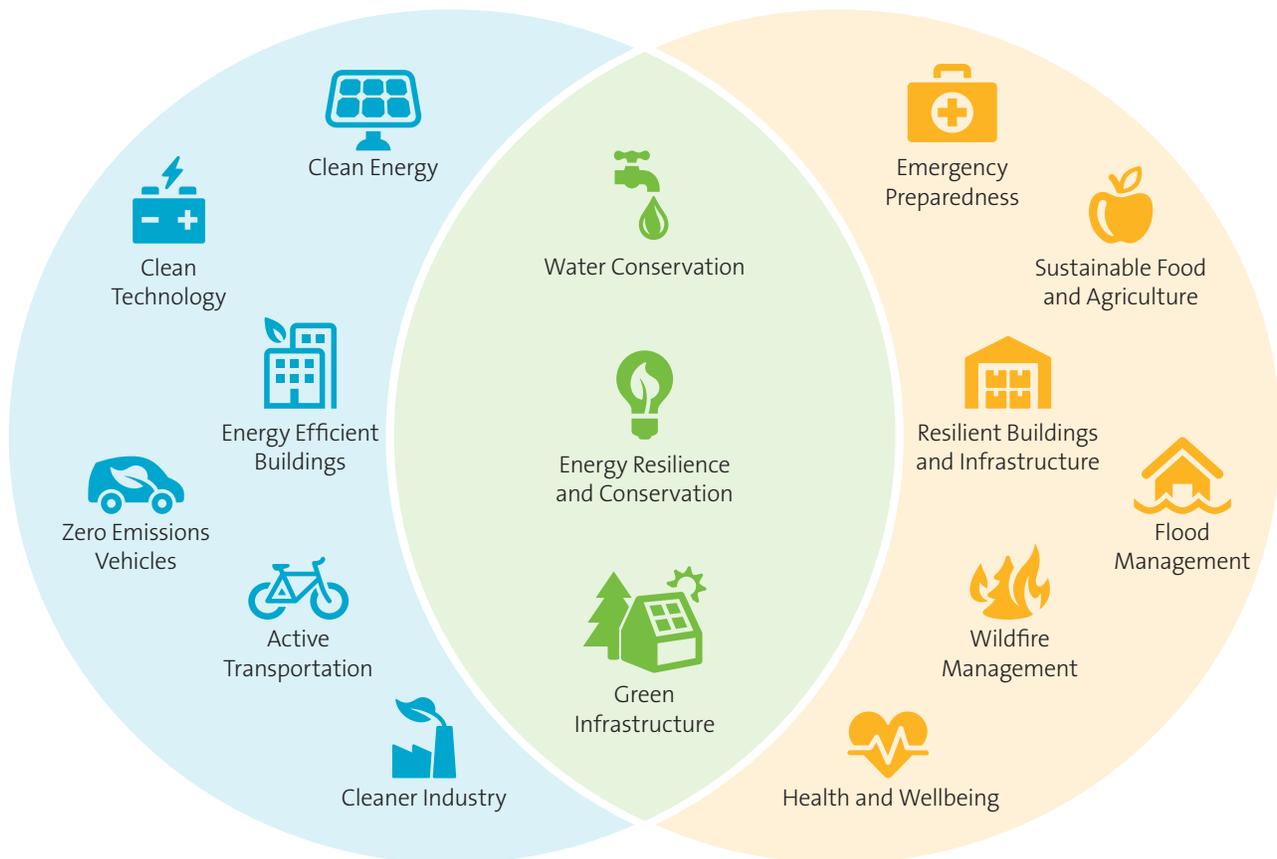
Climate Action

Greenhouse Gas Emissions Reduction | Energy Management | Climate Change Adaptation

UNDERSTANDING CLIMATE ACTION

Climate change is one of the biggest challenges society currently faces. It is disrupting local and global economies, **ecosystems**, infrastructure and people. Effective approaches to address climate change, or “climate action”, include efforts to reduce carbon pollution (also known as mitigation of **greenhouse gas** (GHG) emissions) in order to halt the global temperature increase, as well as adapting to and preparing for the impacts of the changing climate.

Climate mitigation and **climate adaptation** are mutually supportive and by seeking opportunities to integrate them into City plans and strategies, we can achieve **low carbon resilience** and ensure the community is thriving now and into the future.



Climate Mitigation

actions reduce GHG emissions

Low Carbon Resilience

actions address both mitigation and adaptation

Climate Adaptation

actions manage and minimize the risks of climate change impacts

The Intergovernmental Panel on Climate Change (IPCC), a body of the United Nations and the internationally accepted global authority on climate change science, released a Special Report in 2018 describing findings that we must limit global temperatures rise to below 1.5 °C this century to avoid catastrophic climate change impacts. In order to do that, GHG emissions must globally decline by 45% from 2010 levels by 2030 and become **carbon neutral** by approximately 2050. To achieve this, effective action is required by all levels of government, industries, businesses and individuals to limit carbon pollution.

Acting in Alignment to Reduce GHGs

Around the world, governments are taking urgent action on climate change and setting targets that reflect the IPCC Special Report findings. Local, federal, provincial and regional governments have set targets and developed (or are in the process of developing) plans and strategies that align with the IPCC’s global call to action of achieving net zero or carbon neutral emissions by the year 2050. Near term, or 2030 GHG targets, allow governments to ensure progress is advancing at the pace and scale required to meet this long term climate target even though baseline years (the reference year greenhouse gas (GHG) emissions reductions are measured against) vary amongst jurisdictions.

Table 1 details the GHG reduction targets with associated plans and strategies for levels of government that influence climate change policy in Coquitlam and support the actions found in the ESP.

Collectively, senior government policies, if implemented as planned, are anticipated to result in significant reductions in GHG emissions in communities, including Coquitlam.

Table 1: IPCC, Federal, Provincial and Regional Government Climate Targets

	2030 GHG Target	2050 GHG Target	Supportive Plans and Strategies
Intergovernmental Panel on Climate Change (IPCC)	Reduce GHGs by ~45% of 2010 levels	Carbon Neutral	<ul style="list-style-type: none"> IPCC Special Report on Global Warming of 1.5 °C (2018)
Government of Canada	Reduce GHGs by 40-45% of 2005 levels	Carbon Neutral	<ul style="list-style-type: none"> Pan-Canadian Framework on Clean Growth and Climate Change (2016) Achieving a Sustainable Future, A Federal Sustainable Development Strategy for Canada (2019–2022) A Healthy Environment and a Healthy Economy (2020) Canadian Net-Zero Emissions Accountability Act (2021)
Province of BC	Reduce GHGs by 40% of 2007 levels	Net Zero	<ul style="list-style-type: none"> CleanBC Roadmap to 2030 (2021)
Metro Vancouver	Reduce GHGs by 45% of 2010 levels	Carbon Neutral	<ul style="list-style-type: none"> Climate 2050 (in development) Metro 2050 (in development) Clean Air Plan (2021)

Preparing for Climate Change Impacts

It is globally accepted that the climate is already changing and will continue to change despite a united effort to reduce GHGs, making our commitment to local climate change adaptation equally timely and important. Coquitlam will experience impacts due to climate change including shifts in temperature, rainfall, wind and other weather patterns, including more frequent and severe extreme weather events.

Climate change adaptation initiatives as detailed in Coquitlam’s Climate Adaptation Strategic Plan (CASP), aim to reduce the City’s vulnerabilities to these climate-related events while building community **resilience**.

The Federation of Canadian Municipalities and Public Safety Canada estimate that every dollar invested in mitigation efforts saves \$3 to \$5 in recovery costs. In terms of recovery from extreme weather events, it is estimated that the cost of inaction in the future will be more than four times the cost of taking action today. While provincial and federal entities are responsible for much of this planning and investment, local investment in adaptation and resilience by the City is critical to supplement this work of senior governments.

OUR PROGRESS TO DATE



City Centre above Lafarge Lake

Since signing the BC Climate Action Charter in 2007, the City of Coquitlam has steadily worked towards achieving its climate action goals, both corporately and community-wide. In 2012, the City developed a Community Greenhouse Gas (GHG) Reduction Strategy and set targets to reduce community-wide GHG emissions. Since this time, the global collective understanding of the potential impacts of climate change and the needed response to avoid catastrophic impacts has improved.

We have learned that swift and substantive action to reduce GHG emissions is needed to achieve global GHG reductions. As part of the development of the ESP, City of Coquitlam has aligned community and corporate climate action targets to reflect those recommended by the IPCC. These medium and long-term targets provide support and direction for the City to undertake the actions described in this theme and also complement the regional, provincial and federal climate action targets. The new targets are depicted in Figure 3.

Supportive Plans and Polices

- › Climate Adaptation Strategic Plan (2020)
- › Community Greenhouse Gas Reduction Strategy (2012)
- › Community Wildfire Resiliency Plan (2021)
- › Coquitlam Technology Strategy (2018)
- › Corporate Strategic Energy Management Plan (2021)
- › Workplace Sustainable Practices Policy (2014)

Figure 3: Coquitlam’s New Corporate and Community Climate Action Targets

2030 GHG Target

↓ 45%
of 2007 levels

2050 GHG Target

CO₂ Carbon Neutral

Corporate Climate Action

Corporate climate action refers to the actions the City is taking to directly reduce energy and emissions of our operations, as well as improve the resilience of City services and operations to changing climate conditions. Measures taken to reduce corporate GHG emissions and improve corporate energy use include both technology-focused and behaviour change initiatives.

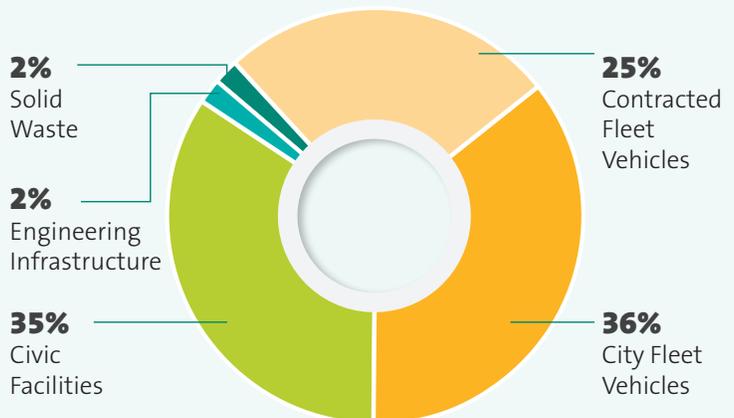
Corporate-level actions are important as the City has direct control over operations and these actions demonstrate leadership to the broader community. Though GHG emissions from corporate operations make up less than 1% of Coquitlam’s total community emissions, corporate GHG reduction initiatives can explore and model promising approaches that can be amplified by the community. Corporate measures to improve resilience are also underway, including new HVAC and upgrades to air filtration systems in several civic facilities to allow them to act as “clean air shelters” during poor air quality events due to wildfire smoke events or high concentrations of air pollutants. The City also considers climate change impacts in emergency response planning, including in the Community Wildfire Resiliency Plan.



Thermenex system at Poirier Sport and Leisure Complex. This low carbon, high-performance HVAC system reuses heat and energy on-site resulting in significant reduction in energy cost and carbon emissions.

As of 2020, the City has achieved an approximate 18% reduction in corporate GHG emissions from civic buildings, vehicle fleet, and operations below the 2007 baseline level despite experiencing a 25% increase in Coquitlam’s population. The majority of Coquitlam’s corporate emissions arise from the operation of civic facilities (e.g. City Hall, recreation centres, outdoor pools), with fleet emissions (including GHGs from contracted services) close behind. The remaining City GHG emissions are from solid waste and operation of City infrastructure.

2020 Corporate GHG Emissions



Community Climate Action

Community climate action refers to the actions the City takes to directly or indirectly reduce GHG emissions generated throughout Coquitlam and improve the resilience of the community to climate change through adaptation measures

Where possible, the City has pursued integrated climate action or low carbon resilience, where both mitigation and adaptation are addressed in tandem. This approach can be primarily seen through the CWOCP, which contains policies to create compact, complete communities and directs most of the future population growth to transit-oriented urban centres. Improvements to green infrastructure, natural assets and ecosystems such as habitat restoration and tree-planting efforts also reduce carbon pollution while increasing resilience.

Community climate action has been embedded into the City’s strategic planning processes through the integration of GHG reduction targets into the City’s CWOCP and Community GHG Reduction Strategy. The Community GHG Reduction Strategy has laid a strong foundation by identifying and advancing opportunities to reduce energy use and GHG emissions in areas such as land use, transportation, energy supply, solid waste and buildings.

The City’s climate mitigation efforts for the community include the promotion of sustainable transportation choices (e.g. through the Strategic Transportation Plan, Transportation Demand Management Strategy and Transit-oriented Development Strategy), and progress in energy efficiency and renewable energy in new buildings (e.g. adoption of the BC Energy Step Code and promotion of CleanBC incentives).

The Province’s CleanBC plan provides a pathway to a low carbon economy that prioritizes the transition to a carbon neutral and resilient province while making solutions, like zero-emission vehicles and home heat pumps, more affordable and available.

Through the Climate Adaptation Strategic Plan, the City has identified local **climate risks**, vulnerabilities and opportunities to increase community resilience. Actions have been developed to address the climate risks of droughts, wildfires, heat waves, drinking water shortages, coastal and inland flooding, and storm events. Implementation and monitoring of this plan is underway, and includes collaboration with neighbouring municipalities and levels of government.

As of 2020, the City has seen a 23% reduction in our per capita community GHG emissions while also observing a 1% increase in our total annual community GHG emissions when compared to the 2007 baseline level. Transportation (both heavy and light-duty vehicles) is responsible for just over half of GHG emissions, followed closely by building emissions (inclusive of residential, commercial and institutional buildings). Solid waste accounts for the remaining slice of community carbon pollution.

2020 Community GHG Emissions





Climate Action Snapshot*

Coquitlam's measures toward climate action include initiatives within the community and corporately.



Corporate and Community Targets (2021)

45% GHG reduction by 2030 of 2007 levels

100% GHG reduction (carbon neutral) by 2050

CORPORATE



30+ initiatives

to engage staff in sustainability actions through Carbon Cutters program

The City's vehicle fleet includes:



9 electric or hybrid vehicles



4 compact energy efficient fire trucks



3 electric zambonis



\$800K

annual energy savings



40

solar powered parking pay stations



60%

streetlights converted to LED



\$1.6 million

earned in grants and rebates since 2007; used to advance climate action



30%

less emissions with automated waste collection and compressed natural gas trucks (vs. diesel)

COMMUNITY



Climate Adaptation:

- **8** priority CASP initiatives implemented in 2021
- **50** climate adaptation actions identified in the CASP (2020)
- **7** local climate risk events assessed through CASP development

Climate Plans

- Climate Adaptation Strategic Plan (CASP) (2020)
- Community Greenhouse Gas Reduction Strategy (2012)

\$120K

residential energy rebates in partnership with BC Hydro



5,000

people reached with energy education programs

* Statistics are current as of January 2021

GOALS, STRATEGIES AND ACTIONS

Goal 1: Reduce GHG emissions

Goal 2: Create a resilient City that can adapt and thrive in current and future climate conditions

Strategy 1: Plan for and track corporate and community GHG emissions reductions

The adoption of new climate action targets requires a new Climate Action Plan for Coquitlam that builds on the progress made to date through the Community GHG Reduction Strategy and corporate Strategic Energy Management Plan while also incorporating new technologies and approaches in low carbon resilience to chart a feasible pathway that achieves our targets. Important elements that will be considered and integrated in the Climate Action Plan’s development include transparent, accessible and reliable tracking and annual reporting, ongoing advocacy and collaboration with other levels of government, and working with contractors who are committed to reducing their GHG emissions. Supportive and locally-relevant policy options will be explored as will ways to increase understanding and awareness of climate change through education opportunities that inspire action and encourage GHG reduction in the community.



Electric vehicle charging station

Actions

1. Develop and implement a new Climate Action Plan that incorporates emerging best practice approaches and innovative technology, and prioritizes actions to achieve the City’s community and corporate climate change targets
2. Annually track and report on current community and corporate GHG emissions and monitor anticipated future scenarios through the use of GHG inventory and modelling tools
3. Advocate to regional, provincial and federal levels of government to improve measures to reduce GHGs through actions such as research, incentive programs, expansion of transit service, progressive building codes and strengthened legislation
4. Develop strategic and collaborative education opportunities to encourage the community to take action to address climate change (e.g. reduce energy use, reduce solid waste, invest in renewable on-site energy, participation in CleanBC incentive programs, planting shade trees)
5. Continue to limit idling of City vehicles and develop new community anti-idling requirements and an associated outreach campaign
6. Foster community-driven climate action projects and initiatives that contribute to community GHG reduction (e.g. Spirit of Coquitlam Grant Program, tree planting programs, Bad Seed program)

Strategy 2: Support renewable energy applications where feasible and cost effective

Changing the way we use energy is key to reducing the City’s emissions with approaches such as increasing energy efficiency, reducing energy consumption and exploring opportunities for innovative **renewable energy** applications. Adoption of clean, low-carbon fuel options is essential and as technology continues to improve these options are becoming more readily available and financially accessible. Additionally, there are increasingly more opportunities available for practical renewable non-grid energy solutions such as solar.

Actions

7. Develop policies and champion pilot projects to encourage renewable energy in civic projects and technology applications (e.g. solar-thermal water heating for outdoor pools, pilot solar powered mobile device charging stations in parks and solar parking pay stations, geothermal opportunity in the development of the Poirier Precinct Master Plan, micro hydropower generators in the water distribution network)
8. Connect residents to renewable energy resources and opportunities for home applications



Solar powered parking meter

Strategy 3: Prepare for and reduce impacts and risks related to climate change

Through the Climate Adaptation Strategic Plan, the City will implement 50 actions to address locally-relevant climate risks. Examples of actions include the revision of storm sewer system design criteria to include climate change factors, development of flood protections plans, promotion of drinking water conservation, supporting a resilient local food system, creating civic clean air shelters and cooling centres, as well as monitoring and maintaining the health of natural ecosystems.



Impacts of flooding

Actions

9. Implement, track and report on the actions in the City’s Climate Adaptation Strategic Plan
10. Support local food systems initiatives (e.g. participation on the Tri-Cities Food Council)
11. Implement the new Community Wildfire Resiliency Plan and advance mutually supportive actions in the Climate Adaptation Strategic Plan to increase community wildfire preparedness and address wildfire climate risk events



Produce market on Austin Avenue

Strategy 4: Support green jobs and the local green economy

Supporting the local economy and local jobs is one of Coquitlam’s five strategic goals identified in the City’s Strategic Plan. Maintaining a strong economy relies on a diverse mix of businesses including green, sustainably-focused and locally-owned companies that provide jobs and retain local prosperity. Innovative companies are preparing for changing climate conditions and will play an important role in supporting the City’s transition to a low carbon and resilient future. Actions in this strategy will provide support and recognition to sustainable businesses and encourage growth in this sector.

Coquitlam’s natural environment is a key asset attracting people to the City and providing many recreational opportunities with high quality recreation amenities including hiking, mountain biking, bird watching and fishing. Through the City’s Economic Action Plan and Tourism Strategy, the City supports and markets local and natural assets to Coquitlam residents and visitors. Promoting and enhancing livability and green innovation will aid the local economy in attracting talent, private capital, visitors and businesses. It will be essential to embed principles of sustainability into upcoming updates to these documents to strengthen their alignment with the ESP.

Actions

12. In partnership with the business community and business associations, provide support and recognition to local businesses who reduce their carbon footprint and green their operations

13. Continue to support and promote sustainable local tourism to Coquitlam residents and visitors

14. Support the local food economy by promoting local makers, bakers, and growers (e.g. farmers markets, food trucks)

15. Collaborate with academic institutions to provide civic-focused learning opportunities to post-secondary students on topics that build job skills, develop local capacity to advance environmental sustainability and attract talent to the City and local businesses

16. Foster and support retention and expansion of local clean technology and innovation by leveraging technology partnerships to advance and solve sustainability challenges in our community and support a sustainable local economy (e.g. Project Greenlight)

Strategy 5: Demonstrate City leadership in sustainability efforts

The City strives to demonstrate responsible public stewardship through environmental sustainability practices in pursuit of one of its strategic goals of “sustainable services, environment and infrastructure”. The City will continue to lead by example, implementing corporately-focused programs and initiatives that integrate sustainability values into the City’s daily operations. Training and engagement opportunities will be offered to staff to support them in modelling sustainable decision-making both personally and professionally. Adopting new technology and changing behaviours will improve and enhance sustainable options in corporate transportation, procurement and environmental monitoring. Climate action and sustainability will also be factored into financial decision-making through review of current investment practices and development of new financial policy.



Electric Zamboni at Poirier Sport and Leisure Complex

Actions

17. Encourage staff to commute sustainably by developing new initiatives and incentives (e.g. consider transit pass subsidy, bike storage and annual bike tune-ups)
18. Motivate sustainable actions in staff through engagement campaigns and policies (e.g. update the City’s Workplace Sustainable Practices Policy and enhance the Carbon Cutters Program)
19. Encourage sustainable staff driving habits through an e-learning civic driver training program
20. Enhance and promote sustainable procurement guidelines
21. Develop and implement a corporate green fleet strategy
22. Research and evaluate low carbon or renewable fuel options for the City’s fleet (e.g. piloting biofuel, low emission diesel, hydrogen)
23. Complete an assessment of environmental technology opportunities (e.g. smart lighting controls, radar, smart sensors)
24. Identify opportunities to gradually implement sustainable and socially-responsible criteria for corporate investments
25. Develop a Carbon Offset Reserve Fund policy to guide decision-making in allocating funds to high-value GHG emission reduction projects

Social and economic co-benefits

The following co-benefit examples are supported through Climate Action initiatives:



Advances equity and social inclusion



Improves public safety, disaster preparedness and emergency response



Promotes a circular economy



Reduces risks to property value



Built Environment

Transportation | Buildings | Land Use and Urban Design

UNDERSTANDING BUILT ENVIRONMENT

The built environment encompasses places and spaces created or modified by people including buildings, transportation systems and the **public realm**. In recent years, public health research has expanded the definition of the built environment to include healthy food access, community gardens, walkability and bikeability as the design of our communities is vitally important to our health and well-being.



Pinetree Way

The Role of City Planning

Coquitlam is one of the fastest growing municipalities in the Lower Mainland and is expected to grow by over 100,000 people by 2050. It's important to monitor and manage growth on regional, city and neighbourhood levels so that new development is livable, attractive and contributes positively to the community – while making sure that community infrastructure and amenities, like parks, are provided to keep pace with growth.

Metro Vancouver's Regional Growth Strategy (RGS) represents the collective vision for how our region is going to accommodate the 1 million people and over 500,000 jobs that are expected to be added to the region in the next 25 years. Metro Vancouver also determines the **Urban Containment Boundary**, which helps ensure we minimize urban sprawl to leave space for the natural systems that provide valuable ecosystem services.

The City continues to work with TransLink on the Transport 2050 plan as well as with Metro Vancouver on Metro 2050 (an update to the RGS), Clean Air Plan and Climate 2050 to inform our approach to buildings and transportation as these influential strategies are developed and implemented.

Like other BC municipalities, Coquitlam has a CWOCP, which provides a vision for the City and outlines how new development, transportation, parks and amenities will evolve over time. The CWOCP represents the City's blueprint for guiding growth based on a balance of the public feedback received, neighbourhood context, technical feasibility and CWOCP goals, objectives and principles.

On a community scale, there are additional opportunities within neighbourhood plans, design guidelines and streetscape guidelines to incorporate sustainable design elements and **green infrastructure**.



Land Use and Urban Design

The City's CWOCP, alongside various land use plans, establishes the direction for effective utilization of land. This includes policy on location, size and character of buildings where we live and work to the placement and share of space allocated to different modes of transportation. Gathering spaces, streetscapes, landscaping and unique features encourage residents and visitors to spend time exploring and enjoying. Urban design features also require careful consideration to ensure they are accessible and welcoming to all. High quality urban design that creates visually interesting, inviting and functional spaces and connects building, transportation and social systems ultimately encourages safe and positive interactions with our urban environment.

Transit-Oriented Development (TOD) is a pedestrian-friendly, compact mixed-use form of development centered on frequent transit. This type of planning aims to provide a more complete variety of uses, housing types and transportation alternatives to cars. Communities that are transit-supportive are also more pedestrian and bicycle-friendly; TODs can significantly influence overall travel patterns. Transit-oriented neighbourhoods are often achieved through high-density, mixed-use developments with abundant ground-level retail, employment uses and a high-quality pedestrian-focused public realm with well-connected street and sidewalk networks.

Parks and Open Spaces

Parks, greenspaces and tree canopy are discussed in great detail within the Natural Areas, Wildlife and Habitat theme of the ESP (page 52). However, their role within Coquitlam's built environment is important to highlight. Parks contribute to the community's carbon sequestration (through the tree canopy), reduce the impact of the **urban heat island effect** and create opportunities for walkable recreation and connection with nature within complete neighbourhoods. The PRC Master Plan calls for equitable and sufficient park access including upholding a 10-minute walking radius for every resident, where possible. Recent neighbourhood plans highlight the need for new and upgraded parks, recreation and cultural public amenities to define the urban fabric, supporting a growing community and ensuring the City is a great place to live, learn, work and play.



Evergreen Skytrain extension

Transportation

A well-connected transportation network and inviting streetscape makes it easier for people to quickly and conveniently walk, roll or cycle to their destination, and shortens the journey by providing more direct routes. While the City is committed to providing greater transportation choices, achieving the City's goal for complete, well-connected neighbourhoods also depends on strong partnerships with regional and senior governments and agencies (e.g. TransLink) to ensure regional transportation facilities support the movement of people, goods and services to, from and through Coquitlam.

Buildings

Buildings generate GHG emissions from burning fossil fuels (e.g. natural gas) typically for space and water heating and account for approximately one third of all GHG emissions in the Metro Vancouver region and just under half of Coquitlam's community GHGs. Carbon pollution from buildings can be reduced through improvements to energy efficiency, energy recovery and switching to low carbon energy systems (e.g. heat pumps, solar, renewable gas and electricity). Implementing the **BC Energy Step Code** will play a key role in increasing new building energy performance and reducing pollution while increasing the comfort of building users. Actions taken today to reduce community and corporate building GHG emissions will have a long-term impact because many buildings that exist today will still be in use in 2050.

OUR PROGRESS TO DATE

The City has been advancing initiatives to progress sustainable land use, promote sustainable transportation choices, facilitate green buildings and promote people-friendly public spaces.

Supportive Plans and Policies

- Neighbourhood and Area Plans
- Neighborhood Plan Streetscape Guidelines
- Parks, Recreation and Culture Master Plan (2017)
- Rainwater Management – Source Controls Design Requirements and Guidelines (2009)
- Strategic Transportation Plan (2012)
- Transit-Oriented Development Strategy (2012)
- Transportation Demand Management Plan Guidelines

Land Use Planning and Urban Design

The CWOCP and its Area Plans and Neighbourhood Plans provide guidance on community development that encourages high-quality urban design, promotes housing affordability and ensures new development contributes to Coquitlam’s high quality of life. The CWOCP directs over half of new development to the City’s TOD areas in City Centre and Burquitlam-Lougheed. A further 30% of new development is directed to existing neighbourhood centres such as Austin Heights and Maillardville and to infill housing in existing neighbourhoods through the City’s Housing Choices program.

Through the development of civic facilities, parks and public amenities the City integrates opportunities to incorporate welcoming and sustainable urban design to create people-focused places to gather alongside trusted technologies that reduce carbon pollution and encourage connectedness amongst our communities.

TransLink’s Transit Oriented Communities Design Guidelines and the City’s Transit-Oriented Development Strategy complement one another to ensure new development around SkyTrain stations follows the principles of supportive densities, pedestrian-friendly streets and a mix of land uses to allow more people to live and work close to high quality transit service and continues to inform Coquitlam’s CWOCP to foster more sustainable transportation choices. With the Evergreen Line opening in 2017 and the City’s efforts to densify around stations, a positive mode shift in TOD areas has already been observed.

Further, Watercourse Protection Development Permit Area and Integrated Watershed Management Plans (IWMPs) limit the impacts of development on natural areas and maintain green spaces in neighbourhoods for the benefit of both residents and ecosystems. Various City plans and bylaws ensure that environmentally sensitive areas and features are identified, protected or restored, that the quality of water and runoff to receiving watercourses is maintained as close to (or improved) pre-development application conditions as possible, and that riparian areas along the watercourses are protected in accordance with the Riparian Areas Protection Regulation standards.



Multi-use path adjacent to Lougheed Highway



Austin Heights

Transportation Planning

In a large geographic community like Coquitlam, getting around the City safely and conveniently is a top priority for the public. Recognizing that transportation is the biggest source of community GHG emissions, the City endeavors to make it easier to walk, roll or cycle to SkyTrain stations, bus routes and neighbourhood centres. The City also plays a direct role in encouraging mode shift, and supports a transition to transportation electrification by passing enabling legislation and providing public battery charging infrastructure. Together, these measures empower residents to make sustainable decisions about our transportation system that can also greatly reduce our carbon pollution.

The Strategic Transportation Plan (STP) outlines high-level transportation policies and potential improvements for all types of travel. The vision of the STP is to enhance the liveability and sustainability of the community by providing accessible, safe and convenient transportation choices with a greater emphasis on transit, walking or rolling and cycling with a target that 30% of all trips are made by **active transportation** or transit by 2031. Recent neighbourhood plans, Burquitlam-Lougheed Neighbourhood Plan (BLNP) and City Centre Area Plan (CCAP) have been crafted to enable sustainable transportation choices throughout these communities. Low carbon active transportation, such as cycling, has additional benefits such as increased health and wellbeing and is enabled through features such as bike lanes and treed streets. Transit oriented development is further supported by the City's interdepartmental TOD Application Team.

Buildings

The City is advancing the implementation of the BC Energy Step Code for all new construction in the City, achieving net-zero energy efficient buildings in advance of federal and provincial target dates. Implementation of the BC Energy Step Code will also assist in reducing GHG emissions from new buildings, resulting in lessened environmental impacts from these sources and aiding in efforts to reach our community GHG emissions target and supporting federal and provincial climate action goals. City staff have actively prepared for the roll-out and implementation of these energy performance improvements to ensure the City's incremental, staged approach is embraced by the development industry.

Corporately, the City has implemented a variety of programs to reduce the environmental impact and increase the resiliency of City-owned and operated buildings. There are opportunities to apply a sustainability lens when considering upgrading building components or replacing critical end-of-life facilities to ensure energy efficiency and low carbon retrofits are identified through the City's ongoing facility upgrade program and building energy management projects.

The City is also actively assessing and incorporating new high-efficiency technologies to minimize civic building GHG emissions associated with growth in services and infrastructure such as the fully-electric Place Maillardville replacement



Built Environment Snapshot

Coquitlam has implemented an environmental focus on development, buildings, infrastructure and transportation systems.

TRANSPORTATION (2021)

25 km
on-street
bike lanes

2
free bike
maintenance stations

20%
current sustainable
mode share*

28 km
shared bikeways

32 km
multi-use pathways



KEY BYLAWS

- Building Bylaw (2003)
- Development Procedures Bylaw (2009)
- Stream and Drainage System Protection Bylaw (2013)
- Subdivision and Development Servicing Bylaw (2003)
- Zoning Bylaw (1996)



Target:

30% sustainable mode share* by 2031

*What is sustainable mode share?

Sustainable mode share = the number of transit, bike or walking trips divided by the total trips over the same time period

PLANNING AND DEVELOPMENT

144
Watercourse
Protection
Development
Permits (2021)

60%
of new growth
directed
to TOD areas
(2016–2020)

80%
of new growth
occurring
within existing
neighbourhoods
(2016–2020)

BUILDINGS

35 City facilities with
energy upgrades

*BC Energy Step Code
endorsed by City Council
on May 17, 2021*



36% of residents live
within walking distance
of a Frequent Transit
Network (2021)



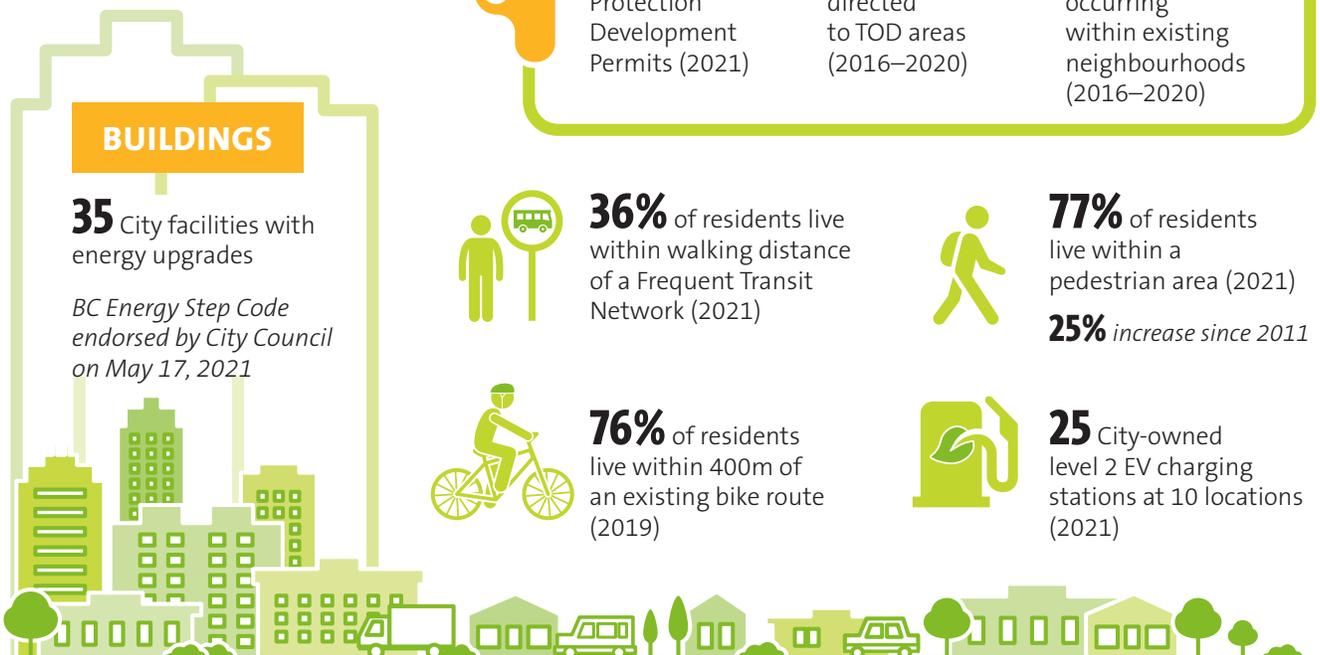
77% of residents
live within a
pedestrian area (2021)
25% increase since 2011



76% of residents
live within 400m of
an existing bike route
(2019)



25 City-owned
level 2 EV charging
stations at 10 locations
(2021)





GOALS, STRATEGIES AND ACTIONS

Goal 1: Encourage sustainable modes of transportation

Goal 2: Develop complete, well-connected neighbourhoods that consider the protection of natural areas

Goal 3: Encourage sustainable development and building design

Strategy 1: Prioritize walking, cycling and transit

The City aims to prioritize transportation options that help us meet our climate change targets without compromising the natural environment while also providing inviting, safe, convenient and efficient modes of travel.

The City will continue to invest in wider sidewalks, separated bike facilities, multi-use pathways, treed boulevards and other infrastructure and streetscape elements that support and encourage a higher sustainable mode share and percentage of zero emission vehicles. Through partnerships, new programs, education and creative strategies, the City will work towards its vision of walkable, complete and transit-oriented neighbourhoods that feature a mix of housing types and access to amenities.

It will also continue to advocate for improved transit service and reliable regional goods movement corridors with regional and provincial partners. The provision of infrastructure will be accompanied by a set of supporting transportation demand management measures that will help to incentivize behaviour change.

Actions

26. Require transportation demand management measures in new developments, neighbourhood centres and the City Centre (e.g. car sharing, bike end-of-trip facilities, telecommuting, parking management)
27. Work with key partners to promote education and outreach initiatives that support active transportation (e.g. HUB, SD43 and TransLink)
28. Prepare planning and development strategies for transit supportive development (e.g. following best practices for transit-oriented development, corridor design to develop complete streets, density and diversity of housing to support frequent transit services)
29. Develop and support programs and campaigns that create safe cycling opportunities for all ages and abilities (e.g. pilot a Learn2Ride program, update school travel plans, update cycling maps, Go-By-Bike campaign)
30. Work with TransLink to prepare plans and strategies for transit service expansion (e.g. through Transport 2050)
31. Implement mobility hubs in Transit Oriented Development areas to increase transportation choice for residents
32. Develop policies, regulations and streetscape guidelines to manage curb space safely and efficiently, with an emphasis on encouraging walking, cycling, transit and shared mobility
33. Develop a comprehensive pedestrian, cycling and accessibility plan as a part of future updates to the Strategic Transportation Plan
34. Explore and implement solutions for first and last km transportation (e.g. e-bike share, short-term electric bike rentals)



Public bicycle repair station, City Centre Aquatics Complex

Strategy 2: Increase electric vehicle (EV) usage

Trips by personal motor vehicles are still the most popular mode of transportation and account for the largest portion of total kilometres travelled within Metro Vancouver. Electric vehicles (EVs) provide personal vehicle transportation with minimal carbon pollution and continue to gain momentum among the public, spurred by more cost competitive vehicles, supporting infrastructure, senior government policies (including the federal policy for all new light-duty vehicles to be zero-emission by 2035) and financial incentives.

The City promotes renewably-powered transportation by incorporating electric and hybrid vehicles into the City fleet and through the installation of electric vehicle charging stations at public and civic facilities. Development of an Electric Mobility Strategy will support ongoing electrification and “e-mobility” in the City.

Actions

35. Develop an Electric Mobility Strategy to advance vehicle electrification and support greater e-mobility in the City (e.g. develop an electric vehicle charging strategy, identify barriers to community e-mobility, review City fleet inventory for opportunities to transition to electrification and explore business cases around e-mobility)
36. Promote and support incentives (e.g. preferential parking) for electric vehicle ownership and charging infrastructure and deliver enhanced outreach and education



Electric vehicle charging station



Healing Spirit House in sɛmiq̓wəʔelə is designed to LEED Gold standards

Strategy 3: Support sustainable building, construction, renovation and development practices

The City will seek opportunities to reduce carbon pollution from new buildings, and support options for existing buildings, through policy that encourages energy efficient design retrofits, adaptive reuse and low carbon energy use. Actions such as adoption of the BC Energy Step Code, zoning updates, education and incentives will promote and increase the implementation of more sustainable building practices.

Actions
37. Implement BC Energy Step Code requirements for new building permit applications in advance of provincial adoption schedule
38. Develop a tracking, monitoring and reporting system for BC Energy Step Code buildings
39. Promote new development to meet a recognized sustainable building standard (e.g. LEED, PassivHaus, National Green Building Standard)
40. Promote sustainable building incentives such as the CleanBC's Better Homes and Better Buildings Programs and consider providing top-up incentives (e.g. heat pumps)
41. Pilot a program to increase industry and homeowner awareness and capacity for energy efficient upgrades and retrofits for existing buildings (identify grants and partnerships to support the program)
42. Encourage developers to investigate a variety of approaches to reduce the energy demand and GHG emissions of their buildings and developments including district energy systems and low carbon systems
43. Support opportunities, partnerships and programs for deep energy retrofits of existing buildings (e.g. the Reframed initiative has selected a social housing building in Coquitlam for their retrofit program)
44. Continue to investigate opportunities to support encapsulated mass timber construction
45. Encourage and enable the adaptive reuse of the existing building stock where appropriate



LED lighting upgrade at Poirier Sport and Leisure Complex

Strategy 4: Include sustainability planning in the development of new civic facilities and the maintenance of existing facilities

By taking a leadership role in the development of resilient, low carbon buildings and renewable energy, the City showcases projects that are cost effective for the building’s life cycle and help to meet climate targets and sustainability goals.

Actions
46. Continue to upgrade, retrofit and apply cost-effective climate adaptive design to aging civic facilities and infrastructure
47. Develop sustainable design guidelines for new civic buildings and build new facilities to performance-based standards that minimize the need for large-scale retrofits within the lifespan of the building
48. Target sustainable design and operational elements that reduce corporate energy costs and GHG emissions with acceptable payback period or return on investment
49. Contemplate using the Northeast Community Centre project to pilot the development of a “sustainability plan”, including a cost benefit analysis, for Council consideration
50. Implement BC Energy Step Code requirements for new civic facilities
51. Provide end of trip cycling facilities as a part of all new civic facility developments (e.g. secure bike and gear storage, change rooms, showers, electric bike charging stations)
52. Complete an assessment of smart building technology opportunities for civic facilities (e.g. machine to machine communications and automation, artificial intelligence, expand use of smart sprinklers)
53. Apply a climate lens to strategic building asset planning informed by energy audits, building envelope evaluation, climate risk assessments and green infrastructure opportunities to support decision-making



Strategy 5: Implement sustainable development practices that minimize impacts on natural areas and habitat

When looking to sustainably grow and develop, **natural assets** and green infrastructure like trees, streams and parks are important to consider alongside the **grey infrastructure** we typically associate with the built environment. By concentrating development and growth within Metro Vancouver’s Urban Containment Boundary, we minimize our footprint and leave space for natural systems to function and provide valuable ecosystem services. City plans such as the CWOCP, Neighbourhood Plans and Integrated Watershed Management Plans also provide guidance to limit the impacts of development on natural areas.

Provincial regulations such as the Riparian Area Protection Regulations and tools like Watercourse Protection Development Permit Areas and the Stream and Drainage System Protection Bylaw allow for the careful planning and monitoring of development projects in the community and provide points of intervention to ensure that our valuable natural areas are minimally impacted and able to thrive.

Actions
54. Direct the majority of growth into Urban Centres and SkyTrain Station areas
55. Explore opportunities to integrate natural asset management and inventory programs including valuation of ecosystem services into the City’s conventional asset management program
56. Continue enforcement of environmental requirements for construction projects (e.g. erosion and sediment control, zoning requirements, Riparian Areas Protection Regulation and stormwater management)
57. Explore opportunities to expand Watercourse Protection Development Permit Area requirements citywide
58. Create tools, policy and processes that support best management practices for sustainable development (e.g. sustainable development checklist/scorecard, development permit guidelines update)



Enforcement of environment requirements by City Staff on a construction project



Urban design at Rochester Park

Strategy 6: Prioritize opportunities to incorporate urban design features and public realm elements that contribute to making neighbourhoods livable, sustainable and green

Urban design and the **public realm** play an important role in how people experience the City. By ensuring that new development is walkable, transit supportive, displays a high degree of architectural excellence and complements the surrounding land use, the livability of the City becomes enhanced and establishes community pride. Integrating green design features into existing neighbourhoods further supports the liveability of the overall community and can improve **urban green equity** in established areas of the City.

The City will explore innovative ways to incorporate green design features into new and existing neighbourhoods and commercial zones through pilot projects and neighbourhood planning frameworks.

Actions
59. Implement a pop-up green street pilot program that reimagines and repurposes portions of road right of ways to create unique and vibrant pedestrian-oriented public open spaces
60. Identify and pursue opportunities to add and retain green infrastructure and features (e.g. street trees, bioswales, new parks, green walls, etc.) to neighbourhoods through neighbourhood plans, streetscape and design guidelines and other relevant plans or programs (e.g. Roadway and Streetscape Enhancement Program)
61. Explore ways to support the inclusion of small scale pocket habitat and recreational gardens in new developments
62. Ensure boulevard tree planting specifications for City and development projects are resilient in a changing climate (e.g. species selection, soil availability)

Social and economic co-benefits

The following co-benefit examples are supported through Built Environment initiatives:



Enhances human health and well-being



Advances equity and social inclusion



Improves community livability and vitality



Reduces costs/ increases savings



Supports clean energy transition



Waste Management

Reduce | Reuse | Recycle

UNDERSTANDING WASTE MANAGEMENT

Environmental sustainability requires the careful conservation, protection and efficient use of resources, and delivering effective waste management services is critically important to help achieve this goal. Waste management broadly encompasses reducing, reusing, recycling and disposal of solid waste. In Canada, the responsibility for managing and reducing waste is shared among federal, provincial, territorial, regional and municipal governments.



Organics bin

Working in Alignment

The City provides a wide range of solid waste services directly to residents and manages solid waste generated throughout its network of parks, civic facilities, streetscapes and other public lands. However, waste management for sectors outside of the City's authority (such as Industrial, Commercial and Institutional (ICI) and multi-family) is largely governed by other levels of government making partnerships and collaboration important for making progress towards regional diversion and waste reduction goals.

The Province of BC requires its regions to develop solid waste management plans. Metro Vancouver worked collaboratively with its municipal members and stakeholders to develop the current Integrated Solid Waste and Resource Management Plan (ISWRMP). This Plan was approved by the Province in 2011 and is scheduled to be updated in the next three years. The ISWRMP continues to provide direction and guidance to local governments on the goals and targets for waste management actions throughout the region, including the aspirational goal to divert 80% of the region's solid waste. Two of the primary goals of the regional plan are also goals of the ESP: minimizing waste generation, and maximizing reuse, recycling and material recovery. Metro Vancouver's goal is to increase the **waste diversion** rate to 80% through a combination of public education as well as regulatory and economic tools, including expanding regional disposal bans.

The Federal Government controls international and interprovincial movements of hazardous waste and hazardous recyclable material, as well as identifies best practices that will reduce to a minimum the possible toxic pollution from the management of waste. In addition, the Canada-wide Strategy on Zero Plastic Waste approved

in 2018 includes efforts to ban single-use plastics to reduce plastic waste overall and to work with provinces and territories to develop consistent extended producer responsibility programs, so the same rules for collection and recycling apply to all companies that produce plastic products.

Circular Economy

The linear way our economies use and dispose of resources puts pressure on natural systems, communities and public health. Finding new approaches and technologies that create jobs, promote innovation and protect the environment while utilizing materials that are typically thrown away are important aspects in the transition to a low carbon economy.

The circular economy has been gaining global momentum in recent years. Defined by the Federal Government as a "new way of doing business that extracts as much value as possible from resources by recycling, repairing, reusing, repurposing, or refurbishing products and materials — eliminating waste and GHG emissions at the design stage", the circular economy has the long-term goal of designing out the concept of waste.

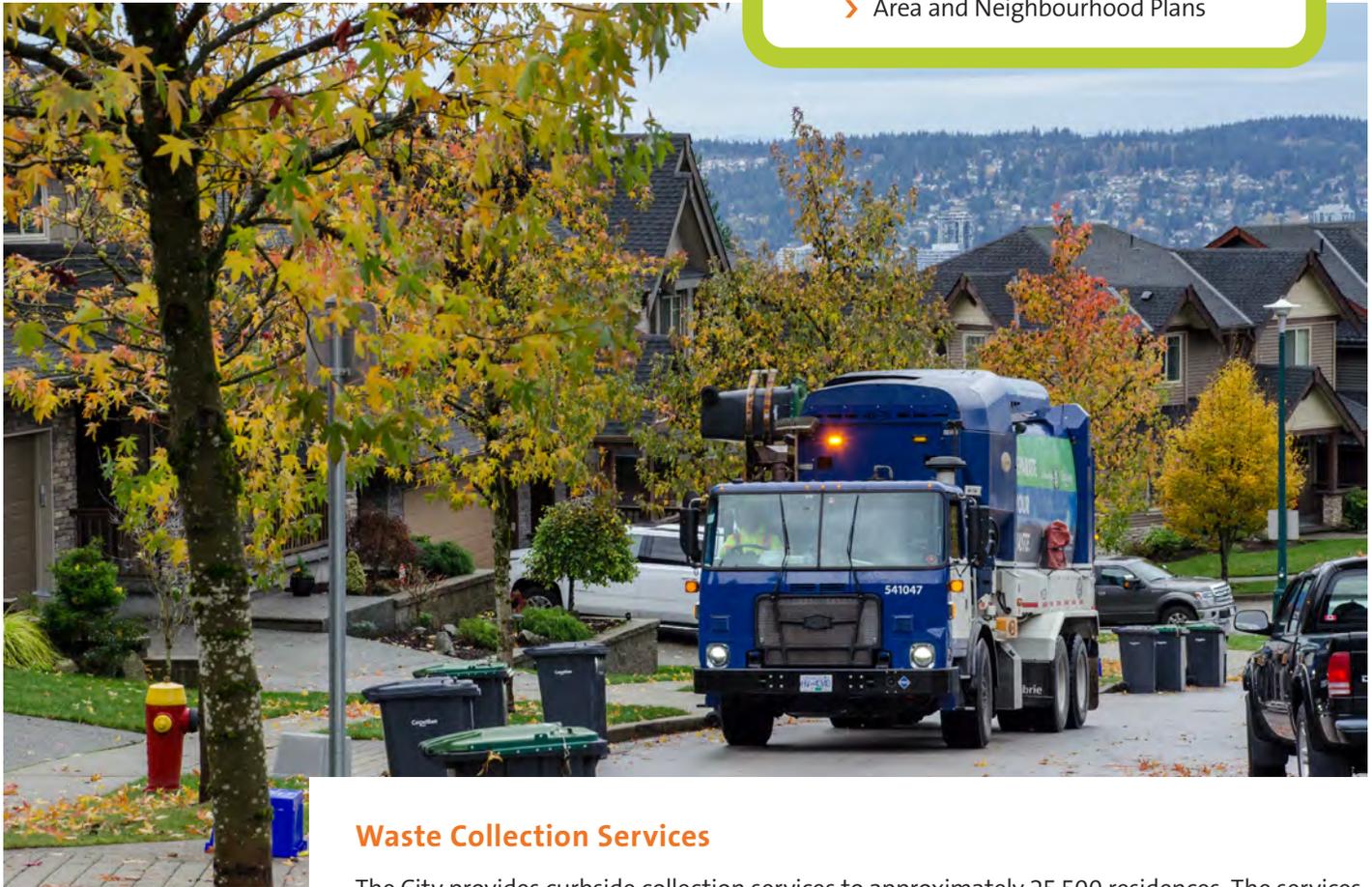
Opportunities for municipalities to align with and support a circular economy are increasingly available within corporate operations as well as through supportive actions within the residential and business communities. The concept is also supported at a regional level. Acceleration of waste reduction and diversion while reducing GHGs is being integrated into Metro Vancouver's ISWRMP update.

OUR PROGRESS TO DATE

Metro Vancouver reported the 2020 regional residential diversion rate of 64% is among the highest in North America. In 2020, Coquitlam residential properties receiving the City’s curbside collection services achieved an even higher rate of almost 71% waste diverted to be recycled and composted. In addition, the annual waste generation of 0.37 tonnes per household is 36% lower than the regional average.

Supportive Plans and Policies

- Bear Hazard Assessment (2007)
- Development Permit Guidelines
- Area and Neighbourhood Plans



Waste Collection Services

The City provides curbside collection services to approximately 25,500 residences. The services include bi-weekly collection of garbage and weekly collection of organics (food scraps, food-soiled paper and yard trimmings), pick up of up to four large items per household per year on request, and unlimited curbside yard trimmings collection in the spring and fall. Separating household waste correctly is a requirement of the City’s Solid Waste Management Bylaw. Education programs and enforcement of these requirements support ongoing waste diversion within the curbside collection program.

The City also provides wildlife-resistant public waste and recycling receptacles and collects litter and abandoned materials from an extensive network of parks and trails, streets and sidewalks. All the City’s civic facilities and recreation centres have labelled waste sorting and recycling stations, which provide visitors and staff the opportunity to correctly sort their materials and reduce the volume of solid waste.

Littering and Illegal Dumping

Abandoning unwanted materials such as general household waste, furniture and yard trimmings on private or public property (including parks and natural areas) is an expensive and unsustainable practice prohibited by the City’s Litter and Desecration Prohibition Bylaw. Convenience and personal cost savings are undoubtedly primary drivers for illegal dumping, but a lack of awareness of acceptable and often free disposal alternatives may also be a factor. The City dedicates considerable resources to maintaining a safe and clean environment and enforces its bylaws whenever possible to ensure accountability of those responsible.

Recycling and Composting

Recycle BC is an industry-funded organization responsible for residential packaging and paper product recycling throughout the province. In Coquitlam, Recycle BC manages the residential blue box, yellow bag and glass container curbside recycling collection program and pays for 100% of the costs to administer this program.

The City partners with service providers to provide additional recycling opportunities for its residents. For example, the City covers the disposal costs for residents who self-haul their green waste year-round to the United Boulevard Recycling and Waste Centre, a Metro Vancouver-run facility. The organics processor contracted by the City currently provides approximately 1,000 bags of finished compost each year for free distribution to Coquitlam residents as a value-added benefit and a way of “closing the loop” on the organics collected from Coquitlam curbsides.

The Town Centre Park Recycling Depot is a City-owned facility where residents may drop off a variety of recyclable materials including cardboard, mixed paper, newspaper, books, household containers, white Styrofoam, household batteries and plastic bags for recycling at no cost.

Events and Programs

The City sponsors the Citywide Garage Sale and Give-away events to help promote residents’ personal recycling and reuse efforts. For schools and community groups, the City provides an award-winning program of interactive educational workshops on waste reduction and recycling. The City has also developed a database of appropriate recycling and disposal alternatives for the public called the Waste Wizard that is accessible through the City’s website and through Recollect, the free Coquitlam Curbside Collection App.



Litter clean up



Free compost giveaway event



Garbage and recycling educational booth



Waste Management Snapshot

Coquitlam's waste management programs support residents in reducing, reusing and recycling waste.

A GLANCE AT WASTE MANAGEMENT (2020)



+25,000 single family and duplex homes received City collection



+26,000 tonnes garbage and green waste collected

>60% of households subscribed to Coquitlam's Curbside Collection App, the City's waste collection app for collection reminders'



0.37 tonnes garbage generated per household annually
36% lower than regional rate



1,200 households participated in the Citywide Garage Sale since 2014



12% of households use the smallest garbage cart (120 L size) offered in the City's waste program

9,600 items collected in large Item Pick-Up Collection program



499 tonnes collected and composted in Seasonal Unlimited Yard Trimmings program



CITY WASTE PROGRAM HIGHLIGHTS



71% diversion rate by single family households (2020)
64% – Regional rate (2020)



+180 tonnes household recyclables collected annually at Town Centre Recycling Depot

>350,000 Waste Wizard item searches on ReCollect app (2015–2021)



Target:
80% waste diversion



2,700 participants in City school waste reduction program (2017–2020)



500 backyard composters sold to residents since 2014

GOALS, STRATEGIES AND ACTIONS

Goal 1: Minimize waste generation

Goal 2: Maximize reuse, recycling and material recovery

Goal 3: Ensure adequate disposal opportunities exist to discourage illegal dumping and littering

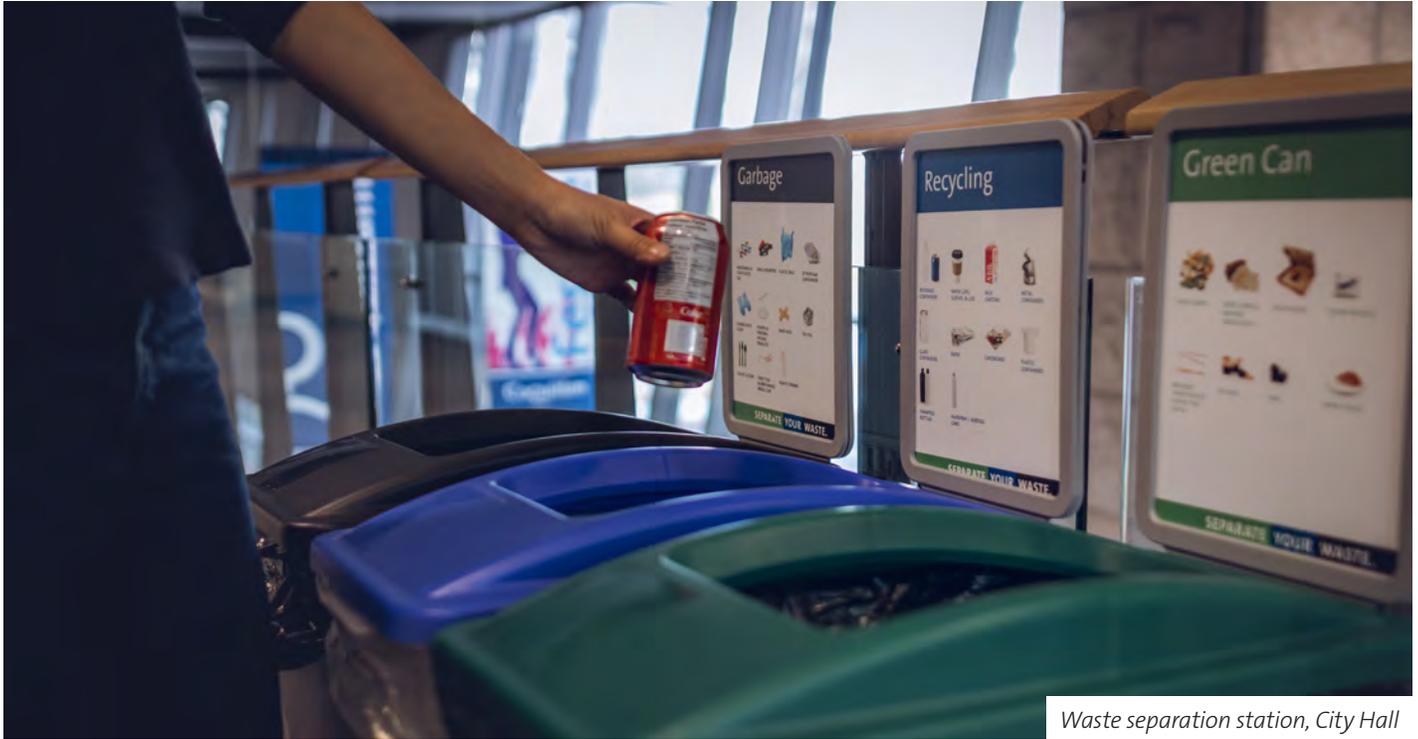
Strategy 1: Reduce waste and increase diversion of recyclable and organic material from the residential waste stream

Improving awareness and access to relevant information and programs provides residents with the knowledge to reduce waste generation and dispose of waste appropriately.

In collaboration with partners such as Metro Vancouver and Provincial Extended Producer Responsibility (EPR) Programs, the City will promote sustainable disposal of key items not accepted for recycling at the curb and identify opportunities to improve recycling and waste management specifically in multi-family buildings. The City will actively promote services available at the United Boulevard Recycling and Waste Centre.

The City will also continue to advocate through the Province and stewardship programs to expand items accepted for recycling through EPR programs.

Actions
63. Expand current programs and develop new initiatives to educate residents and schools about waste generation, recycling, reusing and food waste (e.g. Metro Vancouver Love Food Hate Waste Campaign)
64. Assess service delivery options to increase diversion of recyclable and organic materials
65. Reduce improper sorting of residential waste through education and enforcement of the Solid Waste Management Bylaw
66. Identify and promote incentives to reduce waste (e.g. eliminate exchange fees for switching to a smaller garbage cart, promote the cost saving benefits associated with reducing waste and overall consumption)
67. Promote item sharing and swapping programs (e.g. tool libraries, sports equipment sharing in parks, library loan programs and Little Free Libraries, repair cafés)
68. Advocate for enhanced recycling options through the Province and EPR programs (e.g. textiles, electronics, large items including mattresses and furniture, Styrofoam, plastic bags, batteries from electric vehicles)
69. Assess opportunities to extend existing residential waste reduction programs to multi-family (e.g. large item pick-up program)



Waste separation station, City Hall

Strategy 2: Reduce waste and increase diversion of recyclable and organic material at businesses and institutions

The City does not collect materials from the ICI sector or the Construction and Demolition (C&D) sector. Metro Vancouver maintains relationships with businesses and institutions in both of these sectors and develops information and programs to assist them. The City will maintain a strong relationship with Metro Vancouver to help promote their messaging to the ICI sector, collaborate with local business associations and explore partnerships with local institutions to promote sustainable waste management practices.

The City will also explore its ability to increase monitoring of the waste disposal and recycling practices of the C&D sector through the City’s permitting processes.

Actions

- 70. Explore partnerships to promote sustainable waste management with institutions such as School District 43
- 71. Evaluate, prepare, and prioritize guidelines for construction and demolition (deconstruction) materials to encourage the recycling and reuse of building materials where feasible (e.g. educational resources, recycling program, integrate with CleanBC Better Buildings programs)
- 72. Collaborate with local business associations and Metro Vancouver to promote waste reduction and recycling for businesses (e.g. Promoting Metro Vancouver’s food recovery network)
- 73. Look for education and programming opportunities to support the regional approach in addressing food waste



Strategy 3: Reduce waste and increase waste diversion in civic facilities, parks and at City events

The City already provides waste sorting stations at civic facilities. Ensuring that waste separation is simple, convenient and consistent throughout the City will improve the correct usage of these amenities, help drive behaviour change and further increase waste diversion. Opportunities to specifically support waste diversion in parks will be investigated through the review and update of the Parks Solid Waste Management Plan.

Actions	
74.	Continue to provide waste separation at civic facilities and promote recycling initiatives such as battery and office supplies recycling
75.	Continue to require waste separation at large City events (>100 participants) and consider expanding these requirements to smaller events
76.	Review and update the Parks Solid Waste Management Plan

Strategy 4. Minimize the use of single-use items

Reducing single-use items is a topic of great interest globally, nationally and locally. Coquitlam is no exception and through the development of the ESP, residents identified the reduction of single-use items as an important measure of sustainability.

Provincial and federal governments have taken big steps toward banning many single-use items. In September 2020, the Province announced the approval of some local bans on single-use plastics, and in July 2021 amended a regulation to allow local governments to ban certain types of single-use plastics as part of the CleanBC Plastics Action Plan. In October 2020, the Government of Canada announced their proposed ban of single-use items, including plastic checkout bags, straws, stir sticks, six-pack rings, cutlery and foodware made from hard-to-recycle plastics, as a part of Canada’s plan to achieve zero plastic waste by 2030.

Metro Vancouver and the Union of BC Municipalities have requested the Province develop regulations regarding the use of single-use items. Regulations at that level would ensure clarity and consistency in the approach to regulating these items across B.C. and more details on a new legal framework to facilitate province-wide bans on single-use items is expected in 2022. At a more local level, in 2021 in response to advocacy by Coquitlam and other municipalities, Metro Vancouver committed to developing a framework for municipal single-use item reduction bylaws within the region. In November 2021, the Regionally Harmonized Approach to Municipal Single-Use Item Reduction Bylaws was approved by the Metro Vancouver Board and provides a consistent regional approach for municipalities to consider and adopt that also aligns with the newly amended provincial regulation.

Actions	
77.	Continue to advocate for the development of consistent single-use item strategies and regulations within the context of federal and provincial frameworks
78.	Implement a single-use item bylaw that reflects the regional approach developed by Metro Vancouver
79.	Promote reusable alternatives to single-use items to reduce consumption



Reusable bag and containers

Strategy 5. Reduce illegal dumping and littering

Illegal dumping and littering are prohibited and unsustainable practices that negatively impact the environment as well as public and private property. Raising public awareness of existing alternatives to dispose of or reuse items as well as supporting and exploring new convenient and cost-effective disposal options will be the City’s focus to address this issue.

Actions
80. Reduce illegal dumping and littering through education and bylaw enforcement programs
81. Pilot a Pop-up Junk Drop program to facilitate convenient disposal of items such as hazardous waste and large items
82. Continue to encourage item reuse through existing programs (e.g. Citywide Garage Sale and Give-away) and explore new programs (e.g. Repair Cafés)

Social and economic co-benefits

The following co-benefit examples are supported through Waste Management initiatives:



Improves public safety, disaster preparedness and emergency response



Avoid community damages and costs over time



Promotes a circular economy



Fosters innovation and green, clean industries



Supports local food security

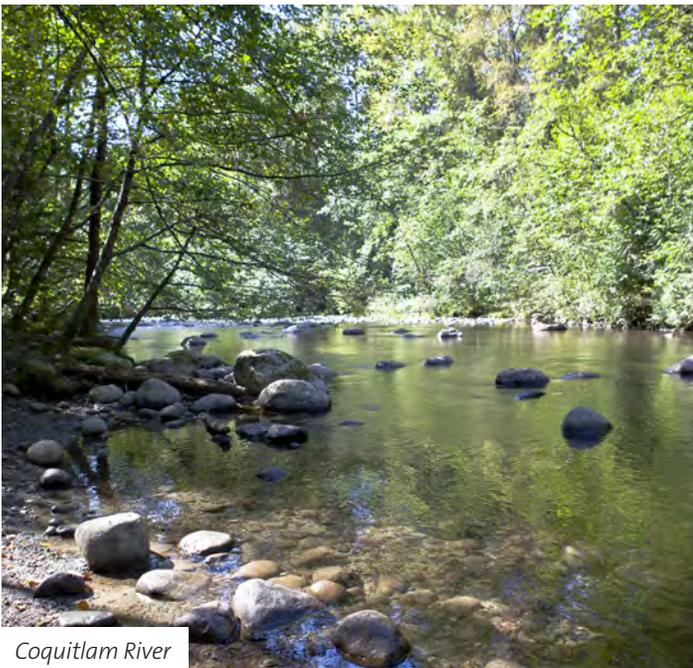


Water Management

Water Conservation | Water Quality | Stormwater and Watershed Management | Liquid Waste Management

UNDERSTANDING WATER MANAGEMENT

Water management in Coquitlam includes planning, developing and managing the quality and quantity of all water resources. In Metro Vancouver, we have access to a high-quality drinking water supply. Meeting fluctuating seasonal demands for residential water use alongside commercial, agricultural and industrial needs and ensuring that wastewater is efficiently conveyed and processed are challenges that remain a high priority for the City and other levels of government.



Coquitlam River



Coquitlam Lake Reservoir

Water Management and Climate Change

The impacts of climate change will significantly affect all aspects of water management including infrastructure. Applying a climate change lens to all water management decisions going forward will ensure that the City is being proactive and responsible in adapting to climate change. Ongoing adaptation measures will be required due to changes to rainfall and snowpack levels resulting from predicted climate change impacts.

Drinking Water Conservation and Quality

Our temperate rainforest region receives significant rainfall each year, however energy, resources, infrastructure and a reliable reservoir supply are required to bring treated drinking water to our taps. Responsible use of our water resources not only benefits our natural ecosystems, but also keeps the City's water distribution systems running efficiently and delays major costs to upgrade and expand our infrastructure. Seasonal water conservation is especially important to ensure that adequate drinking water is available during the hotter and drier summer season and is accessible for unforeseen emergencies (e.g. major service disruption and firefighting). Climate change, infrastructure costs and a growing population increase the need to protect drinking water, enhance water conservation efforts and monitor water quality.

OUR PROGRESS TO DATE

Supportive Plans and Policies

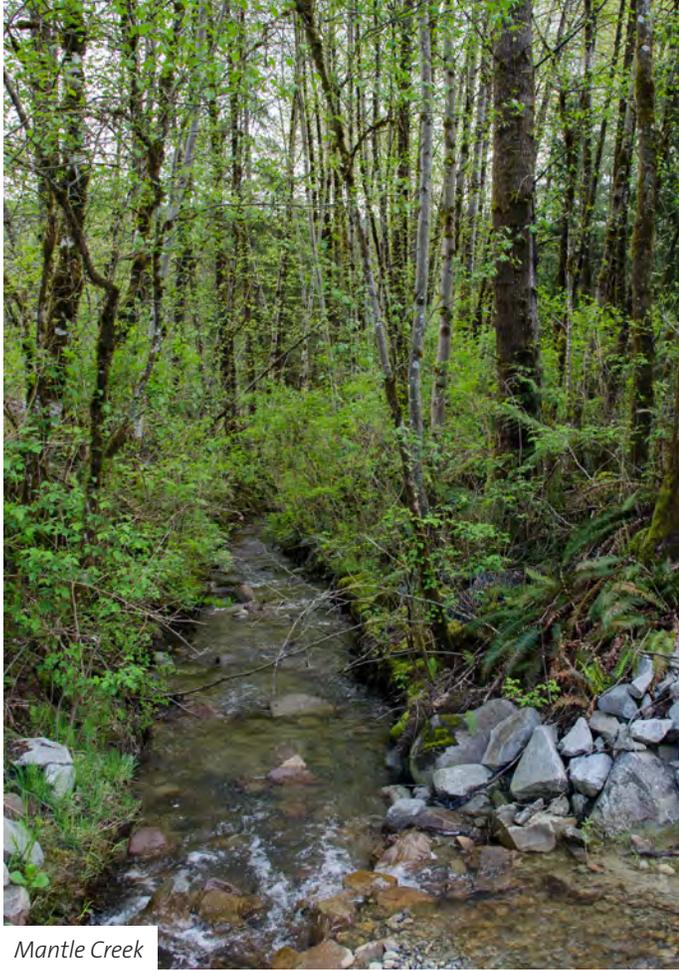
- › Enhanced Water Conservation Strategy (2021)
- › Integrated Watershed Management Plans
- › Rainwater Management – Source Controls Design Requirements and Guidelines (2009)
- › Spill Response Guidelines (2019)
- › Stormwater Management Policy and Design Manual (2019)

Drinking Water Quality and Water Conservation

Clean and safe drinking water is a basic need and the protection, maintenance and monitoring of drinking water reservoirs and water infrastructure ensures that high quality water is delivered to Coquitlam homes and businesses. In partnership with Metro Vancouver, the City provides drinking water to Coquitlam residents and businesses, and maintains a robust water conservation program to ensure adequate drinking water supply especially during the hotter, drier summer months. The water conservation program employs a range of enforcement, outreach, education and incentive initiatives, which include the employment of water conservation bylaw officers, and the delivery of outreach and education such as the H2Whoa school program.



Water conservation outreach booth



Mantle Creek

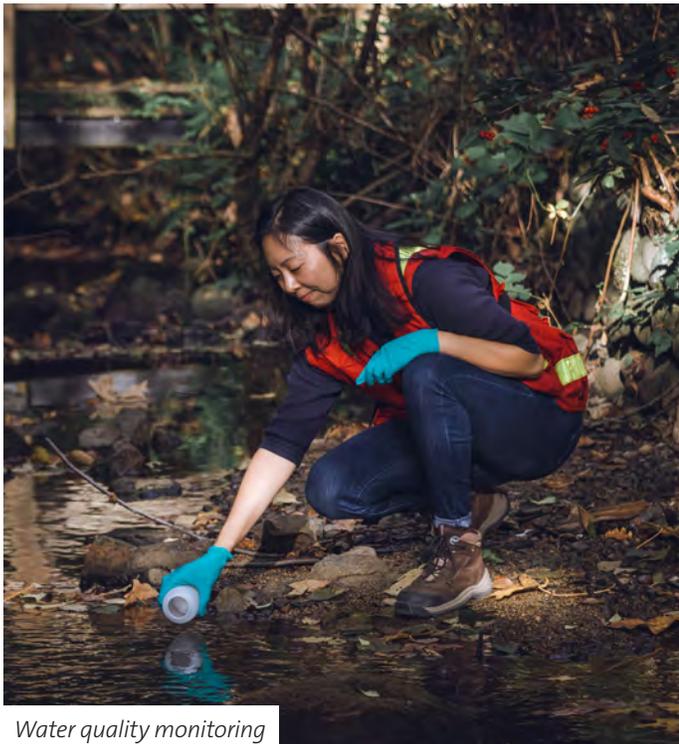
Stormwater and Watershed Management

Coquitlam uses an integrated stormwater management approach within its 26 **watershed** boundaries to maximize ecosystem health benefits and ensure that properties are protected from flooding and that high quality water enters our watercourses. The City’s 10 Integrated Watershed Management Plans (IWMPs) balance land development and environmental values by identifying and addressing issues related to the quality and quantity of rainwater runoff, flood protection, environmental protection of watercourses, wildlife and habitat, land use, greenways and recreation.

The IWMPs identify measures to maintain or enhance watershed health including:

- Restoration and enhancement opportunities
- Requirements for non-single family developments to implement best management practices to limit runoff from the site after completion of the development
- Requirements for single-family developments to apply the Rainwater Management Guidelines

The City continues to implement infiltration trenches, roadside swales, rain gardens and bio-filtration areas where possible within road right-of-way and build diversion storm sewers where necessary to divert peak flows from creeks and reduce the risk of creek erosion.



Water quality monitoring

Water Quality Monitoring

As outlined in the IWMPs and to comply with Ministry of Environment requirements under the regional Integrated Liquid Waste and Resource Management Plan (ILWRMP), annual water quality monitoring of urban watercourses is conducted by the City. Adaptive management plans are an important part of the ILWRMP, which requires bi-annual reporting on the monitoring and improvements completed.

The City also conducts water quality monitoring of the Coquitlam River, which due to its size and lack of urbanization, falls outside the ILWRMP mandated monitoring program. To date, this extensive monitoring of the river has produced a database of over 1200 water quality samples with the majority of water quality parameters being within acceptable levels and demonstrating an overall improvement in water quality over time.

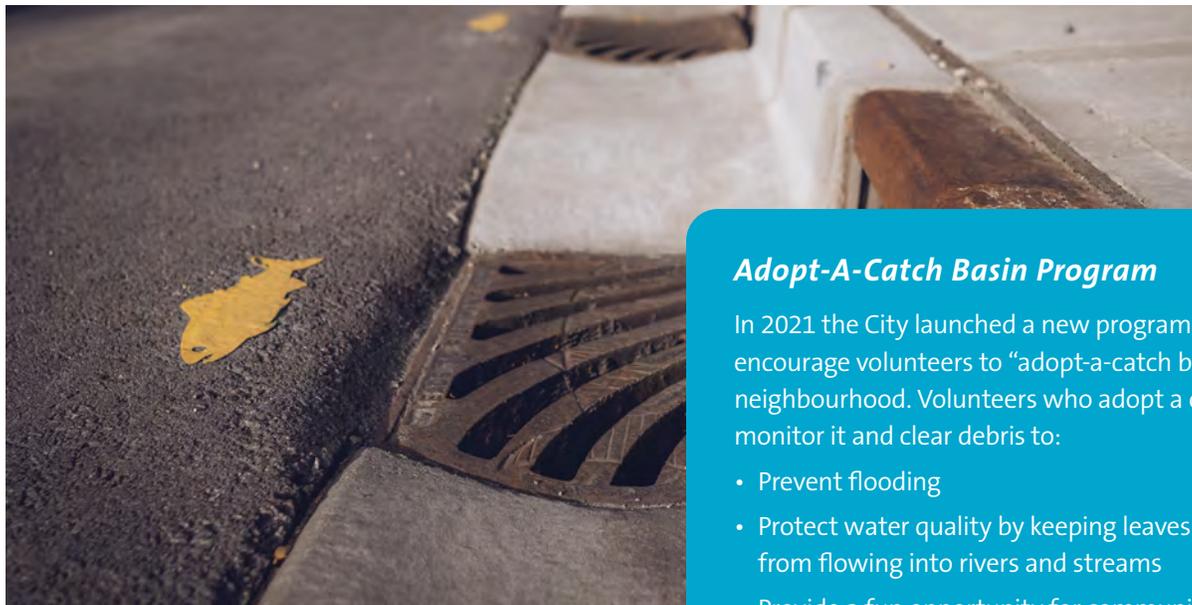
Watercourse Protection

The City has requirements and programs in place to protect watercourses from impacts, such as soil erosion, sedimentation and pollutants:

- The Stream and Drainage System Protection Bylaw is promoted and enforced by the City’s Environmental and Worksite Bylaw Officers.
- The Spill Response Guidelines (updated in 2019) outline procedures, response and recovery to spill and pollution events that may impact watercourses and other environmentally sensitive areas. These guidelines create a clear, streamlined Citywide approach that reduces risk and uncertainty to staff and the environment.
- Education and stewardship activities that raise awareness and promote the protection of watershed health.



Hoy Creek Linear Park



Adopt-A-Catch Basin Program

In 2021 the City launched a new program to encourage volunteers to “adopt-a-catch basin” in their neighbourhood. Volunteers who adopt a catch basin will monitor it and clear debris to:

- Prevent flooding
- Protect water quality by keeping leaves and debris from flowing into rivers and streams
- Provide a fun opportunity for community involvement

Liquid Waste Management

The City plans, designs, constructs and maintains an intricate network of pipes and pump stations to transport wastewater or liquid waste and oversees a robust program to proactively identify and repair issues in the City’s sewer system. Wastewater is collected from each home, business and institution through the sanitary sewer system which is then transported through this network of pipes and pump stations to the regional treatment plant where the water is cleaned before being released to the Fraser River. This process plays an important role in protecting public health and the environment.



Water Management Snapshot

Coquitlam actively protects drinking water, enforces the management and protection of watercourses and stormwater, and protects the public and environment from wastewater.

WATERCOURSES AND STORMWATER MANAGEMENT (2021)



15 creeks monitored for water quality (2021)



Target:

90%+ of watercourse samples meet regional water quality guidelines

PROTECTING OUR WATER

170km of water mains flushed annually to ensure quality

356L per capita average day water use (Metro Vancouver, 2019)

• **17%** lower than the regional average

1,400+ rain barrels sold (2015–2021)

Leak detection program monitors for pipe leaks to identify repairs and conserve drinking water.

EDUCATION



- **11,000** children reached through Water Conservation school programs (2011–2021)
- **55** average number of watershed tours annually since 1983

Did You Know:



- The City is a core member of the Coquitlam River Watershed Roundtable
- Coquitlam conducts year-round flow monitoring in select watercourses
- Plants are used to filter water runoff on boulevards, ditches and medians



ENFORCEMENT (2021)

Bylaws

- Stream and Drainage System Protection Bylaw
- Drinking Water Conservation Plan Bylaw

>900 related tickets issued (all time)

5 Environmental Officers who support:

- water quality
- water conservation
- construction site monitoring





GOALS, STRATEGIES AND ACTIONS

Goal 1: Conserve and protect drinking water

Goal 2: Use an integrated approach to stormwater management that provides flood protection while protecting ecological health

Goal 3: Protect the public and environment from exposure to sanitary sewage

Strategy 1: Enhance residential drinking water conservation and efficiency

Climate change is expected to result in hotter, drier summers, which will reduce water supply at the same time that water demand increases due to additional outdoor water use. The City’s Enhanced Water Conservation Strategy (2021) identifies opportunities for water conservation leadership, today and in the context of future climate scenarios including enforcement, education and incentives.



Rain barrel, Inspiration Garden

Actions

83. Implement the Enhanced Water Conservation Strategy to further reduce water consumption
84. Continue enforcement of regional water use restrictions in collaboration with regional partners and advocate for further restrictions during peak usage
85. Update the Drinking Water Conservation Plan Bylaw to include the new regional restrictions (i.e. one day per week lawn watering)
86. Investigate the use of rainwater, groundwater and greywater re-use systems to reduce water demand (e.g. consider for larger multi-family and commercial developments)
87. Expand the City’s water conservation education program to address topics such as efficient irrigation systems and drought tolerant landscaping
88. Provide incentives for water efficient appliances and tools (e.g. rebates in partnership with BC Hydro and piloting a new toilet rebate program)
89. Require the installation of water meter-ready connections for new single-family homes as a condition of new development approval, as well as for City construction projects and water service replacements
90. Implement a statistical metering program to inform a future decision on multi-family water meter settings and a future report on residential water metering implementation options

Strategy 2: Promote industrial, commercial and institutional (ICI) drinking water efficiency

The City requires water metering for ICI customers and charges by volume. In the past, meter readings were manually collected. As of 2021, meters now transmit readings automatically, providing staff and customers with the most current data while identifying anomalies and possible leaks.



Public water refill station, City Hall

Actions

91. Analyze water meter data to identify high consumers and create targeted conservation education and support plans
92. Partner with Metro Vancouver to encourage businesses to reduce water use, adopt water efficient upgrades and detect leaks
93. Explore options for seasonal water rates to encourage less water use when supply is reduced

Strategy 3: Reduce corporate drinking water consumption

The City’s Enhanced Water Conservation Strategy identifies opportunities where the City can demonstrate leadership in water conservation.

Actions

94. Undertake an audit of civic facilities to identify and prioritize water conservation opportunities and upgrades
95. Investigate opportunities to access groundwater for irrigation of City assets (e.g. Town Centre Park) and to provide additional emergency drinking water sources
96. Enhance the City’s leak detection and repair program



Strategy 4: Manage stormwater to mimic the natural hydrology of the watershed and reduce pollution, while incorporating the anticipated impacts of climate change

A naturally wet climate exacerbated by increased intensity and frequency of extreme weather events due to climate change places great importance on stormwater management and poses additional challenges for managing water flows, infiltration and flooding.

The City’s integrated stormwater management approach will utilize IWMPs, policy and guidelines, data analysis and educational programs to maximize ecosystem health benefits, protect the watershed and ensure flood protection for buildings, infrastructure and properties.



Chum salmon, Hoy Creek

Actions

97. Coordinate with neighbouring municipalities to complete Integrated Watershed Management Plans for all major remaining urban watersheds (e.g. Stoney Creek)
98. Identify and pursue opportunities to daylight creeks in alignment with the City’s Integrated Watershed Management Plans
99. Monitor flow rates and water quality in watercourses and apply adaptive management where needed (as per the City’s Integrated Watershed Management Plans and Metro Vancouver’s Integrated Liquid Waste and Resource Management Plan)
100. Expand and apply the City’s Rainwater Management Guidelines to capital projects, where practical, and to new land development citywide except in areas with steep slopes susceptible to landslides
101. Update the Stormwater Management Policy and Design Manual with new rainwater Intensity-Duration-Frequency curves to reflect the modelled future impacts of climate change
102. Enhance erosion and sediment control education and enforcement including development of new strategies for single family developments
103. Explore ways to increase onsite rain and storm water retention, such as through pervious area requirements, guidelines or incentives, with a focus on single family developments
104. Pursue targeted education and enforcement opportunities to reduce pollution in watercourses by analyzing and mapping the City’s spill response data
105. Create and expand education, outreach and volunteer opportunities related to residential stormwater management (e.g. Storm Drain Marking Program, Adopt-A-Catch Basin Program and continue litter clean-ups)
106. Enhance the inflow and infiltration abatement program (e.g. to reduce wet weather inflow and infiltration volumes and sanitary sewer overflows)

Strategy 5: Increase sewer capacity and effectiveness

Coquitlam is a member of the Greater Vancouver Sewerage and Drainage District and has a key role and responsibility in implementing the region’s ILWRMP.

The City will continue to improve the sanitary sewer system through monitoring, infrastructure upgrades and the detection and removal of cross-connections.

Actions

- 107. Review and improve sanitary sewer system capacity with consideration for population growth to prevent sanitary sewer overflows

Social and economic co-benefits

The following co-benefit examples are supported through Water Management initiatives:



Improves public safety, disaster preparedness and emergency response



Avoid community damages and costs over time



Limits tax or utility increases



Reduces risks to property value



Natural Areas, Wildlife and Habitat

Watercourses | Fish and Wildlife | Biodiversity | Forests and Trees | Parks and Green Spaces

UNDERSTANDING NATURAL AREAS, WILDLIFE AND HABITAT

Healthy, functioning **natural areas** and systems provide significant value to our community and support diverse, interconnected **ecosystems**. They have tremendous cultural and spiritual importance and contribute to our community's livability. They provide important habitat for wildlife and essential ecosystem services including cleaning the air, producing oxygen, carbon storage, stormwater management, pollination, erosion and flood control, and urban temperature moderation. Studies have also highlighted significant physical and mental health benefits associated with spending time and exercising in nature.

The region's natural spaces and ecosystems are being impacted from human activities, including development and climate change, resulting in ecosystem change and loss. This reduces the critical ecosystem services we receive, now and in the future. To increase our resilience, we need to accelerate our climate actions to protect, restore and connect ecosystems.

Parks, Watercourses and Natural Areas of Coquitlam

Coquitlam has an impressive network of over 100 municipal and regional parks comprised of 7.7 km² of forested land, over 385 km of watercourses and more than 120 km of trails. These areas are valued by people and wildlife alike and include significant intact forests such as Mundy Park and Coquitlam River Park, as well as extensive **green and blue corridors** such as the Hoy-Scott Creek system. Prominent watercourses include the Pitt, Coquitlam and Fraser Rivers.

The City borders on Pinecone Burke Provincial Park and provincially-owned forested lands to the north and the Fraser River to the south. Coquitlam also hosts two developed regional parks – Colony Farm and Minnekhada Regional Parks. In addition, the 621-hectare Widgeon Marsh Regional Park on the northeastern edge of Coquitlam is anticipated to open to the public in 2023.



Black bear cub on Douglas Fir, Minnekhada Regional Park

Biodiversity, Fish and Wildlife

Coquitlam's vast network of parks and greenspaces coupled with the forested interface to the north result in an abundance of **biodiversity** and prime habitat for bear, cougar, fish and other wildlife. Coquitlam is also home to a number of species at risk. With this proximity to high quality habitat, inevitable encounters with wildlife exist; however, there are many opportunities to co-exist with wildlife and reduce the associated risks in urban areas while still enjoying the benefits of being in or near nature.

Growth, Development and Natural Areas

It is important to consider the relationship between growth and development with natural areas and habitat especially in growing communities like Coquitlam. With significant population moving to the lower mainland every year, increasing the housing supply and providing a broader range of housing options provides opportunities for greater housing choice and affordability to meet the needs of people at different stages in their lives.

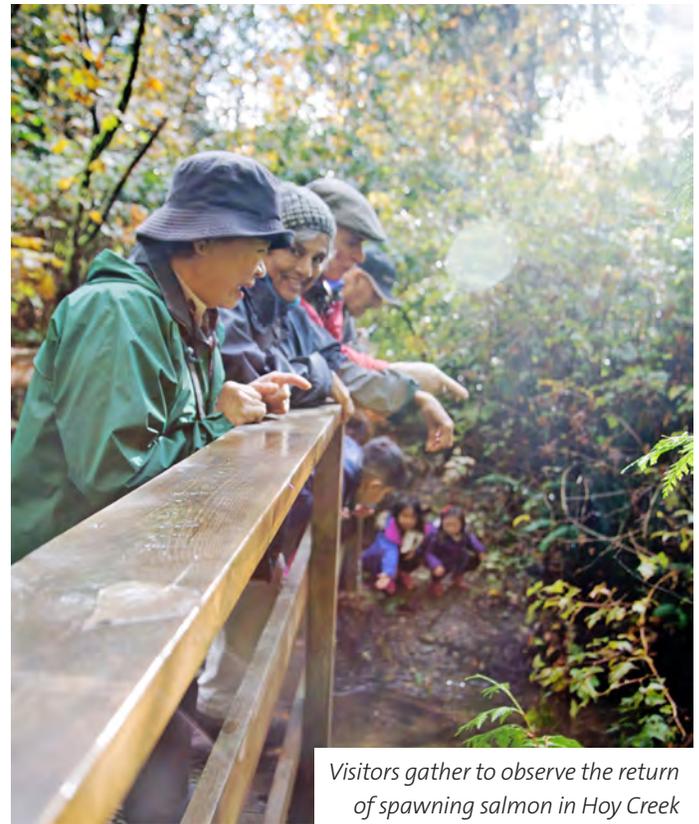
The growth in the region, including Coquitlam, is guided by Metro Vancouver’s Regional Growth Strategy and occurs within the Urban Containment Boundary (UCB) which helps control urban sprawl. The vast majority of new urban growth is directed into already built-up areas, continuing to preserve natural areas outside the UCB from the pressure of urban development. Through the process of strategic land use planning, new development also provides opportunities to protect and support natural areas and habitat by integrating nature into urban design, acquiring new parkland through dedications and protecting riparian and wildlife corridors.

Urban Forests and Tree Canopy

The **urban forest** provides a variety of ecosystem services to the community including improving air quality, shade and cooling, storing carbon, filtering stormwater and reducing the **urban heat island effect**. Healthy tree canopies in both urban and natural areas are an important component of regional livability and resilience to climate change. Regional **tree canopy cover**, currently at 32%, is under pressure and is declining, but strategies are being developed through Metro Vancouver’s Metro 2050 and Climate 2050 plans to address ecosystem loss in the region including the loss of canopy cover. Successful implementation of these strategies will require action, partnerships and collaboration between Metro Vancouver, municipal governments and other agencies, along with innovative funding sources.



Mundy Lake



Visitors gather to observe the return of spawning salmon in Hoy Creek

Key Partnerships

Healthy and resilient natural environments require sound and sensitive management practices and collaboration with landowners, community partners and all levels of government. Provincial and federal legislation including the Fisheries Act, Migratory Bird Convention Act, Species at Risk Act and Wildlife Act as well as regional planning frameworks such as Metro 2050 and Climate 2050 also provide a roadmap for how these resources are managed.

Nature and ecosystem services have also been identified by Metro Vancouver as key components in Climate 2050 and the Clean Air Plan in creating a low-carbon, resilient region over the next 30 years. The Federal Government has pledged to prioritize nature by doubling protection of land and ocean as a part of the Clean Canada Plan.

Continued community involvement and partnerships with a variety of non-government organizations, First Nations, businesses and other agencies as well as strategic alignment with key government organizations such as Metro Vancouver, Conservation Officer Service, Fisheries and Oceans Canada and provincial ministries will be necessary to realize the goals, strategies and actions in this theme.

OUR PROGRESS TO DATE

The City is committed to supporting healthy and resilient ecosystems, providing accessible and equitable outdoor recreation opportunities, increasing community awareness and participation, and maximizing ecosystem services for current and future generations.

Tools for Protecting Natural Areas, Wildlife and Habitat

Protecting and maintaining natural areas, wildlife and habitat requires a variety of City plans and strategies supported by policies and bylaws. The City’s high-level planning framework, including Neighbourhood Plans, Area Plans and Integrated Watershed Management Plans, ensure important fish and wildlife habitat areas are identified and protected and impacts from urban growth are minimized. New parkland is acquired through dedications during development and riparian corridors are delineated and protected as per the Provincial Riparian Area Protection Regulation which focuses on the protection of fish habitat and is recognized through the City’s Zoning Bylaw.



Educational programming at the Inspiration Garden

Supportive Plans and Policies

- › City Wayfinding Plan (2016)
- › Invasive Plant Management Strategy (2007)
- › Master Trail Plan (2013)
- › Mundy Park Forest Management Plan (2015)
- › Off-Road Cycling Strategy (2008)
- › Parks, Recreation and Culture Master Plan (2017)
- › SPEA and Windfirm Areas Management Policy and Procedure (2019)

Environmental Education and Stewardship

The City plays a key role in developing and supporting environmental and outdoor programs and volunteer opportunities that focus on the stewardship of natural areas, wildlife and habitat including:

- Community and school tree planting events
- Habitat enhancement projects (including installation of bird, barn owl and bat boxes)
- The Bad Seed Program, focused on reducing the spread of invasive plant species
- Park Spark, which provides hands-on learning and skill development for volunteers (e.g. Inspiration Garden, pollinator gardens, partnering with community groups, etc.)
- Adopt-A-Trail and Adopt-A-Street programs which keep parks, trails and neighbourhoods litter-free
- Supporting local environmental stewardship groups

The City has also delivered a robust urban wildlife program for over a decade which encompasses education and bylaw enforcement to support co-existence with wildlife and minimize human-wildlife conflicts. As a result of this program, Coquitlam was recognized in 2017 by the Ministry of Environment as a Bear Smart Community, one of only 10 in the province.

Urban Forest Management

The City recognizes the value trees provide and utilizes a variety of regulatory tools, management practices and programs to protect and enhance our tree canopy (e.g. tree replacement criteria in the Zoning Bylaw, enforcement of the Tree Management Bylaw, Watercourse Protection Development Permit Areas, tree protection requirements during construction and implementation of tree planting programs).

Coquitlam has had a dedicated Urban Forestry section since 2007 which includes a team of certified arborists. In addition to applying regulatory tools and enforcing the Tree Management Bylaw, Urban Forestry also conducts ambitious planting and tree care programs. These programs focus on planting private, street and park trees as well as conducting structural pruning, irrigation and integrated pest management on City trees. The City’s inventory of managed street and ornamental park trees grows on an annual basis and currently includes over 12,000 trees.



Volunteer tree planting



Invasive Japanese Knotweed

Invasive Species Management

Invasive species are plants, animals or other organisms not native to BC and whose introduction and spread harms the province’s native species, economy and human health (Invasive Species Council of BC). The City’s Invasive Plant Management Strategy provides strategic guidance in the management of these unwelcomed plant species in City parks and natural areas and facilitates their management on private lands in the City. The City’s Bad Seed program helps prevent the spread of invasive species through public education and stewardship



Natural Areas, Wildlife and Habitat Snapshot

Coquitlam enjoys beautiful natural spaces and an abundance of wildlife, and caring for these important parts of our community is a priority.

COQUITLAM'S NATURAL SPACES (2021)

- 26** areas classified as ravines, forests and greenways
- 7.7 km²** forested parks
- 113** parks and open space areas
- 134 km** City trails

What we heard: **95%** of surveyed residents are satisfied with parks, trails, and other greenspaces (2021 Citizen Satisfaction Survey)

PROTECTION, ENHANCEMENT AND STEWARDSHIP

16,547 m² new natural areas added 2019–2020

3,000 m² riparian habitat restored on average each year in public-owned parks and natural areas

80 habitat restoration sites where invasive plants removed and native species replanted (2021)

City Programs

- Park Spark (pollinator programs, Inspiration Garden, Communities in Bloom, tree planting)
- Bad Seed Program (invasive plant removal and restoration planting)

TREES IN COQUITLAM (2021)

- >9,600** street trees
- 54** new street trees planted
- >6,500** City park trees
- 1201** native shrubs and trees planted
- >2,100** trees benefited from the Street Tree Watering Program

COQUITLAM IS BEAR SMART

- Certified as a Bear Smart Community in 2017
- 99.5%** garbage cart set out compliance*
 - 66%** fewer warnings and tickets issued for early cart set out**
- *2021 curbside compliance audit
**2021 compared to 2020

Engaging the Community (2021):

Since 2008 we have removed invasive plants and replanted native plants on public lands with the help of:

- **6,000+** volunteers engaged
- **14,000+** volunteer hours

- 120 km+** roads and trails “adopted” through the Adopt-A-Street and Adopt-A-Trail programs
- 18** annual environmental achievement celebrations
- 196** environmental volunteer awards presented
- 5** community garden locations

Morning waste collection and garbage storage requirements help reduce bear access to household waste

KEY BYLAWS

- Pesticide Use Control Bylaw
- Tree Management Bylaw
- Wildlife and Vector Control Bylaw
- Solid Waste Management Bylaw

GOALS, STRATEGIES AND ACTIONS

- Goal 1:** Improve ecological conditions of natural areas (e.g. forests, streams, wetlands, meadows) for the community and wildlife
- Goal 2:** Provide a balanced, sustainable system of parks that provides equity of access to services and facilities across demographics and neighbourhoods
- Goal 3:** Profile and highlight the natural assets and features of Coquitlam and plan for expanded outdoor recreation and environmental initiatives

Strategy 1: Collaborate with kwikwəłəm and other local First Nations, academic institutions and community organizations to increase environmental stewardship and knowledge that supports the conservation and enhancement of natural areas and watersheds

These actions focus on enhancing existing stewardship and education programs and introducing new opportunities for community involvement in alignment with the PRC Master Plan, Youth Strategy and Senior Services Strategy. Community members play an important role in stewarding the natural environment for current and future generations. Ongoing community volunteerism will be fostered and supported through City-led awards, celebrations and recognition programs.



Bat box, Mundy Park

Actions
108. Provide environmental education programs and volunteer engagement initiatives for all ages and abilities in collaboration with community and regional partners
109. Engage youth through youth-focused volunteer opportunities, school programs and outdoor experiences (e.g. trail building, park hosting and environmental leadership committees)
110. Recognize environmental champions through programs such as the Environmental Achievement Awards and Communities in Bloom
111. Support small scale pocket habitats and gardens (e.g. pollinator gardens) in neighbourhoods and commercial areas through educational resources and programs
112. Promote and support community-based science initiatives (e.g. City Nature Challenge, bioblitz, water quality monitoring, backyard bird counts, i-naturalist projects)
113. Continue to work with kwikwəłəm First Nation, BC Hydro, Metro Vancouver, Fisheries and Oceans Canada and other partners through the kwikwəłəm Salmon Restoration Program to restore sockeye salmon to the Coquitlam River Watershed



Salmon Come Home celebration, Hoy Creek Linear Park

Strategy 2: Improve and preserve natural areas to enhance biodiversity and protect species at risk

Protecting and enhancing biodiversity supports the health of natural systems and maximizes their resilience to a changing climate. Coquitlam has a diverse network of parks and natural areas which are part of the Lower Mainland’s regional **green infrastructure network** and provide habitat for wildlife including species at risk (e.g. Pacific Water Shrew, Oregon Forest Snail, Western Painted Turtle and Streambank Lupine). In alignment with existing provincial and federal requirements, the actions of this strategy support efforts to reduce human impacts on ecosystems and support ongoing protection and enhancement efforts.

Actions

- 114. Develop a new citywide Invasive Species Management Plan and continue to remove invasive species through the Bad Seed Program
- 115. Decrease the use of pesticides citywide through enhanced educational programs and bylaw enforcement
- 116. Explore the designation and protection of wildlife corridors through the area and neighbourhood planning process where feasible and desirable
- 117. Collaboratively identify, protect, enhance and restore natural and urban elements of the regional green infrastructure network
- 118. Evaluate opportunities to reduce night-time light pollution to minimize impacts to wildlife
- 119. Identify opportunities to enhance the protection of nesting birds through existing City policies (e.g. City Watercourse Protection Development Permit requirements, subdivision Preliminary Layout Approval letters) that complement provincial and federal regulations
- 120. Continue to foster inter-governmental cooperation to collaboratively conserve species and ecosystems at risk, including participation on the provincially-led Species and Ecosystems at Risk Local Government Working Group and their related initiatives



Volunteers help restore the urban forest through tree planting initiatives

Strategy 3: Protect and enhance the urban forest

A key action to ensure Coquitlam’s urban forest is resilient and healthy in the long-term is the development of a citywide Urban Forest Management Plan (UFMP) including tree canopy analysis, forest health analysis and review and recommendations for improving existing bylaws, policies, processes and practices. The UFMP, in alignment with park specific forest management plans and tree related bylaws, policies and requirements will provide a new framework for ongoing city-led actions that protect, enhance and manage the health of Coquitlam’s trees while considering future climate change impacts.

Other actions include building on data collected through Metro Vancouver’s 2019 *Regional Tree Canopy Cover and Impervious Surfaces* report to determine current tree canopy cover percentages as well as identifying strategies on how to maintain canopy cover and opportunities to increase tree planting initiatives on both public and private lands.

Actions

- 121. Develop a citywide Urban Forest Management Plan that considers tree retention, stewardship, forest and ecosystem health, public safety and climate change impacts

- 122. Develop forest management plans for all key natural area parks

- 123. Measure tree canopy cover percentages in developed neighbourhoods (Expand on the work completed by Metro Vancouver through the “Regional Tree Canopy Cover and Impervious Surfaces” analysis)

- 124. Identify and implement strategies to increase tree canopy cover at the neighbourhood level on private and public lands

- 125. Amend the Zoning Bylaw to extend Northeast Area tree replanting requirements citywide and re-evaluate requirements to ensure they are resilient to climate change

- 126. Increase tree planting initiatives on public lands and implement new tree planting programs on private lands (e.g. Adopt-A-Tree Program, incentives to plant large trees that sequester more carbon)

- 127. Prioritize planting of trees and vegetation that are resilient to climate change on public lands and support climate resilient tree planting on private lands through education and outreach



Trail running



Biking

Strategy 4: Improve equitable access to parks and natural areas

The City is actively seeking to better understand and improve equity around accessing nature in all neighbourhoods. The need for access to nature and outdoor recreation became more apparent during the COVID-19 pandemic with considerable increases to park use. Providing new and enhanced opportunities for all to experience nature and improving park infrastructure and wayfinding to increase greenspace accessibility citywide will support **urban green equity**.

Actions

- 128. Identify opportunities to increase access and availability of quality greenspaces throughout the City (e.g. by acquiring parkland, planting street trees, creating “pocket parks”, encouraging backyard tree planting and engaging local residents in greening their neighbourhoods)

- 129. Enhance, maintain and increase parks, trails and walking/cycling infrastructure in alignment with the City’s Master Trail Plan (e.g. sections providing linkages to larger trail systems or access from neighbourhoods to transportation hubs and commercial nodes are highest priority)

- 130. Implement the Coquitlam Parks Wayfinding Guidelines to improve connectivity of all neighbourhoods to the parks and trails system

Strategy 5: Minimize human-wildlife conflict and promote co-existence with wildlife

Coquitlam is one of few communities to achieve provincial Bear Smart status and is committed to reducing human-wildlife conflicts through education and enforcement while recognizing that the responsibility for physical management of wildlife lies solely with the provincial Conservation Officer Service (COS). In addition to working collaboratively with the COS and other community partners, staff will identify opportunities to enhance the urban wildlife and pest management education and enforcement programs.

Actions
131. Review the City’s urban wildlife education and enforcement programs and identify areas for enhancement and further collaboration with partners (e.g. Conservation Officer Service, neighbouring municipalities and citizen bear aware groups)
132. Provide education to prevent pest infestations and to encourage humane standards for treatment of pest issues that also eliminates the risk of secondary poisoning of wildlife
133. Participate in a collaborative working group with the Ministry of Environment and Climate Change Strategy and other local governments to support actions to protect wildlife from second-generation anticoagulant rodenticides (SGAR) use
134. Create a best management guide and design specifications for wildlife resistant garbage and green waste storage in multi-family developments
135. Amend garbage and green waste storage and set out requirements in the solid waste and wildlife bylaws to include multi-family properties



Social and economic co-benefits

The following co-benefit examples are supported through Natural Areas, Wildlife and Habitat initiatives:



Enhances human health and well-being



Advances equity and social inclusion



Improves community livability and vitality



Supports green job creation



Increases carbon sequestration/storage



Implementation and Monitoring



Implementation Plan

The ESP is a guiding document that supports the long-term environmental resiliency and sustainability of the community, with majority of implementation planned over the next 10 years. The Action Implementation Tables are organized by the five themes, include the complete detailed list of actions and describe anticipated timeline, high-level cost estimate and lead City department for each one. Potential opportunities to fund the actions through existing internal budgets or by pursuing external grants or funding opportunities is also indicated.

The ESP is intended to be a living document that will be regularly reviewed and aligned with updates to the City's strategic goals, the community's growth and development, and advancements in environmental sustainability practices or technologies. It is expected that over time strategies and actions will be added, modified or removed. Ongoing staff participation in regional committees, academia-led groups, research partnerships and other collaborative efforts will help the City maintain the ESP as a modern, forward-thinking plan into the future.

Implementation Team

Environmental sustainability is a broad topic and implementation will require ongoing interdepartmental collaboration. A key initial step in the implementation of the ESP is the creation of an interdepartmental staff working group led by the City's Environmental Sustainability team. This working group will provide ongoing leadership and coordination for the implementation of both the ESP and other reports and plans related to Coquitlam's environmental sustainability portfolio.

It is well understood that community cooperation and partnerships are essential for implementing a successful environmental sustainability program. We will need ongoing involvement, action and input from the public, First Nations, business leaders, and community stakeholders to ensure that plan implementation is effective, equitable, and reflective of Coquitlam's values. As the ESP is operationalized, staff will share and seek knowledge and pursue partnerships with *k̓w̓ik̓w̓əl̓əm* and other local First Nations, community groups, businesses, and academic institutions to ensure continued collaboration and successful implementation of the plan.



Town Centre Park



Colony Farm Regional Park

Financial Considerations and Resources

Many of the actions outlined in this plan are already integrated into existing City plans, policies and strategies. These actions are supported by existing staff capacity, budget and partnerships; however, other actions presented in the ESP are new or include enhancements to City programs and will require financial investment.

To minimize cost and maximize value for taxpayers, staff will work closely with the City's Finance Division to develop an annual, phased funding approach for implementation of the ESP. This approach will identify actions which could be funded by existing City reserves such as the Carbon Offset Reserve Fund with the goal of implementing high-value emission reduction projects that result in real reductions in GHG emissions while potentially also having other environmental, economic and social co-benefits.

Investing in environmental sustainability now is key to preventing and reducing future costs. For actions where a new financial investment is required, business cases that evaluate potential for long-term cost savings, benefits and feasible return on investment timeframes will be assessed alongside innovative financing and revenue generating mechanisms. Staff will also seek to develop or expand partnerships and pursue external funding opportunities, such as grants.

Ongoing review and assessment of financial resources and staff capacity will inform funding requests and recommendations to be brought forward to Council as part of the City's budget process to ensure the City maintains the ability to implement the ESP in perpetuity.

Monitoring Progress and Measuring Success

To understand the City's progress on improving and enhancing environmental sustainability it will be important to monitor a suite of key performance indicators (KPIs) that align with the desired goals of the ESP.

Where aligned, existing corporate KPIs that speak to the goals found in the five themes of the ESP have been identified. In addition, new ESP KPIs have been developed to ensure that all goals are regularly and consistently monitored.

Measurable targets will help staff to monitor progress and success. A review of existing targets and development of new trends and targets (where appropriate) will be advanced through the implementation of the ESP, though in some cases where qualitative and quantitative data are not available, a desired trend may be defined in lieu of a target.

KPIs will be periodically reviewed to ensure that indicator methodologies are composed of high-quality data, reflect best practices in evaluation, and allow effective measurement of ESP implementation successes and challenges.

Regular reports to Council will summarize progress to date with a fulsome review and update of the ESP to occur on a 5 to 10-year schedule, similar to other City plans of this nature and scope. In addition to regular updates to Council, staff in Environment, GIS, Corporate Services, and ICT will work collaboratively to review the feasibility of developing an interactive, public-facing, online "dashboard" to enhance the visual storytelling of Coquitlam's environmental sustainability progress.

ESP Dashboard

The ESP Dashboard provides a snapshot of key performance indicators that annually monitor the progress of the City in achieving the goals of the ESP.

Key Performance Indicator	Current Conditions*	Desired Trend or Target
Climate Action		
Goal 1: Reduce GHG emissions		
Goal 2: Create a resilient City that can adapt and thrive in current and future climate conditions		
Community GHG reduction (2007 baseline)	+1%	2030: 45% reduction
Corporate GHG reduction (2007 baseline)	-18%**	2050: carbon neutral
Built Environment		
Goal 1: Encourage sustainable modes of transportation		
Goal 2: Develop complete, well-connected neighbourhoods that consider the protection of natural areas		
Goal 3: Encourage sustainable development and building design		
Percent of sustainable transportation mode share	20%	30%
Percent of registered electric vehicles	4.82%	Trend Up
Percent of homes within 400m of the Frequent Transit Network	36%	Trend Up
Total new buildings that meet or exceed the City's BC Energy Step Code requirements	Tracking to begin in 2022	Trend Up
Waste Management		
Goal 1: Minimize waste generation		
Goal 2: Maximize reuse, recycling and material recovery		
Goal 3: Ensure adequate disposal opportunities exist to discourage illegal dumping and littering		
Residential disposal rate (annual)	0.37 t/single family dwelling	Trend Down
Residential waste diversion rate (annual)	71%	80%
Total Illegal dumping reports (annual)	542	Maintain

Implementation and Monitoring

Key Performance Indicator	Current Conditions*	Desired Trend or Target
Water Management		
Goal 1: Conserve and protect drinking water		
Goal 2: Use an integrated approach to stormwater management that provides flood protection while protecting ecological health		
Goal 3: Protect the public and environment from exposure to sanitary sewage		
Summer water consumption (all sectors)	393 L/person/day	Trend Down
Stream water quality within AMF*** guidelines	95%	90% of samples meet or exceed AMF** guidelines
Number of sanitary sewer backups or surcharges (annual)	1	0

Natural Areas, Wildlife and Habitat		
Goal 1: Improve ecological conditions of natural areas (e.g. forests, streams, wetlands, meadows) for the community and wildlife		
Goal 2: Provide a balanced, sustainable system of parks that provides equity of access to all demographics and neighbourhoods		
Goal 3: Profile and highlight the natural assets and features of Coquitlam and plan for expanded outdoor recreation and environmental initiatives		
Number of native trees and shrubs planted on City land (annual)	3,326	Maintain
Natural areas restored (annual)	3,825 m ²	Maintain
Total Parkland area	998 ha	Trend Up
Percent of homes within a 5-minute walk (400m) of a greenspace	99%	Maintain
Total City-owned maintained trails	121 km	Trend Up

*For most KPIs in the ESP Dashboard, data points given are for 2020 (the complete year of reporting). For some KPIs where data is not collected or available on an annual basis, the most recent data point is listed.

**Emissions reductions achieved during the pandemic

***Metro Vancouver's Monitoring and Adaptive Management Framework for Stormwater

Action Implementation Tables

The following tables identify the timelines, magnitude of new expenses (where anticipated) and lead City department for each of the actions proposed in the ESP.

Legend

Implementation Timeline		Lead City Department	
	Estimated Start Date	Abbreviation	Department Name
Short Term	<2 years	EPW	Engineering and Public Works
Medium Term	2–5 years	PD	Planning and Development
Long Term	>5 years	PRCF	Parks, Recreation, Culture and Facilities
Ongoing	Currently underway	FLP	Finance, Lands and Police
		CS	Corporate Services
		FR	Fire and Rescue
		DCM	Deputy City Manager

(For clarity, Lead Division is also specified for some actions)

Expense Estimate	
Abbreviation	Value / Funding Source
\$	\$0–\$50,000
\$\$	\$50,000–\$100,000
\$\$\$	\$100,000–\$500,000
n/a	No new expense (i.e. no cost or already funded through existing budget)
TBD	Cost or timeline to be determined during implementation
▲	Carbon Offset Reserve, Energy Management Program or other existing City funding will be considered
■	High potential for alignment with external funding opportunities

Action Implementation Tables

Actions	Timeline	New Expense	Lead Department	Action Number
Climate Action				
Develop and implement a new Climate Action Plan that incorporates emerging best practice approaches and innovative technology, and prioritizes actions to achieve the City's community and corporate climate change targets	Short Term	\$ ▲	EPW	1
Annually track and report on current community and corporate GHG emissions and monitor anticipated future scenarios through the use of GHG inventory and modelling tools	Short Term	n/a	EPW	2
Develop strategic and collaborative education opportunities to encourage the community to take action to address climate change (e.g. reduce energy use, reduce solid waste, invest in renewable on-site energy, participation in CleanBC incentive programs, planting shade trees)	Short Term	n/a	EPW	4
Continue to limit idling of City vehicles and develop new community anti-idling requirements and an associated outreach campaign	Short Term	n/a	EPW	5
Implement, track and report on the actions in the City's Climate Adaptation Strategic Plan	Short Term	n/a	EPW	9
Implement the new Community Wildfire Resiliency Plan and advance mutually supportive actions in the Climate Adaptation Strategic Plan to increase community wildfire preparedness and address wildfire climate risk events	Short term	n/a	FR	11
Foster and support retention and expansion of local clean technology and innovation by leveraging technology partnerships to advance and solve sustainability challenges in our community and support a sustainable local economy (e.g. Project Greenlight)	Short term	\$	EPW	16
Develop and implement a corporate green fleet strategy	Short Term	\$ ▲	EPW	21
Identify opportunities to gradually implement sustainable and socially responsible criteria for corporate investments	Short Term	n/a	FLP (Finance)	24

Actions	Timeline	New Expense	Lead Department	Action Number
Climate Action				
Develop a Carbon Offset Reserve Fund policy to guide decision-making in allocating funds to high-value GHG emission reduction projects	Short Term	n/a	EPW	25
In partnership with the business community and business associations, provide support and recognition to local businesses who reduce their carbon footprint and green their operations	Medium Term	\$	DCM (Economic Development)	12
Encourage staff to commute sustainably by developing new initiatives and incentives (e.g. consider transit pass subsidy, bike storage and annual bike tune-ups, etc.)	Medium Term	TBD	EPW	17
Motivate sustainable actions in staff through engagement campaigns and policies (e.g. update the City's Workplace Sustainable Practices Policy and enhance the Carbon Cutters Program)	Medium Term	\$ ▲ ■	EPW	18
Encourage sustainable staff driving habits through an e-learning civic driver training program	Medium Term	\$	EPW	19
Complete an assessment of environmental technology opportunities (e.g. smart lighting controls, radar, smart sensors)	Medium Term	n/a	CS (ICT)	23
Connect residents to renewable energy resources and opportunities for home applications	Long Term	n/a	EPW	8
Enhance and promote sustainable procurement guidelines	Long Term	n/a	FLP (Finance)	20
Research and evaluate low carbon or renewable fuel options for the City's fleet (e.g. piloting biofuel, low emission diesel, hydrogen)	Long Term	TBD	EPW	22
Advocate to regional, provincial and federal levels of government to improve measures to reduce GHGs through actions such as research, incentive programs, expansion of transit service, progressive building codes and strengthened legislation	Ongoing	n/a	EPW	3

Action Implementation Tables

Actions	Timeline	New Expense	Lead Department	Action Number
Climate Action				
Foster community driven climate action projects and initiatives that contribute to community GHG reduction (e.g. through the Spirit of Coquitlam Grant, tree planting programs, Bad Seed program)	Ongoing	n/a	EPW	6
Develop policies and champion pilot projects to encourage renewable energy in civic projects and technology applications (e.g. solar-thermal water heating for outdoor pools, pilot solar powered mobile device charging stations in parks and solar parking pay stations, geothermal opportunity in the development of the Poirier Precinct Master Plan, micro hydropower generators in the water distribution network)	Ongoing	\$\$ ▲ ■	PRCF	7
Support local food systems initiatives (e.g. participation on the Tri-Cities Food Council)	Ongoing	\$	PD	10
Continue to support and promote sustainable local tourism to Coquitlam residents and visitors	Ongoing	n/a	DCM (Economic Development)	13
Support the local food economy by promoting local makers, bakers, and growers (e.g. farmers markets, food trucks)	Ongoing	n/a	DCM (Economic Development)	14
Collaborate with academic institutions to provide civic-focused learning opportunities to post-secondary students on topics that build job skills, develop local capacity to advance environmental sustainability and attract talent to the City and local businesses	Ongoing	n/a	EPW	15

Actions	Timeline	New Expense	Lead Department	Action Number
Built Environment				
Develop and support programs and campaigns that create safe cycling opportunities for all ages and abilities (e.g. pilot a Learn2Ride program, update school travel plans, update cycling maps, Go-By-Bike campaign)	Short Term	\$	EPW	29
Develop policies, regulations and streetscape guidelines to manage curb space safely and efficiently, with an emphasis on encouraging walking, cycling, transit and shared mobility	Short Term	\$	EPW + PD	32
Develop a comprehensive pedestrian, cycling and accessibility plan as a part of future updates to the Strategic Transportation Plan	Short Term	n/a	EPW	33
Explore and implement solutions for first and last km transportation (e.g. e-bike share, short-term electric bike rentals)	Short Term	\$ ▲	EPW	34
Develop an Electric Mobility Strategy to advance vehicle electrification and support greater e-mobility in the City (e.g. develop an electric vehicle charging strategy, identify barriers to community e-mobility, review City fleet inventory for opportunities to transition to electrification and explore business cases around e-mobility)	Short Term	n/a ▲ ■	EPW	35
Implement BC Energy Step Code requirements for new building permit applications in advance of provincial adoption schedule	Short Term	n/a	PD	37
Develop a tracking, monitoring and reporting system for BC Energy Step Code buildings	Short Term	\$	PD	38
Promote sustainable building incentives such as the CleanBC's Better Homes and Better Buildings Programs and consider providing top-up incentives (e.g. heat pumps)	Short Term	TBD ▲	EPW	39
Contemplate using the Northeast Community Centre project to pilot the development of a "sustainability plan", including a cost benefit analysis, for Council consideration	Short Term	n/a	PRCF	49

Action Implementation Tables

Actions	Timeline	New Expense	Lead Department	Action Number
Built Environment				
Implement BC Energy Step Code requirements for new civic facilities	Short Term	n/a	PRCF	50
Provide end of trip cycling facilities as a part of all new civic facility developments (e.g. secure bike and gear storage, change room and shower, electric bike charging stations)	Short Term	TBD	PRCF	51
Complete an assessment of smart building technology opportunities for civic facilities (e.g. machine to machine communications and automation, artificial intelligence, expand use of smart sprinklers)	Short Term	n/a	CS (ICT) + PRCF	52
Implement a pop-up green street pilot program that reimagines and repurposes portions of road right of ways to create unique and vibrant pedestrian oriented public open spaces	Short Term	n/a	PRCF	59
Implement mobility hubs in Transit Oriented Development areas to increase transportation choice for residents	Medium Term	\$	PD + EPW	31
Promote and support incentives (e.g. preferential parking) for electric vehicle ownership and charging infrastructure and deliver enhanced outreach and education	Medium Term	TBD	EPW	36
Pilot a program to increase industry and homeowner awareness and capacity for energy efficient upgrades and retrofits for existing buildings (identify grants and partnerships to support the program)	Medium Term	\$\$ ▲ ■	EPW	41
Encourage developers to investigate a variety of approaches to reduce the energy demand and GHG emissions of their buildings and developments including district energy systems and low carbon systems	Medium Term	\$	PD + EPW	42
Explore opportunities to integrate natural asset management and inventory programs including valuation of ecosystem services into the City's conventional asset management program	Medium Term	\$\$	EPW + FLP	55

Actions	Timeline	New Expense	Lead Department	Action Number
Built Environment				
Explore opportunities to expand Watercourse Protection Development Permit Area requirements citywide	Medium Term	n/a	PD + EPW	57
Create tools, policy, and processes that support best management practices for sustainable development (e.g. sustainable development checklist/scorecard, development permit guidelines update)	Medium Term	\$	PD	58
Explore ways to support the inclusion of small scale pocket habitat and recreational gardens in new developments	Medium Term	\$	PD	61
Ensure boulevard tree planting specifications for City and development projects are resilient in a changing climate (e.g. species selection, soil availability)	Medium Term	\$	PRCF	62
Promote new development to meet a recognized sustainable building standard (e.g. LEED, PassivHaus, National Green Building Standard)	Long Term	TBD	PD + EPW	39
Develop sustainable design guidelines for new civic buildings and build new facilities to performance-based standards that minimize the need for large-scale retrofits within the lifespan of the building	Long Term	\$ ▲	PRCF	47
Require transportation demand management (TDM) measures in new developments, neighbourhood centres and the City Centre (e.g. car sharing, bike end-of-trip facilities, telecommuting, parking management)	Ongoing	\$	EPW	26
Work with key partners to promote education and outreach initiatives that support active transportation (e.g. HUB, SD43 and TransLink)	Ongoing	\$	EPW	27
Prepare planning and development strategies for transit supportive development (e.g. following best practices for transit-oriented development, corridor design to develop complete streets, density and diversity of housing to support frequent transit services)	Ongoing	n/a	PD	28
Work with TransLink to prepare plans and strategies for transit service expansion (e.g. through Transport 2050)	Ongoing	n/a	EPW	30

Action Implementation Tables

Actions	Timeline	New Expense	Lead Department	Action Number
Built Environment				
Support opportunities, partnerships and programs for deep energy retrofits of existing buildings (e.g. the Reframed initiative has selected a social housing building in Coquitlam for their retrofit program)	Ongoing	TBD ■	PD	43
Continue to investigate opportunities to support encapsulated mass timber construction	Ongoing	n/a	PD	44
Encourage and enable the adaptive reuse of the existing building stock where appropriate	Ongoing	TBD	PD	45
Continue to upgrade, retrofit and apply cost-effective climate adaptive design to aging civic facilities and infrastructure	Ongoing	n/a	PRCF	46
Target sustainable design and operational elements that reduce energy costs and GHG emissions with acceptable payback period or return on investment	Ongoing	TBD	PRCF	48
Apply a climate lens to strategic building asset planning informed by energy audits, building envelope evaluation, climate risk assessments and green infrastructure opportunities to support decision-making	Ongoing	n/a	PRCF	53
Direct the majority of growth into Urban Centres and SkyTrain Station areas	Ongoing	n/a	PD	54
Continue enforcement of environmental requirements for construction projects (e.g. erosion and sediment control, zoning requirements, Riparian Areas Protection Regulation and stormwater management)	Ongoing	n/a	EPW	56
Identify and pursue opportunities to add and retain green infrastructure and features (e.g. street trees, bioswales, new parks, green walls, etc.) to neighbourhoods through neighbourhood plans, streetscape and design guidelines and other relevant plans/programs (e.g. Roadway and Streetscape Enhancement Program)	Ongoing	TBD	PD + EPW	60

Actions	Timeline	New Expense	Lead Department	Action Number
Waste Management				
Expand current programs and develop new initiatives to educate residents and schools about waste generation, recycling, reusing and food waste (e.g. Metro Vancouver Love Food Hate Waste Campaign)	Short Term	n/a	EPW	63
Identify and promote incentives to reduce waste (e.g. eliminate exchange fees for switching to a smaller garbage cart, promote the cost saving benefits associated with reducing waste and overall consumption)	Short Term	n/a	EPW	66
Promote item sharing and swapping programs (e.g. tool libraries, sports equipment sharing in parks, library loan program and Little Free Libraries, repair cafés)	Short Term	n/a	EPW	67
Evaluate, prepare, and prioritize guidelines for construction and demolition (deconstruction) materials to encourage the recycling and reuse of building materials where feasible (e.g. educational resources, recycling program, integrate with CleanBC Better Buildings programs)	Short Term	\$	EPW + PD	71
Look for education and programming opportunities to support the regional approach in addressing food waste	Short Term	n/a	EPW	73
Implement a single-use item bylaw that reflects the regional approach developed by Metro Vancouver	Short Term	n/a	EPW	78
Promote reusable alternatives to single use items to reduce consumption	Short Term	\$	EPW	79
Assess service delivery options to increase diversion of recyclable and organic materials	Medium Term	TBD	EPW	64
Assess opportunities to extend existing residential waste reduction programs to multi-family (e.g. large item pick-up program)	Medium Term	\$ ■	EPW	69
Explore partnerships to promote sustainable waste management with institutions such as School District 43	Medium Term	\$	EPW	70

Action Implementation Tables

Actions	Timeline	New Expense	Lead Department	Action Number
Waste Management				
Collaborate with local business associations and Metro Vancouver to promote waste reduction and recycling for businesses (e.g. Promoting Metro Vancouver’s food recovery network)	Medium Term	\$	EPW	72
Reduce illegal dumping and littering through education and bylaw enforcement programs	Medium Term	\$	EPW	80
Continue to encourage item re-use through existing programs (e.g. Citywide Garage Sale and Give-away) and explore new programs (e.g. Repair Cafés)	Medium Term	\$	EPW	82
Continue to require waste separation at large City events (>100 participants) and consider expanding these requirements to smaller events	Long Term	TBD	PRCF	75
Review and update the Parks Solid Waste Management Plan	Long Term	\$\$	PRCF	76
Pilot a Pop-up Junk Drop program to facilitate convenient disposal of items such as hazardous waste and large items	Long Term	\$\$	EPW	81
Reduce improper sorting of residential waste through education and enforcement of the Solid Waste Management Bylaw	Ongoing	n/a	EPW	62
Advocate for enhanced recycling options through the Province and EPR Programs (e.g. textiles, electronics, large items including mattresses and furniture, Styrofoam, plastic bags, batteries from electric vehicles)	Ongoing	n/a	EPW	68
Continue to provide waste separation at civic facilities and promote recycling initiatives such as battery and office supply recycling	Ongoing	n/a	EPW + PRCF	74
Continue to advocate for the development of consistent single-use item strategies and regulations within the context of federal and provincial frameworks	Ongoing	n/a	EPW	77

Actions	Timeline	New Expense	Lead Department	Action Number
Water Management				
Implement the Enhanced Water Conservation Strategy to further reduce water consumption	Short Term	n/a	EPW	83
Update the Drinking Water Conservation Plan Bylaw to include the new regional restrictions (i.e. one day per week lawn watering)	Short Term	n/a	EPW	85
Provide incentives for water efficient appliances and tools (e.g. rebates in partnership with BC Hydro and piloting a new toilet rebate program)	Short Term	n/a	EPW	88
Require the installation of water meter-ready connections for new single-family homes as a condition of new development approval as well as for City construction projects and water service replacements	Short Term	n/a	EPW	89
Implement a statistical metering program to inform a future decision on multi-family water meter setters and a future report on residential water metering implementation options	Short Term	n/a	EPW	90
Investigate seasonal water rates to provide a financial incentive to use less water when supply is reduced	Short term	n/a	EPW	93
Undertake an audit of civic facilities to identify and prioritize water conservation opportunities and upgrades	Short Term	n/a	EPW	94
Update the Stormwater Management Policy and Design Manual with new rainwater Intensity-Duration-Frequency (IDF) curves to reflect the modelled future impacts of climate change	Short Term	n/a	EPW	101
Pursue targeted education and enforcement opportunities to reduce pollution in watercourses by analyzing and mapping the City's spill response data	Short Term	n/a	EPW	104
Create and expand education, outreach and volunteer opportunities related to residential stormwater management (e.g. Storm Drain Marking Program, Adopt-A-Catch Basin Program and continue litter clean-ups)	Short Term	n/a	EPW	105

Action Implementation Tables

Actions	Timeline	New Expense	Lead Department	Action Number
Water Management				
Enhance the inflow and infiltration abatement program (e.g. to reduce wet weather inflow and infiltration volumes and sanitary sewer overflows)	Short Term	\$\$\$	EPW	106
Expand the City's water conservation education program to address topics such as efficient irrigation systems and drought tolerant landscaping	Medium Term	n/a	EPW	87
Analyze water meter data to identify high consumers and create targeted conservation education and support plans	Medium Term	n/a	EPW	91
Coordinate with neighbouring municipalities to complete Integrated Watershed Management Plans for all major remaining urban watersheds (e.g. Stoney Creek)	Medium Term	\$\$	EPW	97
Enhance erosion and sediment control education and enforcement including development of new strategies for single family developments	Medium Term	n/a	EPW	102
Explore ways to increase onsite rain and storm water retention, such as through pervious area requirements, guidelines or incentives, with a focus on single family developments	Medium Term	n/a	EPW + PD	103
Investigate the use of rainwater, groundwater, and greywater re-use systems to reduce water demand (e.g. consider for larger multi-family and commercial developments)	Long Term	n/a	EPW	86
Partner with Metro Vancouver to encourage businesses to reduce water use, adopt water efficient upgrades and detect leaks	Long Term	n/a	EPW	92
Expand and apply the City's Rainwater Management Guidelines to capital projects, where practical, and to new land development citywide except in areas with steep slopes susceptible to landslides	Long Term	n/a	EPW + PRCF	100

Actions	Timeline	New Expense	Lead Department	Action Number
Water Management				
Continue enforcement of regional water use restrictions in collaboration with regional partners and advocate for further restrictions during peak usage	Ongoing	n/a	EPW	84
Investigate opportunities to access groundwater for irrigation of City assets (e.g. Town Centre Park) and to provide additional emergency drinking water sources	Ongoing	n/a	EPW	95
Enhance the City's leak detection and repair program	Ongoing	n/a	EPW	96
Identify and pursue opportunities to daylight creeks in alignment with the City's Integrated Watershed Management Plans	Ongoing	\$\$\$	EPW	98
Monitor flow rates and water quality in watercourses and apply adaptive management where needed (as per the City's Integrated Watershed Management Plans and Metro Vancouver's Integrated Liquid Waste and Resource Management Plan)	Ongoing	n/a	EPW	99
Review and improve sanitary sewer system capacity with consideration for population growth to prevent sanitary sewer overflows	Ongoing	\$	EPW	107

Action Implementation Tables

Actions	Timeline	New Expense	Lead Department	Action Number
Natural Areas, Wildlife and Habitat				
Develop a citywide Urban Forest Management Plan that considers tree retention, stewardship, forest and ecosystem health, public safety and climate change impacts	Short Term	n/a	PRCF	121
Measure tree canopy cover percentages in developed neighbourhoods (Expand on the work completed by Metro Vancouver through the “Regional Tree Canopy Cover and Impervious Surfaces” analysis)	Short Term	\$	PRCF	123
Amend the Zoning Bylaw to extend Northeast Area tree replanting requirements citywide and re-evaluate requirements to ensure they are resilient to climate change	Short Term	\$	PD + PRCF	125
Participate in a collaborative working group with the Ministry of Environment and Climate Change Strategy and other local governments to support actions to protect wildlife from second-generation anticoagulant rodenticides (SGAR) use	Short Term	n/a	EPW	133
Create a best management guide and design specifications for wildlife resistant garbage and green waste storage in multifamily developments	Short Term	\$\$	PD + EPW	134
Develop a new citywide Invasive Species Management Plan and continue to remove invasive species through the Bad Seed Program	Medium Term	\$\$	PRCF	114
Evaluate opportunities to reduce night-time light pollution to minimize impacts to wildlife	Medium Term	\$	EPW	118
Identify opportunities to enhance the protection of nesting birds through existing City policies (e.g. City Watercourse Protection Development Permit requirements, subdivision Preliminary Layout Approval letters) that complement provincial and federal regulations	Medium Term	n/a	EPW	119
Identify and implement strategies to increase tree canopy cover at the neighbourhood level on private and public lands	Medium Term	n/a	PRCF + PD	124

Actions	Timeline	New Expense	Lead Department	Action Number
Natural Areas, Wildlife and Habitat				
Review the City's urban wildlife education and enforcement programs and identify areas for enhancement and further collaboration with partners (e.g. Conservation Officer Service, neighbouring municipalities, and citizen bear aware groups)	Medium Term	n/a	EPW	131
Amend garbage and green waste storage and set out requirements in the solid waste and wildlife bylaws to include multi-family properties	Medium Term	n/a	EPW	135
Collaboratively identify, protect, enhance and restore natural and urban elements of a regional green infrastructure network	Long Term	TBD	PRCF	117
Develop forest management plans for all key natural area parks	Long Term	\$\$\$	PRCF	122
Implement the Coquitlam Parks Wayfinding Guidelines to improve connectivity of all neighbourhoods to the parks and trails system	Long Term	\$	PRCF	130
Provide environmental education programs and volunteer engagement initiatives for all ages and abilities in collaboration with community and regional partners	Ongoing	n/a	PRCF	108
Engage youth through youth-focused volunteer opportunities, school programs and outdoor experiences (e.g. trail building, park hosting and sustainability leadership committees)	Ongoing	n/a	PRCF	109
Recognize environmental champions through programs such as the Environmental Achievement Awards and Communities in Bloom	Ongoing	n/a	EPW	110
Support small scale pocket habitats and gardens (e.g. pollinator gardens) in neighbourhoods and commercial areas through educational resources and programs	Ongoing	\$	PRCF	111
Promote and support community-based science initiatives (e.g. City Nature Challenge, bioblitz, water quality monitoring, backyard bird counts, i-naturalist projects)	Ongoing	n/a	PRCF + EPW	112

Action Implementation Tables

Actions	Timeline	New Expense	Lead Department	Action Number
Natural Areas, Wildlife and Habitat				
Continue to work with kwikwəłəm First Nation, BC Hydro, Metro Vancouver, Fisheries and Oceans Canada and other partners through the kwikwəłəm Salmon Restoration Program to restore sockeye salmon to the Coquitlam River Watershed	Ongoing	n/a	EPW	113
Decrease the use of pesticides citywide through enhanced educational programs and bylaw enforcement	Ongoing	n/a	EPW	115
Explore the designation and protection of wildlife corridors through the area and neighbourhood planning process where feasible and desirable	Ongoing	n/a	PD + EPW	116
Continue to foster inter-governmental cooperation to collaboratively conserve species and ecosystems at risk, including participation on the provincially-led Species and Ecosystems at Risk Local Government Working Group and their related initiatives	Ongoing	n/a	EPW	120
Increase tree planting initiatives on public lands and implement new tree planting programs on private lands (e.g. Adopt-A-Tree Program, incentives to plant large trees that sequester more carbon)	Ongoing	\$ ■	PRCF	126
Prioritize planting of trees and vegetation that are resilient to climate change on public lands and support climate resilient tree planting on private lands through education and outreach	Ongoing	n/a	PRCF	127
Identify opportunities to increase access and availability of quality greenspaces for all in every neighbourhood (e.g. by acquiring parkland, planting street trees, creating “pocket parks”, encouraging backyard tree planting and engaging local residents in greening their neighbourhoods)	Ongoing	TBD	PRCF	128

Actions	Timeline	New Expense	Lead Department	Action Number
Natural Areas, Wildlife and Habitat				
Enhance, maintain, and increase parks, trails and walking/cycling infrastructure in alignment with the City's Master Trail Plan (e.g. sections providing linkages to larger trail systems or access from neighbourhoods to transportation hubs and commercial nodes are highest priority)	Ongoing	n/a	PRCF	129
Provide education to prevent pest infestations and to encourage humane standards for treatment of pest issues that also eliminates the risk of secondary poisoning of wildlife	Ongoing	n/a	EPW	132

Glossary

ACTIVE TRANSPORTATION includes self-powered modes of transportation such as walking, biking, skateboarding, in-line skating/rollerblading, jogging and running, wheel chairing, snowshoeing and cross-country skiing.

BIODIVERSITY is the variety of species and ecosystems, and the ecological processes that they are part of.

BRITISH COLUMBIA 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.

CARBON NEUTRAL REGION is a region that has achieved the deepest greenhouse gas emissions reductions possible across all economic sectors, and removes or captures sufficient carbon dioxide to balance any remaining regional greenhouse gas emissions.

CARBON SEQUESTRATION is the removal of carbon dioxide from the air and the long-term storage of carbon to mitigate climate change.

CLIMATE means patterns of variability in atmospheric conditions in a given region over a long period of time, often decades or longer. This contrasts with weather which describes current atmospheric conditions (i.e. it's raining or windy).

CLIMATE CHANGE refers to any significant long-term change in the expected patterns of average weather of a region over a significant time period.

CLIMATE MITIGATION actions reduce GHG emissions entering the atmosphere such as decreasing the number of cars on the road relying on fossil fuels, creating energy-efficient buildings, increasing the quantity and quality of forested areas and expanding renewable energy sources.

CLIMATE ADAPTATION is managing and minimizing the risks of climate change impacts to build resilience through actions such as flood protections, infrastructure upgrades and emergency management plans.

CLIMATE RISK EVENT refers to a potentially hazardous atmospheric phenomenon. A natural or human-induced physical climate event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision and environmental resources.

CIRCULAR ECONOMY is a way of doing business that extracts as much value as possible from resources by recycling, repairing, reusing, repurposing, or refurbishing products and materials, eliminating waste and greenhouse gas emissions at the design stage.

COMMUNITY CLIMATE ACTION refers to efforts that reduce carbon pollution (or greenhouse gas emissions) across the community. The choices we all make about how we get around, the houses and businesses we build and maintain, as well as how we consume and dispose of products and materials all impact the level of GHG emissions we create. Incentives, regulations and legislation from senior levels of government, along with policies, guidelines and bylaws from municipal governments influence decision-making and enable positive actions of residents and businesses within a community to limit our carbon pollution.

CORPORATE CLIMATE ACTION refers to efforts to address climate change that the City has direct influence and control over. It is about taking steps to reduce carbon pollution (or greenhouse gas emissions) generated through local government operations including civic buildings (City Hall, the Austin Works Yard, recreation centres, libraries, etc.), fleet (both on- and off-road vehicles and equipment), infrastructure (streetlights, sports field lighting, etc.), work completed by contractors, and waste and ensures that civic infrastructure is resilient to changing climate conditions.

ECOSYSTEMS describe all the plants and animals that live in a particular area together with the relationships between them and their environment.

Definitions are primarily from the draft Metro 2050 Discussion Papers. Some definitions sourced from City documents (Climate Adaptation Strategic Plan), UBC academic papers, other municipalities' publications and Government of Canada sources.

ECOSYSTEM SERVICES are the benefits people obtain from ecosystems. These services can be grouped into four main types:

- Provisioning services include material and energy outputs from ecosystems, including food, fresh water, and raw materials used for construction and energy like wood.
- Regulating services refer to the services provided by ecosystems in processing and assimilating pollution, stabilizing water flows and soil erosion, controlling local climates, and storing carbon.
- Cultural services are the non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, recreation, and aesthetic enjoyment.
- Supporting services underpin all other ecosystem services. Ecosystems provide habitats for all plants and animals while depending on a diversity.

FIRST AND LAST KILOMETER connections refer to the beginning and end of individual trips made primarily by public transit. The quality of connections between transit users' homes, workplaces or other major destinations and their nearest transit stations, mobility hubs, or fixed-route bus services has a significant influence on how and if they will use transit.

GREEN AND BLUE CORRIDORS refer to natural areas and infrastructure such as ravines, greenways, streams and creeks which provide a connection to terrestrial and aquatic habitats within an urban area where habitat is typically fragmented.

GREEN INFRASTRUCTURE is a tool for providing biodiversity and climate benefits through nature based solutions. It includes natural, enhanced, and engineered assets that collectively provide society with ecosystem services required for healthy living.

GREEN INFRASTRUCTURE NETWORK is a connected framework of protected natural areas (sometimes called hubs) and corridors that provide benefits to both people and wildlife. Benefits range from provision of important habitat and recreational opportunities to flood attenuation, stormwater management, carbon sequestration, and improved air and water quality.

GREEN STREET refers to installations aimed to enhance public space, manage rainwater, provide habitat for wildlife, and add green space to the communities where we live, work, and play. They typically enhance previously under-utilized spaces including boulevards, parking lots, vacant lots and road rights of way. Enhancements could include pollinator gardens, shade trees, public seating and public art.

GREENHOUSE GASES are air contaminants that trap heat and are the cause of climate change. Greenhouse gases include carbon dioxide and nitrous oxide, as well as short-lived climate forcers such as methane, halocarbons, black carbon and ozone. Limiting or preventing greenhouse gas emissions and removing these gases from the atmosphere is critical to avoiding catastrophic climate change (sometimes referred to as climate change mitigation).

GREY INFRASTRUCTURE refers to the human-engineered infrastructure for water resources such as water and wastewater treatment plants, pipelines, and reservoirs. Grey infrastructure typically refers to components of a centralized approach to water management.

INFLOW AND INFILTRATION (I&I) happens when water from the environment that does not need to be treated enters the sewage system. Infiltration refers to groundwater entering the system. Inflow refers to rainwater (stormwater) entering the system.

INTEGRATED WATERSHED MANAGEMENT PLANS investigate issues related to the quality and quantity of stormwater runoff, flood protection, environmental protection of aquatic resources, wildlife and their habitats, land use, greenways, and recreation. The IWMP's outline cost effective solutions (capital, operation and maintenance) complete with implementation and maintenance plans.

LOW CARBON RESILIENCE is a lens that coordinates adaptation and mitigation strategies in planning, policy, and implementation processes. LCR strategies can have co-benefits for health, equity, biodiversity and community livability.

Glossary

MOBILITY HUBS are defined as places where different sustainable transportation modes are integrated seamlessly to help promote connectivity and improve the transit user experience. Mobility hubs will be located near major transit stations and key destinations and will feature such elements as enhanced bike parking facilities, shared micro-mobility (e-bikes/e-scooters) services, passenger pick-up and drop-off spaces, car share spaces, and EV charging infrastructure.

NATURAL AREAS or natural green spaces in the context of the City's park system are a distinct sub-system of parkland based on landscape features and ecological functionality. This sub-system provides much of the "green infrastructure" in the City and includes wetlands, creeks and riparian vegetation, remnant forests, hazardous slopes, flood plains, utility corridors and greenways. The natural space system is intended primarily to preserve the land and water base that supports the ecological needs of humans and wildlife, and to enhance the biodiversity within the municipality.

NATURAL ASSETS are the stock of natural resources and ecosystems (including geology, soil, air, water and all living things) that provide benefits to people. Examples include forests, wetlands, and streams. It is from these natural assets that humans derive a wide range of services, often called ecosystem services, which make human life possible.

PUBLIC REALM consists of the spaces between buildings, including streetscapes, building frontages, walkways and public gathering places.

RENEWABLE ENERGY is low or zero emission energy that is replenished over days or years. In Metro Vancouver, clean, renewable energy will be primarily electricity from renewable sources such as hydro or solar power. Other forms of renewable energy, such as wood waste, biofuels, renewable natural gas, geothermal and wind energy, have a lower carbon footprint than comparable fossil fuels and are expected to support a transition to a carbon-neutral region. However, they still produce emissions of common air contaminants, which have potential negative impacts for public health and the environment.

RIPARIAN refers to areas close to or on the bank of a watercourse.

RESILIENT/RESILIENCY to climate describes the capacity of ecosystems, infrastructure, economies, and communities to absorb the impacts of climate change while maintaining essential services and functions needed to support health and wellbeing.

STORMCEPTOR is a prefabricated, underground unit that separates oils, grease, and sediment from stormwater runoff when installed with an existing or new pipe conveyance system.

STORMWATER is the water from rain or melting snow that is not absorbed into the ground. In urban areas, stormwater goes into storm sewers (the grated drains found on streets), which empty directly into rivers, creeks or the ocean. Managing stormwater and drainage is key to preserving the health of urban streams and rivers and mitigating property damage through flood events.

STORMWATER MANAGEMENT is the management of water (from rain or melting snow) that is not absorbed into the ground. In nature, trees and earth help absorb rain slowly, breaking down pollutants, refilling groundwater and keeping waterways healthy. Maintaining this cycle is a challenge in urban areas that are covered in buildings, roads and other surfaces that don't allow rainwater to soak into the ground. The traditional approach to stormwater management was to drain stormwater as quickly as possible into the nearest waterway. Modern approaches try to mimic natural processes and allow stormwater to soak into the ground or be released more slowly into local waters.

SUSTAINABLE MODE SHARE is the number of transit, bike or walking trips divided by the total trips over the same time period.

SUSTAINABILITY means meeting our current needs without compromising the ability of future generations to meet theirs. In addition to natural resources, social and economic resources are essential. Sustainability is not just environmentalism, but also social equity and economic development.

TREE CANOPY COVER is the area covered by all deciduous and coniferous tree crowns as measured from above. Measuring tree canopy cover is a relatively simple way to determine the extent of the urban forest and the magnitude of services it provides.

URBAN CONTAINMENT BOUNDARY is a stable, long-term, regionally defined area for urban development that protects Agricultural, Conservation and Recreation, and Rural lands from developments requiring utility infrastructure and from auto-oriented, dispersed development patterns. Locating housing, regional transportation, and other infrastructure investments within the Urban Containment Boundary supports land development patterns that can protect food producing land, reduce energy demand and greenhouse gas emissions from commuter traffic, and secures land that stores carbon and helps communities adapt to climate change. Residential and employment infill development is encouraged within the Urban Containment Boundary.

URBAN FORESTS include all of the publicly and privately-owned trees and supporting vegetation in an urban area. This includes individual trees and groups of trees located in natural areas, parks, backyards, on streets, and in commercial and industrial zones. Other elements such as plants, water, soil, micro-organisms, and wildlife are also part of this forest community.

URBAN GREEN EQUITY is the fair access to, and governance of, urban vegetation regardless of differentiating factors, such as socioeconomic status, racialization, cultural background, or age.

URBAN HEAT ISLAND EFFECT describes urban areas that are hotter than nearby rural areas, driven by changes in the land surface by urban development. Urban heat islands can affect communities by increasing air conditioning costs, air quality impacts and greenhouse gas emissions, heat-related illness and mortality, and water pollution.

WASTE DIVERSION is a combination of waste reduction, reuse, recycling, and/or composting activities that reduces waste disposed at a landfill or incinerator.

WATERSHED is an area, usually defined by elevated ridges within which all water flows into the same catchment area such as a river or lake.

ZERO EMISSION VEHICLES is a vehicle that has the potential to produce no tailpipe emissions. They can still have a conventional internal combustion engine, but must also be able to operate without using it. For example, we consider the following vehicles to be ZEVs:

- battery-electric
- plug-in hybrid electric
- hydrogen fuel cell



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