CITY OF
NEW WESTMINSTER

Environmental Strategy & Action Plan

Prepared for
the City of New Westminster

August 2018



NEW WESTMINSTER

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ACKNOWLEDGEMENTS

The Environmental Strategy and Action Plan (ESAP) was created through the efforts of many key stakeholders and community members of New Westminster, as well as the insights of City of New Westminster staff. The following individuals and groups were particularly instrumental in its development:

- Mayor and Council (2018)
- Environment Advisory Committee (2017/2018), Councillor Jaimie McEvoy, Chair
- Engineering Department
- Office of the CAO
- Development Services Department
- Parks and Recreation Department
- All ESAP workshop participants (2017)
- All attendees of the Royal City, Green City event (2017)

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MAYOR'S STATEMENT



Promoting a healthy environment is critical to the well-being of our residents, both current and future, as well as the well-being of the planet. While many levels of government have jurisdiction over environmental matters, local governments have tremendous influence over how we use precious natural resources, how we manage waste and how we protect and enhance our local ecosystems. "Think Globally, Act Locally" is as valid today as it was when it first came into use half a century ago in the time when acid rain, smog and the growing ozone hole were top of mind issues. The City can lead by example, demonstrating best environmental practices in its corporate operations, and we can work with community partners, residents, and businesses to help create a better local environment.

Environmental sustainability can be very challenging in an older, highly urbanized community such as New Westminster, but our form, character, and history also provide many opportunities. Our urban forest is well developed and mature and our compact urban form provides excellent environmental opportunities, such as promoting low-carbon district energy systems and supporting the low-impact transportation modes of walking, cycling and transit.

The City has already taken the lead on many environmental initiatives in the past, such as recycling, tree protection, energy conservation and restoration of riparian zones along our watercourses. It is a signatory to the Blue Dot initiative, which enshrines the right to a healthy environment, and has created Envision 2032, the City's sustainability framework, which provides forward-thinking direction on the environmental goals that the City hopes to achieve by the year 2032. Our City 2041, the new Official Community Plan, also provides clear guidance on how the environment and natural areas are to be considered as we develop our City.

The Environmental Strategy and Action Plan has consolidated and integrated the directions of these previous plans, policies and practices to identify all other areas where the City could and should act to create a healthy environment and developed a comprehensive set of actions based on available best practices to achieve this.

We look forward to working with the community to implement the plan and to establish New Westminster as the "Royal City, Green City."

Jonathan X. Coté
Mayor of the City of New Westminster

EXECUTIVE SUMMARY

The Environmental Strategy and Action Plan is the City's comprehensive environmental master plan. Based in the Environmental Leadership pillar of the City's sustainability framework, Envision 2032, the Plan has been designed to set a clear path toward making New Westminster one of the most sustainable urban cities in British Columbia. It brings together both current and future strategies under a single coordinated effort that clearly outlines the way forward in the areas of environmental protection, climate change mitigation, ecological enhancement, environmental education and resilience.

The City of New Westminster has already made great strides in environmental sustainability. The creation of an overarching plan that supports and builds on the City's efforts was the next step towards the realization of a sustainable city and achieving the vision of New Westminster as "a responsible leader that takes bold action on climate change, protects and restores its natural areas, and minimizes the environmental footprint of its highly urbanized community."

The strategies and actions within the Plan are based on best practices in environmental action from around the world, and tailored to meet the unique needs and opportunities in New Westminster. These have been established in four major action areas:



Energy Emissions & Climate Change

Creating an energy-efficient and low-carbon community that is resilient to the impacts of climate change



Buildings, Sites & Urban Design

Integrating green features into buildings and neighbourhoods, advancing green building design, and ensuring environmentally sound construction practices



Water, Waste & Materials

Minimizing our impact on the earth's natural resources and working towards a net-zero society



Natural Areas & Habitat

Enhancing natural areas and integrate nature into the urban environment

In each of these four areas, key strategies and actions for both the community and the City as a corporation have been included, along with estimates of their costs and timelines for implementation. Over time, these actions will be updated as progress is made and new information becomes available.

The achievement of the City's environmental vison and the many goals within the Plan will take the effort of the whole community of New Westminster. Just as community input was integral to the development of the Plan, so too will the efforts of community groups, businesses, developers, and individuals to its continued success. Identifying key performance indicators that track progress towards each goal will be instrumental in both ensuring and illustrating the city's success.



INTRODUCTION

What is Sustainability?

Achieving "sustainability" generally refers to the need to meet the social, economic and environmental needs of the present generation without compromising the ability of future generations to meet their own needs. It is a concept that is also often described as a "triple bottom line" approach, in that the impacts of our decisions on social and environmental well-being are considered as equally important as implications for the economy.

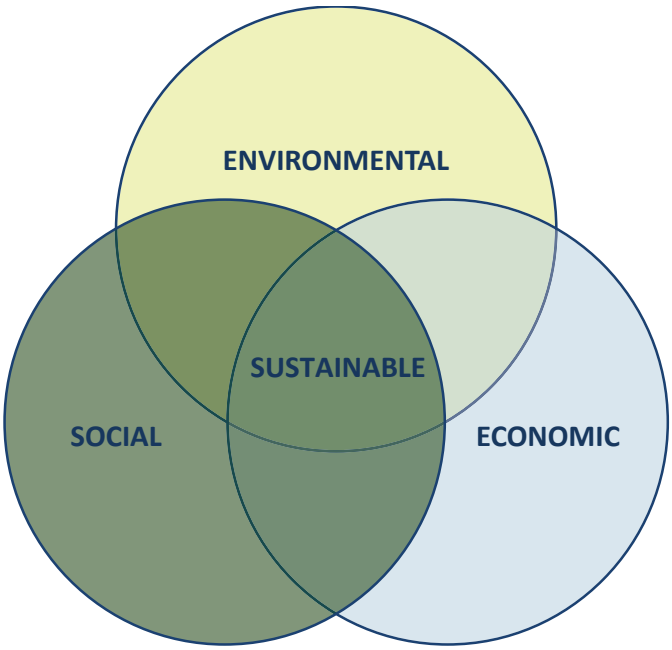


Figure 1: The three sustainability spheres

These three key interests, or "pillars," can be thought of as overlapping spheres in which a careful balance of each sphere contributes to the achievement of sustainability (see Figure 1). Taking this approach not only means that the economy must work to the benefit of society, but that the economy and society must both fit within the constraints and capacities of the natural world. New Westminster has taken this concept further by establishing social and cultural interests as two distinct sustainability spheres. Under this framework, community liveability and social equity are considered under the social sphere, while arts and culture are considered under the cultural sphere (see Figure 2).



Figure 2: New Westminster's approach to sustainability

Zeroing in on the Environment

A key dimension of sustainability is the need to ensure sustainable growth in the face of a rapidly growing world and increasing resource consumption. In addition to depleting our natural resources, the steady consumption of energy, water and materials is creating a number of serious consequences from climate change to biodiversity loss, ecosystem degradation and resource depletion.

Fortunately, actions that aim to restore these imbalances bring with them many co-benefits that can strengthen communities and also enhance the liveability of our cities. Scientists and citizens alike are recognizing that there is much to be gained from reducing our environmental footprint, and that reducing our impact on the Earth brings with it opportunities to help us lead healthier, more fulfilling lives. For example, increasing the energy efficiency of buildings reduces both greenhouse gas emissions and our energy bills. Naturalizing areas within our cities provides valuable habitat for native species and calming sanctuaries for our citizens. These are just two of the many opportunities to enhance community health and increase resilience through decisive action to achieve environmental sustainability.

A History of Environmental Action

The need to foster sustainability and resilience is being embraced across the world, just as it is in our own city. New Westminster is the oldest city in western Canada, and has a highly urbanized downtown and a growing population. Managing growth within the constraints of the city's physical boundaries while ensuring its continued sustainability presents a unique challenge to New Westminster, one that the City has been addressing since the first New Westminster Official Community Plan adopted in 1983.

In 2013, City Council adopted **Envision 2032**, which established a comprehensive framework incorporating sustainability as a cornerstone of all City plans, policies, projects and practices. **Envision 2032** is based on the Melbourne Principles for Sustainable Cities[1], developed by the United Nations Environment Program (UNEP) and International Council for Local Environmental Initiatives (ICLEI):

1. Apply long-term thinking to all decision making.
2. Achieve lasting economic security and social well-being, with vibrant arts and culture.
3. Recognize the intrinsic value of nature and work to enhance it.
4. Minimize our ecological footprint, which is the total impact of our production and consumption activities on the earth, whether this takes place within or outside of the city.
5. Strive to maintain harmony with natural systems when developing within the community.
6. Recognize and build on New Westminster's distinctive characteristics, including our history, human and cultural values, and built and natural heritage.
7. Support people with the resources they need to live more sustainable lifestyles and foster active participation in achieving the community's future vision together
8. Engage and enable community partners, including organizations, business, institutions and other levels of government, to work towards a common, sustainable future.
9. Strive towards continuous measurable improvement in meeting sustainability objectives.
10. Institutionalize accountability and transparency in governance practices.

The City further confirmed its commitment to environmental sustainability in April 2015 by joining the David Suzuki Foundation's *Blue Dot Movement* – a Canada-wide campaign calling on communities and municipalities across the nation to pledge their recognition of all Canadians' rights to a healthy environment.

The Blue Dot Movement is a David Suzuki Foundation-led campaign championing a federal environmental bill of rights to unify and strengthen Canada's framework of environmental laws to enshrine every Canadian's right to a healthy environment in the Charter of Rights and Freedoms. 170 Canadian municipalities have signed on in solidarity and support, including the City of New Westminster. Other sustainability leaders who have also signed on include Vancouver, Burnaby, and Whistler. For a full list of signatories, go to bluedot.ca/about/declarations



[1] *http://www.sustainablemelbourne.com/visions/the-melbourne-principles-for-sustainable-cities/*

Our City 2041, the City's 2017 OCP update, takes the high level directions from Envision 2032 and provides more detailed policies and actions to achieve these directions. It sets out a broad range of goals, including a number that relate directly to enhancing the sustainability and resilience of the community:

- Taking action to reduce greenhouse gas emissions and being resilient to the impacts of climate change
- Valuing its natural habitat areas that support biodiversity and healthy communities
- Protecting against land use-related hazards and managing associated risks

In addition to these overarching plans and policies, the City of New Westminster has taken environmental actions in a number of more detailed studies and plans. Each one is highly supportive of the City of New Westminster's efforts to achieve its environmental sustainability goals.

- The 2008 **Corporate Greenhouse Gas Reduction Plan** and the 2011 **Community Energy and Emissions Plan** (CEEP) set out a number of strategies and actions designed to reduce corporate and community-wide energy consumption and greenhouse gas (GHG) emissions.
- The 2017 **Integrated Stormwater Management Plan** (ISMP) is a strategy to address issues such as water quality and quantity that arise from excessive stormwater that runs off into watersheds. It includes a number of stormwater capture, filtration, and reuse targets to help reduce the pollution of our waterways.
- The 2016 **Urban Forest Management Strategy** (UFMS) outlines actions to protect the city's forest ecosystems by increasing the city's tree canopy, improving current tree management practices, and building community ownership of the urban forest.
- The 2015 **Master Transportation Plan** (MTP) describes a set of actions and directs programming and investment relevant to the City of New Westminster's transportation system. The strategic direction of the plan aims to create a balanced and multimodal transportation system that can accommodate a growing region.
- The 2010 **Ecological Inventory of Queensborough** was the City's first catalogue of ecological features and values, and was undertaken in support of the development of the Queensborough Community Plan.
- A city-wide **Ecological Inventory for New Westminster** was completed in 2015, which expanded on the work completed in Queensborough. The study identifies the natural areas and features that make up the city's ecological network, and provides and overview of the condition and value of each asset.

Other plans helping the City achieve its sustainability objectives include various neighbourhood plans, Development Permit Area guidelines as well as overarching regional strategies and bylaws, such as the **Light Intrusion Bylaw** and **Erosion and Sediment Control Bylaw**. Together they make up the policy landscape that helps the City achieve its vision of environmental sustainability



How Will We Achieve Environmental Sustainability?

While each of the plans and strategies described on the previous page contribute to a particular aspect of environmental sustainability, City staff identified the need for one overarching plan that creates a clear path forward for New Westminster.

Envision 2032 outlines a guiding framework for sustainability, in which "Descriptions of Success" in eleven different policy areas describe the sustainable future the City desires. These policy areas reside under the four pillars of sustainability: Arts & Culture, Community Liveability & Social Equity, Vibrant Economy and Environmental Leadership (Figure 2). It is the "Environmental Leadership" pillar that has informed the creation of the Environmental Strategy and Action Plan. (Figure 3).

The Plan outlines the specific and implementable actions and policies, both present and future, that must be taken in order to achieve that vision of a sustainable future. It sets out specific goals, strategies, actions and timelines for four of the major areas identified in **Envision 2032** that are related to the Environment:

- Energy and Emissions
- Buildings, Sites and Urban Design
- Resources, Waste, and Infrastructure
- Environment and Natural Areas

In short, the Environmental Strategy and Action Plan translates the vision and environmental direction of Envision 2032 into action and will support the achievement of many of the policies outlined in the OCP.



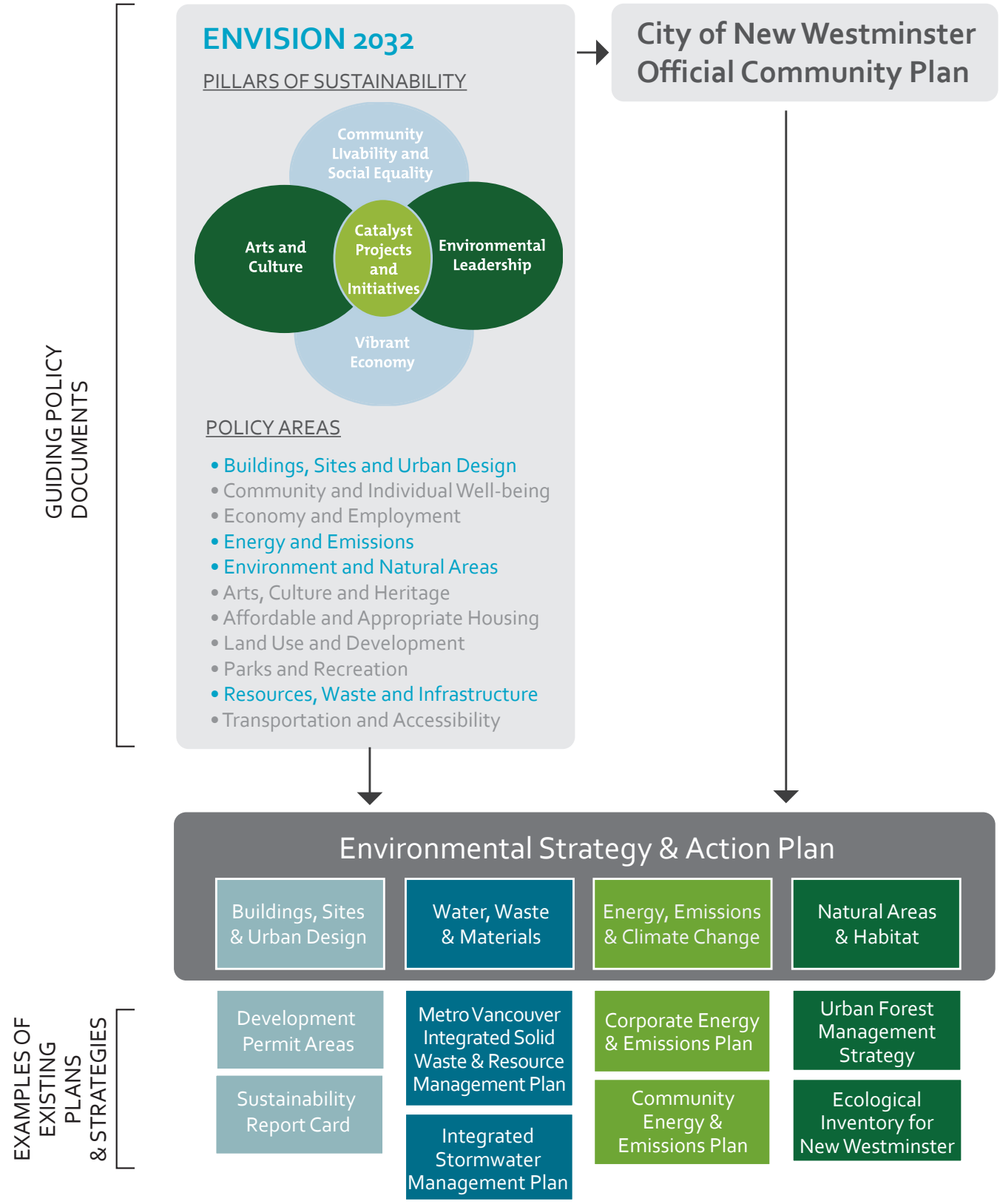


Figure 3: The City of New Westminster's Policy Landscape: How the ESAP Fits In

CRAFTING AN ENVIRONMENTAL STRATEGY & ACTION PLAN

Engaging Our Community

Community input was central to the development of this plan, from its early conception to its final draft. As a result, the plan is a product that reflects the uniqueness of the New Westminster community. Its success will rest on continued collaboration between the City and the many community groups, businesses, developers, and citizens who live and work in New Westminster.

The key groups involved in the development of this plan, and the way they were involved, are described below.

The Environment Advisory Committee(EAC)
As a key stakeholder in the development of the plan, the EAC provided guidance and advice on its contents and helped to craft its overarching vision and key goals.

City of New Westminster Staff
The City held extensive staff focus groups to solicit staff expertise and identify key departmental leads to implement proposed actions in the plan. Staff analyzed each action to ensure its fit and feasibility for New Westminster, and identified the resources and support that will be necessary to implement them.

Local Governments
Partnerships with other local governments are necessary to identify lessons learned, save costs and share efforts. The City held a workshop with a group of representatives from local and regional government environmental staff to explore a variety of ideas, identify environmental actions and opportunities, and share knowledge and resources.

Local Stakeholders
The City hosted a workshop for local environmental non-profit, neighbourhood, business, and youth groups from across the community in order to tap into local expertise and delve deeper into the key issues they felt needed to be addressed in the plan.

Members of the Community
Finally, the City engaged members of the public at large to make sure the plan would address local needs and concerns and reflect the values of the community. Over the course of the summer of 2017, the City hosted interactive pop-up booths at *Riverfest*, *Uptown Live*, and at the New Westminster farmers market designed to engage citizens and solicit ideas for key environmental actions. In the fall, the City posted a public survey over a period of four months to solicit community members' most important issues. In October 2017, the City hosted an interactive public event ("*Royal City, Green City*") at the Anvil Centre downtown featuring engaging speakers and dialogue. It was attended by over 130 participants including staff and community members.



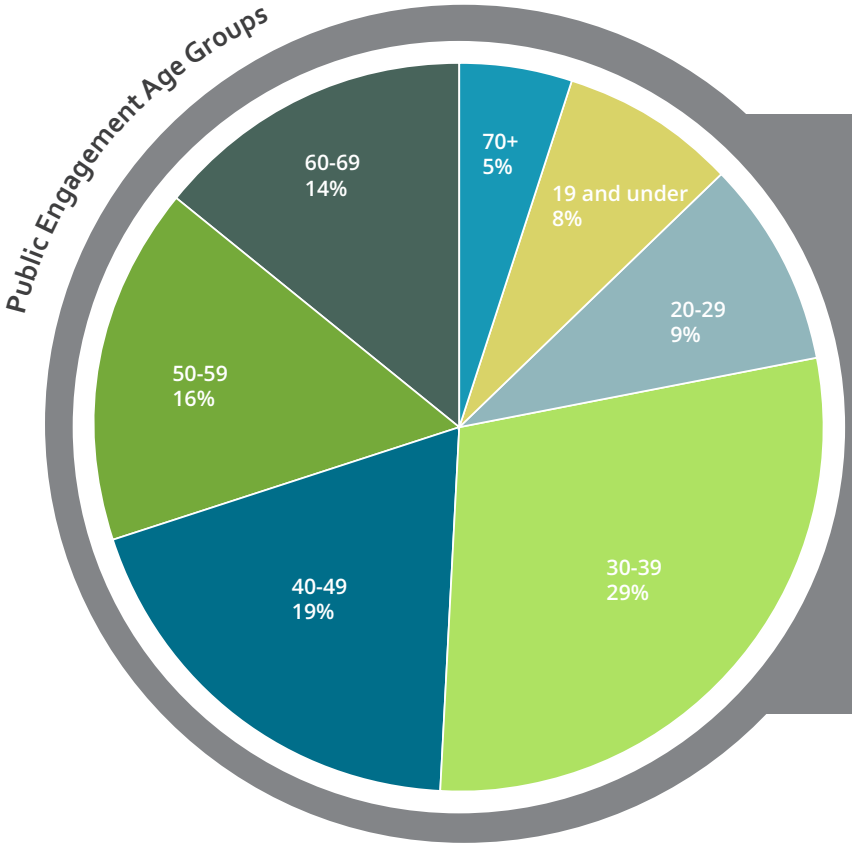








Community members at Royal City Green City: A night of inspiring speakers and ideas for the the City of New Westminster's Environmental Strategy & Action Plannvironmental Strategy & Action Plan



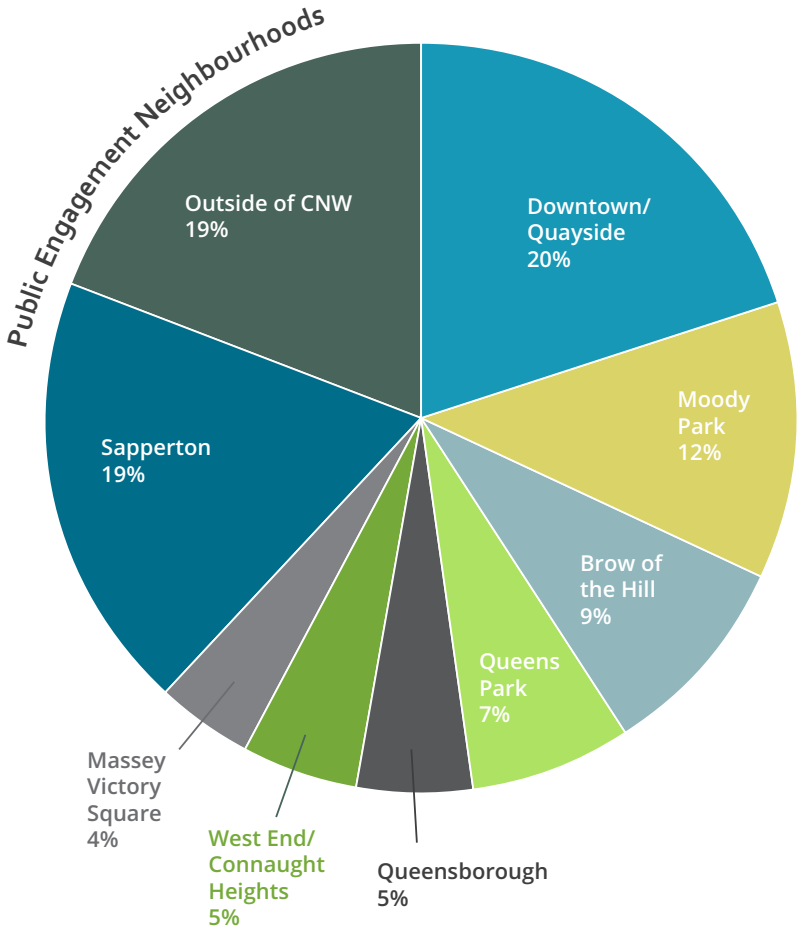
On October 25th, 2017, the City hosted Royal City, Green City: A night of inspiring speakers and your ideas for the City of New Westminster's Environmental Strategy & Action Plan. The event took place at the Anvil Centre theatre room, and saw over 130 guests in attendance. Community members took part in interactive discussion, listened to a panel of six speakers on a wide range of topics related to environmental sustainability, and offered their input on how the City should achieve its sustainability goals.

In total, the City consulted over 400 residents during the public engagment process:

85
Survey respondents

130
Open house (i.e. Royal City, Green City event) participants

194
Pop-up event attendees



Vision:
New Westminster is a responsible leader that takes bold action on climate change, protects and restores its natural areas, and minimizes the environmental footprint of its highly urbanized community.

Realizing Our Vision

The guiding vision of the City of New Westminster's Environmental Strategy and Action Plan was developed through the combined efforts of New Westminster staff and the City's Environment Advisory Committee, and endorsed by Council on January 16, 2017.

The resulting vision and accompanying vision statements guided the process of developing the plan and the strategies and actions included in the plan:

- We, the community of New Westminster, recognize our existence within, and our dependence upon, the natural environment, including the air, water, soil and habitat.
- We will find ways to protect and enhance our waterways, encourage biodiversity and create a more environmentally sustainable and resilient urban community.
- We will take measurable actions to green our urbanized community.
- We are a community that recognizes the value of working in collaboration with our citizens, neighbouring communities and other partners.
- We will strive to use resources wisely and are ready to take on the environmental challenges that the future will bring.



Meeting Our Goals

Following the establishment of the Vision, policy areas from Envision 2032 were used to identify more specific sets of overarching goals and sub-goals to be met. Like the Vision, goals were created through an iterative process of development through staff and EAC consultation, and received Council endorsement on October 30, 2017.

Each section of the plan delves deeper into each goal area and the strategies and actions required to meet them. The 14 goals included in the plan are listed below:

Energy, Emissions & Climate Change

Our aim: To create an energy-efficient and low-carbon community that is resilient to the impacts of climate change

Our goals:

1. Take action to conserve energy, increase efficiency and reduce emissions in new and existing buildings
2. Encourage the use of renewable, low-carbon energy systems that service our homes and communities
3. Reduce the release of emissions from transportation systems
4. Foster continuous and measurable improvements in energy use and emissions reductions
5. Prepare for and reduce the impacts and risks of climate change

Buildings, Sites & Urban Design

Our aim: To integrate green features into buildings and neighbourhoods, advance green building design and ensure environmentally sound construction practices

Our goals:

6. Establish guidelines and practices that help minimize the impacts of development on the environment
7. Integrate green infrastructure and preserve natural spaces in the design of new and existing developments



Our Goals

Water, Waste & Materials

Our aim: To minimize our impact on the earth's natural resources and work towards a net-zero society

Our goals:

8. Minimize waste generation and maximize waste diversion from the landfill
9. Maximize the conservation and protection of drinking water
10. Minimize the impact of waste and storm water on the receiving environment
11. Improve the sustainability of the local food system

Natural Areas & Habitat

Our aim: To enhance natural areas and integrate nature into the urban environment

Our goals:

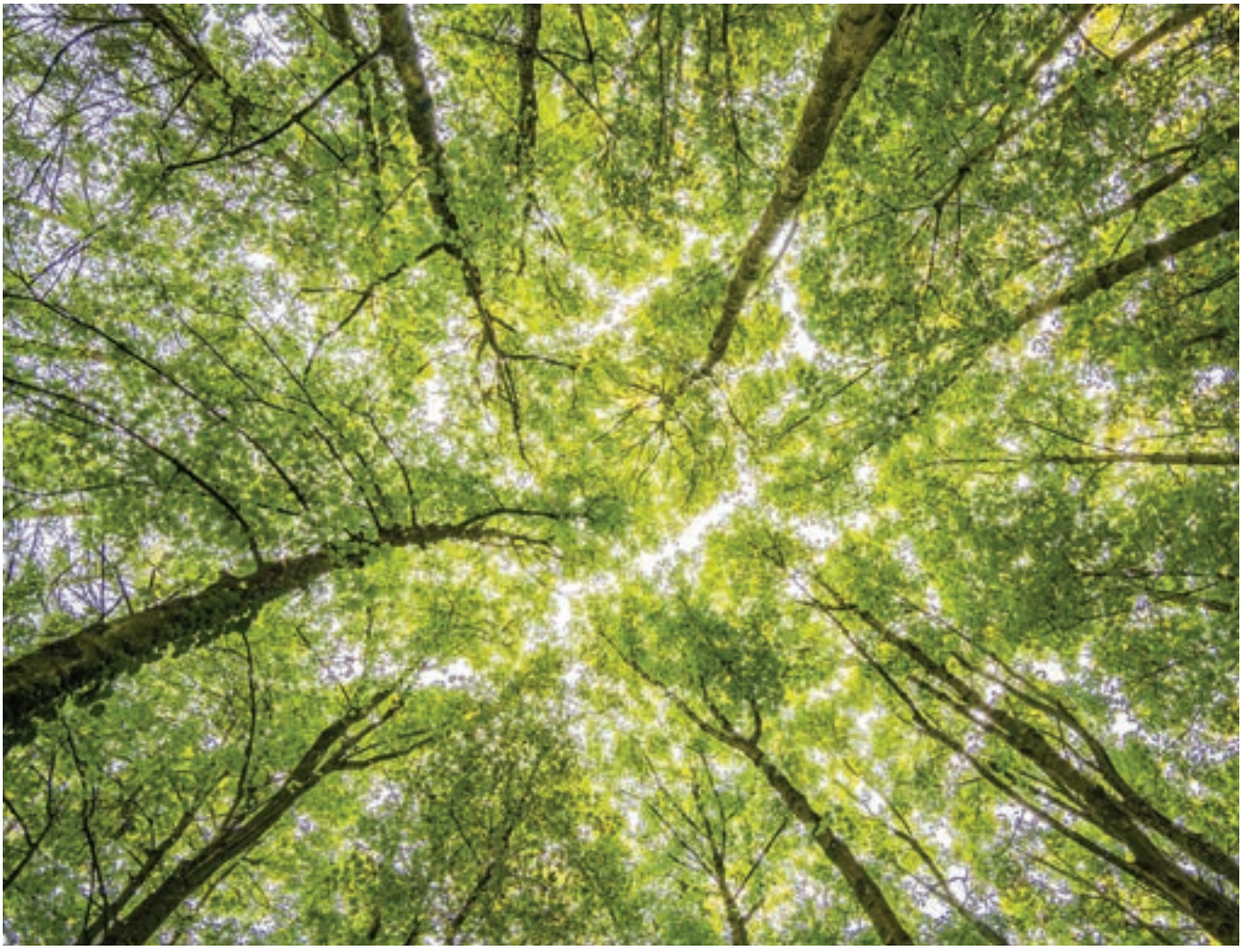
12. Protect and enhance river corridors and watercourses
13. Protect and restore the ecological integrity, biodiversity, and connectivity of natural areas
14. Integrate environmental considerations into city activities and practices

A Set of Environmental Actions

The Environmental Strategy & Action Plan is a comprehensive set of environmental strategies and actions that will help to meet these 14 goals and assist the City in achieving the sustainable and successful future outlined in **Envision 2032**.

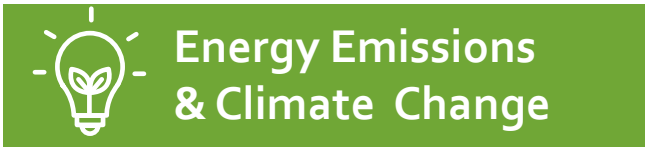
In addition to community and stakeholder engagement, the plan also draws on work that has already been done, both in and outside New Westminster. This process involved a review of City plans that had been adopted (e.g., the *Urban Forest Management Strategy*) in order to identify any existing environmental actions and strategies. This allowed for the creation of a matrix that clearly illustrated the areas where the City had demonstrated considerable progress and/or leadership (e.g., reducing solid waste), as well as areas where opportunities for improvement existed (e.g., preserving natural features in urbanized areas). To help "fill the gap", new actions were developed based on best practices in environmental action from across the globe, tailored to the specific needs of New Westminster.

Finally, each new action was examined by City staff to ensure it would help the City achieve its vision and goals, complemented existing City efforts, and would be feasible and cost-effective for City staff to implement. Staff conducted a high-level review of the necessary resources and capacities associated with each action. The final actions included in the plan range from building capacity (e.g., training) and providing education, to exploring partnerships and demonstrating corporate leadership.



HOW TO READ THIS DOCUMENT

This plan is organized into four key goal areas:









Each section provides the following information:

- A brief overview of the action area, and its importance to the City;
- Current policies and plans already in effect across the city
- The relevant goals for that area
- A high-level description of the key strategies necessary to meet those goals

Key actions for each strategy are listed in a corresponding table at the end of each section. In the table, actions are further described in terms of the following:

- Timing[2]: an indication of whether the action is already ongoing, or will be implemented in the short, medium, or long term (subject to available budget and capacity)
- One-time expense: estimates of one-time investments necessary for implementation
- Ongoing expense: estimates of ongoing financing needs for implementation

The purpose of these tables is to provide transparency on the resources necessary for each action included in the plan.

Abbreviation	Definition
$	‹ $ 50,000
$$	$ 50,000 - $100,000
$$$	› $100,000
ST	Short Term
MT	Medium Term
LT	Long Term
OG	Ongoing
N/A	Not applicable

For a compiled action list, timeline and resources table for all sections please see the Appendix.

[2] *The estimated short term timeline is 1-2 years, medium term is 3-5 years, and long term is over 5 years. However, the implementation of individual actions will be subject to availability of approved funding, resources and capacity.*



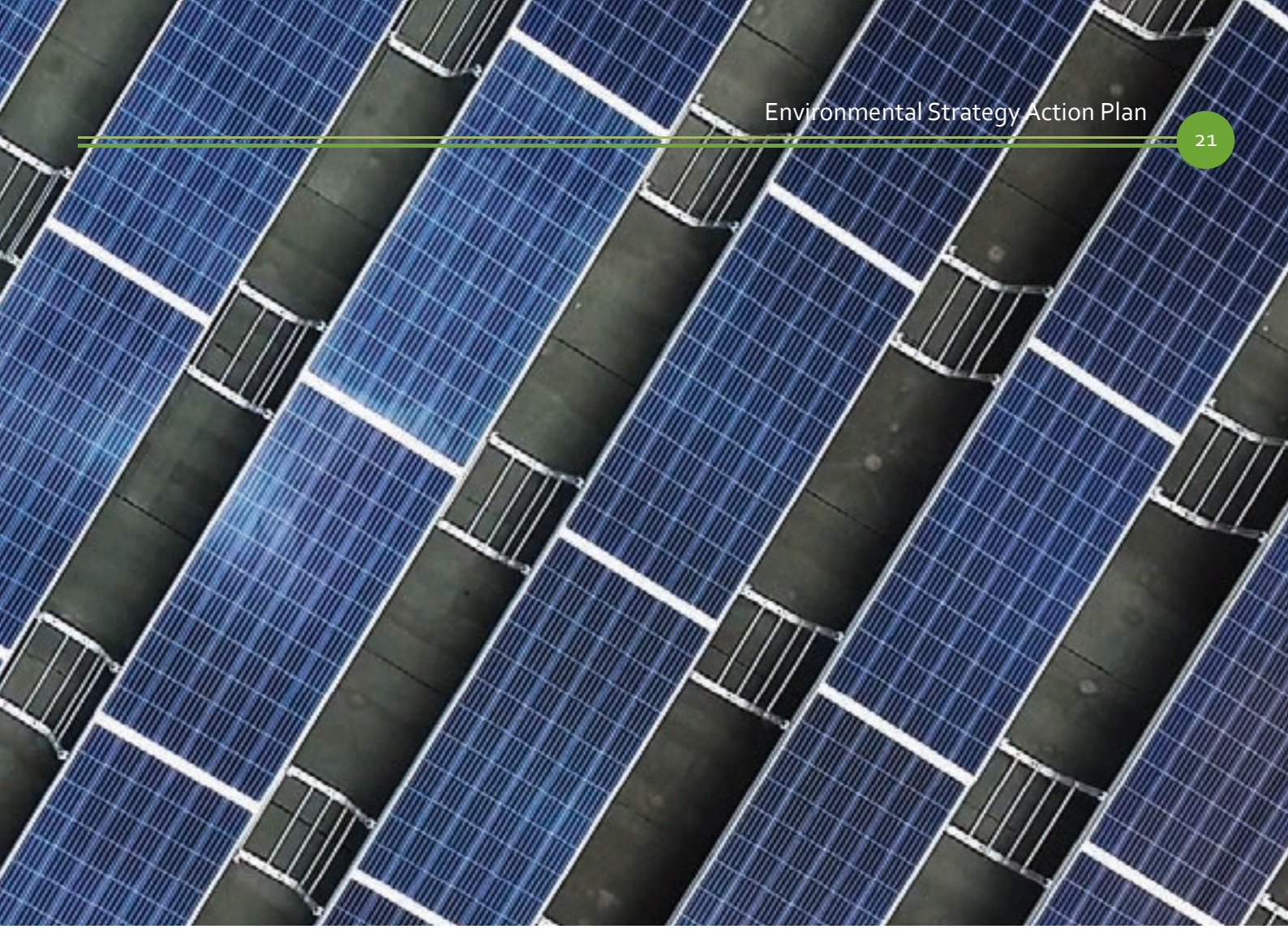


ENERGY, EMISSIONS & CLIMATE CHANGE

The cumulative impact of climate change caused by greenhouse gas (GHG) emissions has created many problems for communities around the world. It is important that the City of New Westminster continues to do its part in reducing or curbing the activities that contribute to climate change, both across the community as well as within internal City operations. The City has committed to this task by setting a community GHG emissions reduction target of 15% below 2011 levels by 2030.

Changing the way that we use energy is key to reducing the City's emissions. Fortunately, the primary source of electricity in British Columbia is hydropower, which emits relatively few GHG emissions. However, the use of energy sources derived from fossil fuels, such as coal or natural gas, are significant sources of greenhouse gas (GHG) emissions. Reducing energy consumption and shifting to cleaner sources of energy, such as hydropower, solar, and wind, will significantly improve the city's environmental performance.

Even with these efforts to reduce our emissions, we are already committed to a certain level of climate change. As a result, the City is also preparing to adapt to the impacts of climate change, and reducing the risks to our community associated with a warming climate.



The actions presented in this section will help the City of New Westminster:

- Take action to conserve energy, increase efficiency, and reduce emissions in new and existing buildings
- Encourage the use of renewable, low carbon energy systems
- Reduce the release of emissions from transportation systems
- Foster continuous measurable improvements in energy use and emissions reductions
- Prepare for and reduce impacts and risks related to climate change

The City is already engaged in reducing energy and emissions in several areas

For example, the ***2011 Community Energy and Emissions Plan*** outlined a target of reducing emissions by 15% below 2011 levels by 2030. The City has been engaged in several actions to meet that target, from reducing energy use in new and existing in City building and facilities, to shifting to low carbon electric vehicles.

The ***Corporate Energy & Greenhouse Gas Emissions Management Plan*** has a target to reduce emissions by 15% by 2017, based on 2007 levels. This includes implementing projects to reduce energy consumption in City facilities and fleet.

The ***Master Transportation Plan*** also aims to increase the share of walking, cycling and transit trips to 50% of all transportation trips made by 2031, with no additional increase in regional through traffic.

Goal #1
Take Action to Conserve Energy, Increase Efficiency, and Reduce Emissions in New and Existing Buildings

Buildings currently account for approximately 60% of the city's total energy use, and the number of buildings in New Westminster continues to grow. This is why the city's building stock presents a significant opportunity for both energy and emissions savings. For new development, adopting higher performance energy codes, such as the new BC Energy Step Code, can ensure that buildings are designed and built so that the energy use and emissions associated with their operations are reduced. For existing buildings, energy use and emissions reductions are harder to achieve, but can still be achieved through the implementation of energy efficient management practices, mechanical equipment and envelope upgrades, as well as the purchase or generation of renewable energy.

Strategy 1.1: Attain higher levels of building performance in new buildings

The primary means of improving energy performance in new buildings in British Columbia is through the *BC Energy Step Code*. The *Step Code* is a voluntary provincial building standard that provides municipalities with a series of measurable energy efficiency requirements for construction that can be included into their bylaws, and/or that developers can voluntarily achieve. The City will begin by adopting lower steps and incrementally move to higher Step Code performance levels over time, with the ultimate objective of requiring net zero energy-ready levels of performance in all new buildings by the year 2032. New buildings connecting to a low carbon district energy system will have a lighter Step Code performance requirement.

Strategy 1.2: Expand the existing Energy Save New West program

Energy Save New West is an established energy saving program aimed at improving the energy efficiency of homes and businesses and reducing greenhouse gas emissions. The program provides tools to residents that support home energy reductions – including energy evaluations, energy upgrades, utility rebates and incentives. This program has already been successful in helping many homeowners and businesses improve their buildings' energy performance, and reduce the cost of energy bills. The City will continue to expand on the success of this program to develop new opportunities for residents to save energy and money.

Strategy 1.3: Reduce corporate energy use and greenhouse gas emissions

The City is committed to leading the way by demonstrating best practices in energy and emissions reduction in its own operations. In 2008, the City adopted a 10-year *Corporate Energy and Emissions Plan* that set a target to reduce 15% of total corporate emissions from 2007 levels by 2017. The *2016 Corporate Energy and Emission Reduction Plan Update* indicated that the 2016 GHG tonnage is at approximately 7.7% below the baseline year. Now that the plan is at the end of its term, the City will develop a renewed strategy for the next 10 years, including new targets, an updated civic green building policy and a set of projects necessary to achieve them in the areas of buildings, fleet vehicles, lighting, water, and wastewater.

Actions	Timeline	One-time expense	Ongoing expense
1.1a. Adopt lower levels of the BC Step Code initially for Part 9 and Part 3 buildings, and incrementally increase to higher Steps over a five year period	ST	$$	$
1.2a. Continue to implement and expand the Energy Save New West Program	OG	$	$$
1.3a. Update and implement a 10-year Corporate Energy and Emissions Reduction Strategy (CEERS)	ST	$	N/A
1.3b. Review and update the City's corporate green building policy	ST	N/A	N/A



Goal #2
Encourage the Use of Renewable, Low Carbon Energy Systems that Service Our Homes and Communities

A key action that the City will need to take to reduce emissions is to make the switch from emissions-intensive energy systems to ones that produce fewer greenhouse gas emissions. New Westminster has already been active in energy conservation and efficiency, and has a particularly unique opportunity in that it owns its own electrical utility. The City's Electric Utility has begun to explore renewable energy generation. Forms of energy under exploration include solar power for electricity, district energy, and waste heat recovery.

Strategy 2.1: Explore and foster low carbon district energy

District energy systems (DES) are cost-effective and efficient heating and cooling networks capable of servicing multiple buildings in an area. Wherever a low-carbon fuel source is used to generate heat or electricity, there is a corresponding reduction of the city's emissions. The City is in the process of exploring a district energy system in the Sapperton area, which would provide a low-carbon source of energy to the surrounding area close to the Braid and Sapperton Skytrain stations. The City will also investigate the feasibility of district energy in other the areas of the New Westminster (e.g., Downtown, Uptown, and Lower Twelfth).

Strategy 2.2: Expand the existing Energy Save New West program

New Westminster's Urban Solar Garden program allows residents, businesses, non-profits, and institutional organizations served by the city's electrical utility to purchase solar panels located on a municipal property. While the panel is not technically "owned" by the purchaser, they are able to use the energy generated by the panel as credits toward lowering their own electricity bills. The City will continue to expand on the success of this program to help reduce energy costs for residents in the long run, and add more sources of renewable energy to the electricity mix.

New West's Urban Solar Garden

The Garden consists of 156 solar panels that together have a generating capacity of 50 kilowatts an hour, or 54,000 kW per year!

The Urban Solar Garden is a big hit with the residents of the Royal City: 100% of the panels have now been "purchased". For more information on the project, go to www.energysavenewwest.ca.

Strategy 2.3: Support renewable energy generation across the city

To expand local renewable energy generation, the City will create a *Renewable Energy Strategy* that fosters the uptake of distributed renewable energy generation and moves the city towards net zero. It will also explore ways to discourage the use of high-carbon non-renewable energy sources in appliances for decorative or outdoor purposes (e.g., non-food preparation). This strategy will be included as a part of a renewed *Community Energy and Emissions Plan*.

Actions	Timeline	One-time expense	Ongoing expense
2.1a. Finalize the business case for the Sapperton Renewable District Energy system	LT	$60M in cost recovery	N/A
2.1b. Conduct district energy feasibility studies for key areas (e.g. Lower 12th, Downtown, and Uptown)	LT	$$$	N/A
2.2a. Expand the City's Urban Solar Garden program	ST	$-$$	N/A
2.3a. Renew the Community Energy Emissions Plan and include a Renewable City Strategy	ST	$$	N/A

Goal #3
Reduce the Release of Emissions from Transportation Systems

The transportation sector is another major source of greenhouse gases, accounting for 54% of the total emissions in New Westminster. As single occupancy vehicles (e.g., cars, light trucks, and vans) make up the largest share of these emissions, careful planning of transportation systems and infrastructure is a key approach to achieving emission reductions. The *City's Master Transportation Plan* (MTP) already presents a comprehensive strategy providing an extensive suite of actions to create a sustainable transportation system across New Westminster. However, other opportunities to encourage sustainable transportation also exist.

Strategy 3.1 Foster the transition toward low carbon mobility

Fostering a transition to low-carbon mobility will depend primarily on the successful implementation of the MTP, which outlines measures to reduce the overall demand for vehicle travel, shift remaining trips to low- or no-carbon options, encourage community members to use more sustainable modes of transportation, and raise awareness of transportation alternatives. To successfully implement the MTP, the City will also develop an *Electric Vehicle (EV) Strategy* to help support the transition to electric vehicles. The City will explore opportunities to support the shift toward electric vehicles in new developments, as well as through the addition of new infrastructure.



*The **Master Transportation Plan** has established the ambitious target of increasing the percentage of local transportation trips made by walking, cycling, and transit to 50% by 2031, and 60% by 2041. The strategies supporting these targets are focused on making the city more walkable, improving the comfort of cycling facilities, improving the convenience of taking transit, managing the upkeep of sidewalks, and ensuring services and amenities are within close walking distance of all neighbourhoods to support the liveability of neighbourhoods.*

Actions	Timeline	One-time expense	Ongoing expense
3.1a. Implement actions from the Master Transportation Plan (MTP) to reduce demand for vehicle travel and encourage sustainable travel modes	LT	$$$	N/A
3.1b. Create and implement a city-wide Electric Vehicle Strategy	ST	$	N/A
3.1c. Continue to expand parking regulations to encourage the use of sustainable transportation alternatives	MT	N/A	N/A



Goal #4
Foster Continuous Measurable Improvements in Energy Use and Emission Reductions

Identifying the best ways to reduce energy use begins by measuring and tracking energy consumption. This allows building managers, home owners, city operators, and others to identify where and when energy is being used, and to understand the impact of different actions, habits, and choices. The City is already tracking the energy consumed in its building and facilities as well as the emissions associated with this energy use. However, other opportunities to measure and improve energy and emissions performance are still yet to be harnessed.

Strategy 4.1: Encourage better management of energy consumption

Energy benchmarking is the process of measuring and tracking a building's energy performance over time in comparison to other, similar buildings. Supporting or requiring buildings to engage in energy benchmarking can allow a city to track changes in energy use and to identify specific buildings in need of energy upgrades. The City will partner with other local governments to support and explore the adoption of energy benchmarking across the region.

The Canada Green Building Council's Energy Benchmarking, Reporting, & Disclosure in Canada: A guide to a common framework, offers guidance and resources to Canadian jurisdictions interested in designing and implementing energy benchmarking programs.

Strategy 4.2: Increase awareness of energy consumption

Metering technologies such as "smart meters" help inform residents of how much energy they consume and when they consume it, while providing valuable information to cities and utilities on how to best support energy use reductions. The City will explore the use of smart electricity meters or the sub-metering of natural gas, as well as the potential of promoting home energy labelling programs, which is also helpful in understanding how a building performs.

Strategy 4.3: Increase awareness and understanding of air quality and greenhouse gas related issues

Air quality issues in New Westminster are largely associated with the combustion of fossil fuels. Along with greenhouse gas emissions, burning fossil fuels results in the release of particles into the air that are harmful to human health. Metro Vancouver currently regulates air quality issues across the region, and has adopted a 2011 *Integrated Air Quality and Greenhouse Gas Management Plan*. The City is committed to working with Metro Vancouver to support its existing air quality monitoring service and other future programs that educate the public on related air quality concerns.

Actions	Timeline	One-time expense	Ongoing expense
4.1a. Support local and regional energy benchmarking initiatives	MT	$	N/A
4.2a. Explore new metering technologies	ST	$	N/A
4.2b. Support home energy labeling initiatives	ST	N/A	N/A
4.3a Support Metro Vancouver in strengthening existing air quality monitoring and public education programs	ST	N/A	N/A

Goal #5
Prepare for and reduce impacts and risks related to climate change

While efforts to reduce greenhouse gas emissions are crucial, the emissions that have already been released into the atmosphere mean that we will experience some degree of climate warming. Climate projections for the Lower Mainland anticipate an increase in hot, dry periods in the summer, and even wetter conditions in the winter, which may result in more extreme weather events such as heat waves and floods. Measures are already in place to reduce the impacts of such events, such as *the City's Floodplain Management Strategy* and *the Integrated Stormwater Management Plan*. The City will build on these to create a new Climate Adaptation Strategy to ensure the city is prepared for climate change impacts.

Strategy 5.1: Identify climate change impacts and risks in New Westminster

In order to prepare for the impacts of climate change, it is important to first assess and understand the specific risks to the local community, and identify solutions that are suited to the needs and context of New Westminster. The City will create a *Climate Adaptation Strategy* to identify New Westminster's climate risks, take action to increase the resilience of the City's infrastructure, build the capacity of City staff to implement climate change adaptation measures and programs, and increase awareness of climate change impacts to residents and businesses.

Strategy 5.2: Reduce the flood risk and manage the impacts of flood events

One of the projected impacts of climate change for New Westminster is an increase in flood events due to a greater frequency of extreme storm events and increased variability in expected rainfall. To help mitigate the effect of storm events, the City will continue to regulate the Flood Construction Level (FCL) and support the Fraser Basin Council in its efforts to develop a *Regional Flood Management Strategy*, which will in turn help to inform an update of the City's *Floodplain Management Strategy*.

Strategy 5.3: Improve the ability of the built environment to adapt to climate change

A key step in preparing for climate change is to ensure that the built environment can withstand and bounce back from extreme weather events. As one step towards ensuring that New Westminster is ready for the projected changes in climate, the City will build on the updated *Regional Flood Management Strategy* to inform a revision and expansion of its existing Development Permit Area and other guidelines.

Actions	Timeline	One-time expense	Ongoing expense
5.1a. Develop a Climate Adaptation Strategy	MT	$$	N/A
5.2a. Support the development of a Regional Flood Management Strategy and continue to regulate the Flood Construction Level	OG	$	N/A
5.2b. Update and implement New Westminster's Floodplain Management Strategy	MT	$$$	N/A
5.3a. Update Development Permit Area guidelines to address risks in hazard prone areas	MT	$$	N/A
5.3b. Incorporate climate risks into neighbourhood-specific guidelines	MT	$	N/A

BUILDINGS, SITES & URBAN DESIGN

While the City of New Westminster is already a highly urbanized area, its population is growing – which will require the construction of new buildings, infrastructure, and services. This can have a significant impact on the environment. To begin, the construction of new buildings often requires the demolition of old ones, and the demolition of a typical residential building has been estimated to create up to 50 tonnes of waste. The construction of new buildings can also present a risk to nearby ecosystems by increasing harmful runoff into local streams and watercourses, impinging on remaining habitat areas, and disturbing wildlife. These processes have unintended negative impacts on human well-being, such as reduced access to green space and increased noise pollution.

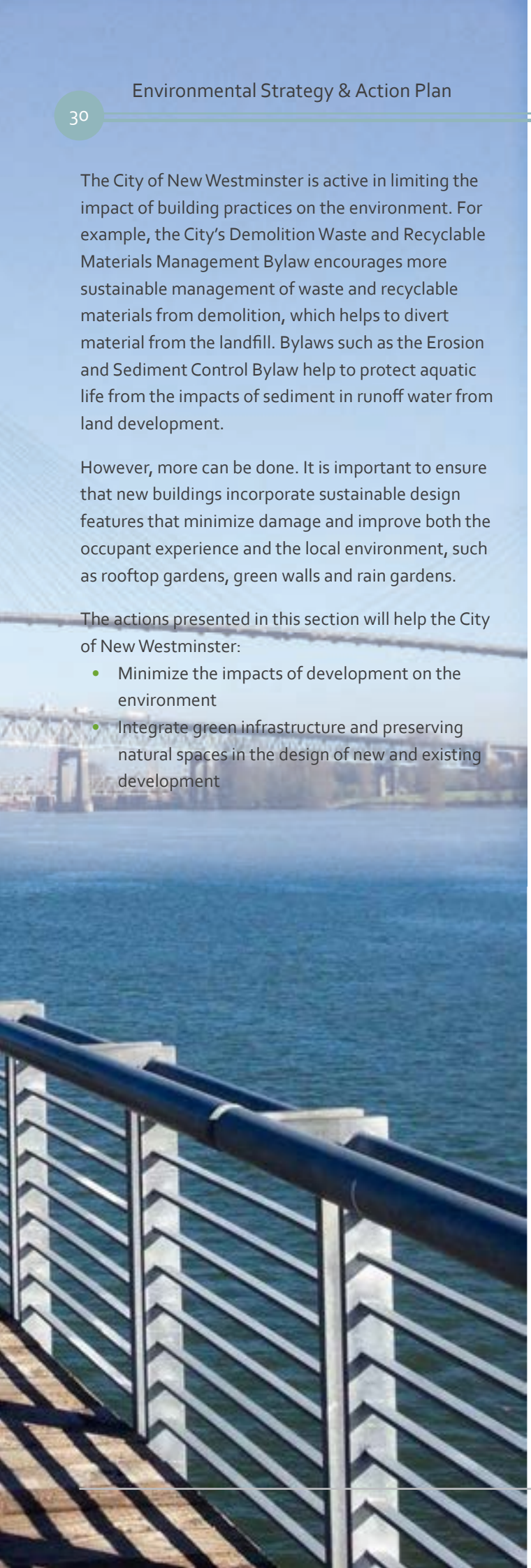


The City of New Westminster is active in limiting the impact of building practices on the environment. For example, the City's Demolition Waste and Recyclable Materials Management Bylaw encourages more sustainable management of waste and recyclable materials from demolition, which helps to divert material from the landfill. Bylaws such as the Erosion and Sediment Control Bylaw help to protect aquatic life from the impacts of sediment in runoff water from land development.

However, more can be done. It is important to ensure that new buildings incorporate sustainable design features that minimize damage and improve both the occupant experience and the local environment, such as rooftop gardens, green walls and rain gardens.

The actions presented in this section will help the City of New Westminster:

- Minimize the impacts of development on the environment
- Integrate green infrastructure and preserving natural spaces in the design of new and existing development



Goal #6
Minimize the impacts of development on the environment

The City of New Westminster has been active in exploring means to reduce the impact of new development on the environment, ranging from integrating sustainable features into newly developed sites to creating regulations for demolition practices (e.g., the Demolition Waste and Recyclable Materials Management Bylaw). The City will build on these existing programs and regulations, and explore ways to continuously increase the environmental sustainability requirements for new buildings and developments by revising the Sustainability Report Card, increasing compliance to existing bylaws, and reducing noise pollution.

Strategy 6.1: Reduce waste from the construction and demolition of buildings

While the City of New Westminster already requires demolition materials to be managed and recycled through the implementation of its bylaw, there are several instances in which large volumes of materials still end up in the landfill. To address this issue, the City will work with the development community and Metro Vancouver to identify the challenges and opportunities that will increase compliance with the existing regulation, and explore opportunities to increase waste diversion practices in new construction.

Strategy 6.2: Encourage the incorporation of environmentally sustainable building features in all new developments

The Sustainability Report Card provides an important means for the City to incorporate sustainable features into new construction. This includes measures to increase the efficient use of energy and water, improve human well-being, and reduce waste. The City will establish a Task Force to review the effectiveness of the existing Report Card and investigate better ways to incorporate and ensure environmentally sustainable building features are being adopted by the building community.

*The **Sustainability Report Card** is one of the City's key means of ensuring new buildings are constructed to higher sustainability standards. The Report Card issues scores to applications in the areas of waste disposal, stormwater management, habitat protection, energy efficiency, alternative energy, and transportation.*

Strategy 6.3: Foster good development practices

It is important that the development community demonstrates good environmental performance and prevents pollution from entering the city's drainage system. To this end, the City will investigate ways to continue to bring more builder awareness and adherence to environmental regulations such as the Erosion and Sediment Control Bylaw, the Sewerage and Drainage Regulation Bylaw, and the Tree Protection and Regulation Bylaw. The City will also identify appropriate methods to improve compliance to these bylaws by the building industry.

Strategy 6.4: Minimize noise pollution

'Noise pollution' refers to any excessive and/or unpleasant sound that is disruptive to human well-being.

Minimizing noise pollution has become an important issue to New Westminster, especially considering its major transportation thoroughfares and increasing number of compact developments. To reduce unwanted noise, the City will adopt a city-wide Noise Attenuation Strategy to mitigate noise in residential areas, particularly during the construction of new buildings. Specific sources of noise that will be explored include pile driving practices during construction, commercial site operations, and transportation-derived noise from train tracks and truck routes.

Actions	Timeline	One-time expense	Ongoing expense
6.1a. Work with the development community and Metro Vancouver to increase compliance with the City's Demolition Recycling regulation, and explore opportunities to reduce waste from construction	MT	N/A	N/A
6.2a. Initiate a Task Force to explore strategies to encourage or require environmentally sustainable features in new development	MT	N/A	N/A
6.2b. Implement strategies from 6.2.a. and ensure new developments and designs have sustainable features in place	LT	N/A	N/A
6.3a. Educate the development community on the City's environmental protocols and regulations	MT	$	N/A
6.3b. Increase enforcement and compliance to the City's environmental bylaws	MT	$	N/A
6.4a. Design and adopt a city-wide Noise Attenuation Strategy	MT	$$	N/A
6.4b. Ensure designs for new development incorporate measures to reduce impacts of noise	MT	N/A	N/A



Goal #7
Integrate green infrastructure and preserve natural spaces in the design of new and existing development

Naturescaping is a method of landscape design and maintenance that incorporates the use of native species to create outdoor spaces that are both ecologically sustainable and enjoyable. Naturescaping helps to reduce the need for irrigation, improve water quality, provide habitat for local species, and can even reduce landscape costs.

Green spaces bring with them several benefits. Forms of green infrastructure, such as rooftop gardens, have been shown to help insulate buildings, reducing the need for heating energy in the winter and cooling in the summer. By improving the permeability of the land, green infrastructure also helps mitigate the impact of storm and rainfall events, reduce incidences of sewer overflow, and moderate the flow of contaminants into the local waterway system. Importantly, green spaces promote biodiversity and habitat connectivity (e.g., native plant or pollinator species) while providing natural spaces for residents to enjoy. However, green space can be easily lost in the process of constructing new buildings where measures haven't been taken to protect or increase it. As such, the City will work to improve the inclusion of green spaces into the design of new development as part of the *Integrated Stormwater Management Plan* (ISMP) and *Urban Forest Management Strategy*.

Strategy 7.1: Foster the creation of more green space on private lands

A key step in the protection and expansion of green space in the city will be the development of a *Biodiversity and Natural Areas Strategy* (see Strategy 13.1). The aim of this strategy will be to identify opportunities to help protect existing natural areas and enhance the city's biodiversity, including measures to increase green space on both new developments and private lands. Information from this guiding document will be used to update the City's existing Development Permit Application Guidelines to ensure it supports the inclusion of features that enhance natural habitat and clearly demonstrate how they can be incorporated into new construction.

Strategy 7.2: Encourage natural drainage through low impact development

New buildings and developments present an opportunity to help reduce the impact of extreme rainfall and storm events where natural drainage is incorporated. For example, the construction of raingardens and the use of porous materials help to improve the permeability of the ground and reduce the chance of flooding. These and other stormwater management tools are discussed at length in the *Integrated Stormwater Management Plan*, and will be implemented as part of the design process. Integrating the use of these features into the design guidelines of the City's Subdivision Development Control Bylaw will also encourage builders to incorporate natural drainage features into new developments.

Strategy 7.3: Increase the use of green infrastructure on City property

Visible demonstrations of green infrastructure help to foster citizen awareness and to encourage the accelerated uptake of design practices. The City will continue its efforts to increase the use of green infrastructure on City property by implementing the strategies laid out in the *Integrated Stormwater Management Plan*. This includes the creation of a "Green Amenity Street" showcasing how green infrastructure can improve water management, habitat, landscape aesthetics and resident well-being.

*The **ISMP** establishes targets to capture and keep the first 25-50mm of each rainfall event on-site, representing approximately 70% of the annual rainfall. 20% of the annual rainfall (representing heavy rainfall) should be treated before entering the downstream drainage system, while the remaining 10% (representing large extreme events) would be routed to sewerage systems.*

Actions	Timeline	One-time expense	Ongoing expense
7.1a. Develop a Biodiversity and Natural Areas Strategy	See Action 13.1a		
7.1b. Update the City's Development Permit Area Guidelines to guide developers on habitat protection practices	MT	$	N/A
7.2a. Incorporate Integrated Stormwater Management Plan practices into new development	MT	N/A	$
7.3a. Implement Integrated Stormwater Management Plan practices on City lands (Also see Action 10.1) **Ongoing expense assumes cost of green infrastructure*	MT	N/A	$$$*
7.3b. Redevelop a residential street as a "Green Amenity Street" to showcase green infrastructure	MT	$$$	$



WATER, WASTE, & MATERIALS

The achievement of an environmentally sustainable community involves efforts to conserve, protect and reuse our resources, as well as efforts to minimize the waste we generate in our use of water, materials, and food. In New Westminster, realizing this goal requires the involvement of several partners, including other jurisdictions and support across the community.

In the Lower Mainland, Metro Vancouver is the primary jurisdiction responsible for the management and regulation of waste in New Westminster and its surrounding communities. There are a number of existing targets, programs, and policies identified in Metro Vancouver's *Integrated Solid Waste and Resource Management Plan* (ISWRMP). The City of New Westminster has been active in undertaking and supporting many of the initiatives in the ISWRMP and is dedicated to finding more ways to meet these goals.

With respect to water, the City of New Westminster has demonstrated its commitment to protecting and enhancing water quality and increasing water conservation via a number of key programs and policies (e.g., the *Water Shortage Response Bylaw and the Integrated Stormwater Management Plan*).

*Metro Vancouver's **ISWRMP** sets the regional target of waste diversion at 80% of municipal solid waste diverted from landfill disposal by 2020, and has a suite of programs and actions in place to help municipalities across the region achieve this target. Single family homes in New West are already diverting 70% of their waste from the landfill!*

These and other actions form the basis for New Westminster's efforts to reduce its environmental impact.

The actions presented in this section will help the City of New Westminster:

- Minimize waste generation and maximize waste diversion from the landfill
- Maximize the conservation and protection of drinking water
- Minimize the impact of waste and storm water on the receiving environment
- Improve the sustainability of the local food system



Goal #8

Minimize waste generation and maximize waste diversion from the landfill

While recycling has become a common part of daily practice, its success is largely dependent on our understanding of what can be recycled, and our ongoing commitment to doing it. Metro Vancouver's *Integrated Solid Waste and Resource Management Plan* sets waste diversion targets, identifies strategies for waste diversion, and outlines programs to educate residents and businesses on best practices in waste reduction. While the City is already working with Metro Vancouver on implementing various programs and regulations, there are other actions that can help reduce waste generation. The City will explore methods of encouraging citizens to properly sort and dispose of waste, and minimize the generation of waste at the onset (e.g., rethink, reduce, reuse).

Strategy 8.1: Build personal commitment to recycling among residents and schools

Providing targeted education can help reinforce the importance of carefully sorting waste. This is why the City will work with Metro Vancouver to develop an educational program tailored to different audiences, especially multi-family residents and schools and in multiple languages (where appropriate), to encourage the 5 "Rs": Rethink, Re-purpose, Reduce, Reuse, Recycle.

Strategy 8.2: Keep recyclables out of the waste stream

Properly preventing recyclables from going into the landfill requires more than just sorting – it also requires a deeper effort to ensure that recyclable materials placed in bins or larger loads are not "contaminated". Approaches to enforcement can range from refusing to collect contaminated loads to issuing warnings or fines to individual households or businesses. The City will explore these and other best practices in the creation of an enforcement program for the Solid Waste and Recycling Bylaw that identifies current behaviours or issues related to proper waste sorting, as well as the best approach to addressing them.

Strategy 8.3: Discourage the dumping of waste

While intentionally discarding unwanted materials and waste on public or private lands is prohibited by the City, waste dumping still occurs. To reduce the practice of illegal dumping, the City will take steps to bring greater awareness of the impacts of illegal dumping on environmental and human health, continue to support community clean up events, and work to educate residents on appropriate practices.



Strategy 8.4: Support businesses in waste reduction strategies

Businesses play a key role in reducing waste, but also face unique challenges such as lack of storage space, staff training, or management support. To help this sector, the City will work with Metro Vancouver to identify businesses' needs and barriers in order to create tools to help achieve better waste diversion. The City will also explore the potential for the creation of an "eco-industrial network" as a means of identifying collaborations between enterprises to reduce waste. The City will also advocate to the Province and stewardship agencies to expand on recyclable materials to be included existing stewardship programs (e.g., extended producer responsibility programs).

***Recycle BC** is a non-profit organization responsible for residential packaging and paper products recycling in BC. It is dedicated to providing awareness and education on recycling best practices.*

Strategy 8.5: Reduce the use of single-use items

Single-use items such as coffee cups, plastic bags, straws and take-out containers make up a significant proportion of waste in the landfill and represent some of the most visible items to target. Several cities are already exploring the feasibility of reducing or even banning the use of these items, either through added point of sale "enviro fees" or through sterner forms of regulation. While such actions can be effective in reducing the use of these items, they must be implemented carefully and consistently. The City will work with regional partners to develop a strategy to reduce the use of disposable single-use products.

Strategy 8.6: Improve waste sorting and recycling practices among New Westminster residents

Waste diversion rates in single family homes have improved significantly over the last several years across the city, thanks in large part to the implementation of new programs and continued education. However, there are still opportunities to improve waste sorting and waste diversion, especially in the multi-family sector. The City will ensure adequate space is provided for recycling infrastructure in new developments. It will also explore enhancements to its current service (e.g., providing new recycling streams) that will increase recycling rates, reduce contamination and divert waste from landfill.

Strategy 8.7: Launch a corporate campaign to maximize waste diversion in the public realm, City facilities and events

City facilities, buildings and public spaces should demonstrate best practices in waste reduction and build recycling consistency throughout the community. A key aspect of this leadership is the need to ensure adequate recycling infrastructure (e.g., bin stations) is in place, along with good signage to encourage participation. The City will provide training and education to staff on the proper operation of recycling infrastructure and best practices for reducing contamination. City staff will also work with

Recycle BC to improve public recycling practices and waste diversion in the city's streetscape.

Strategy 8.8: Increase sustainable reuse of biosolids

Biosolids are organic materials that contain nutrients and are separated out of wastewater during treatment. They can be processed into an excellent fertilizer for landscaping soils (e.g., City parks). The use of biosolids in this way essentially "closes the loop" on waste, as it makes use of a valuable resource to support the growth of plants that would have otherwise been lost. The City will continue to explore opportunities to use biosolids on civic lands and in areas of low or no risk to public health.

Actions	Timeline	One-time expense	Ongoing expense
8.1a. Partner with Metro Vancouver to develop and implement a targeted waste reduction program tailored to New Westminster	OG	N/A	N/A
8.2a. Develop an enforcement program to enhance the regulation of the City's Solid Waste and Recycling Bylaw	MT	$$	N/A
8.3a. Provide support for community cleanup events to grow awareness of illegal dumping	OG	N/A	N/A
8.3b. Work with Metro Vancouver to prevent illegal dumping of drywall and hazardous waste	OG	N/A	N/A
8.4a. Work with Metro Vancouver to develop waste management outreach strategies for New Westminster businesses	MT	N/A	N/A
8.4b. Explore the feasibility of an eco-industrial network for New Westminster	OG	$	N/A
8.4c. Lobby the Province and relevant stewardship agencies to introduce or expand materials stewardship programs	OG	N/A	N/A
8.5a. Work with regional partners to develop a strategy to minimize the use of single-use products	ST	N/A	N/A
8.6a. Develop and implement an enhanced solid waste and recycling services program	OG	$	N/A
8.6b. Develop a residential waste strategy for the multi-family sector	MT	N/A	N/A
8.6c. Ensure adequate space for recycling infrastructure is included in new developments	OG	N/A	N/A
8.7a. Launch a corporate campaign to maximize waste diversion in the public realm, City facilities and events	MT	$	N/A
8.8a. Explore opportunities to use recycled biosolids in local landscaping	OG	N/A	N/A

Goal #9
Maximize the conservation and protection of drinking water

While the region receives a substantial volume of precipitation every year, there is still an urgent need to conserve potable drinking water, especially in the summer months. Water conservation efforts will be increasingly important in the face of a warming climate. Water conservation also helps to conserve financial resources by reducing or deferring the need to expand water infrastructure as the population grows. Metro Vancouver is responsible for the development of water conservation targets, strategies and educational campaigns. The City actively supports Metro Vancouver through the implementation of several of its own programs (e.g., *Drinking Water Conservation Plan*), and will expand on existing efforts to ensure that there is plenty of water available for years to come.

Strategy 9.1: Improve residential water efficiency

A 2017 report to City Council on the assessment of *Water Conservation Measures and Residential Metering* identified an objective to increase water conservation efforts through incentives (e.g., low flow toilets, rain barrels), and to explore educational and/or outreach programs to foster improvements in water conservation behaviours. The City will work to implement these measures, and will begin to measure water consumption on a sample group of single family homes via the use of water meters to better understand water use by this sector.

Strategy 9.2: Reduce water use in City facilities and parks

The City has a responsibility to demonstrate leadership in reducing water consumption and increasing the water efficiency of public facilities. To this end, the City will conduct phased audits of its civic facilities and irrigated properties to identify system losses and opportunities for water use improvements. Opportunities will also be explored to reduce water consumption at smaller sites or in unique circumstances, such as fire training, spray parks, street sweepers, and water main flushing.



Strategy 9.3: Improve on-site water reuse in new multi-family or ICI developments

A significant opportunity to reduce potable water consumption is the use of reclaimed water for irrigation, toilet flushing, and other purposes that don't require treated water. Such systems are often referred to as "purple pipe" systems, since purple pipes are used to distinguish recycled water from potable water carried in blue pipes. As the City does not have the legislative ability to require purple pipe-ready infrastructure directly, it will advocate for its inclusion into the provincial plumbing code, and explore incentives for its inclusion into new multi-family and ICI (i.e., institutional, commercial and industrial) developments.

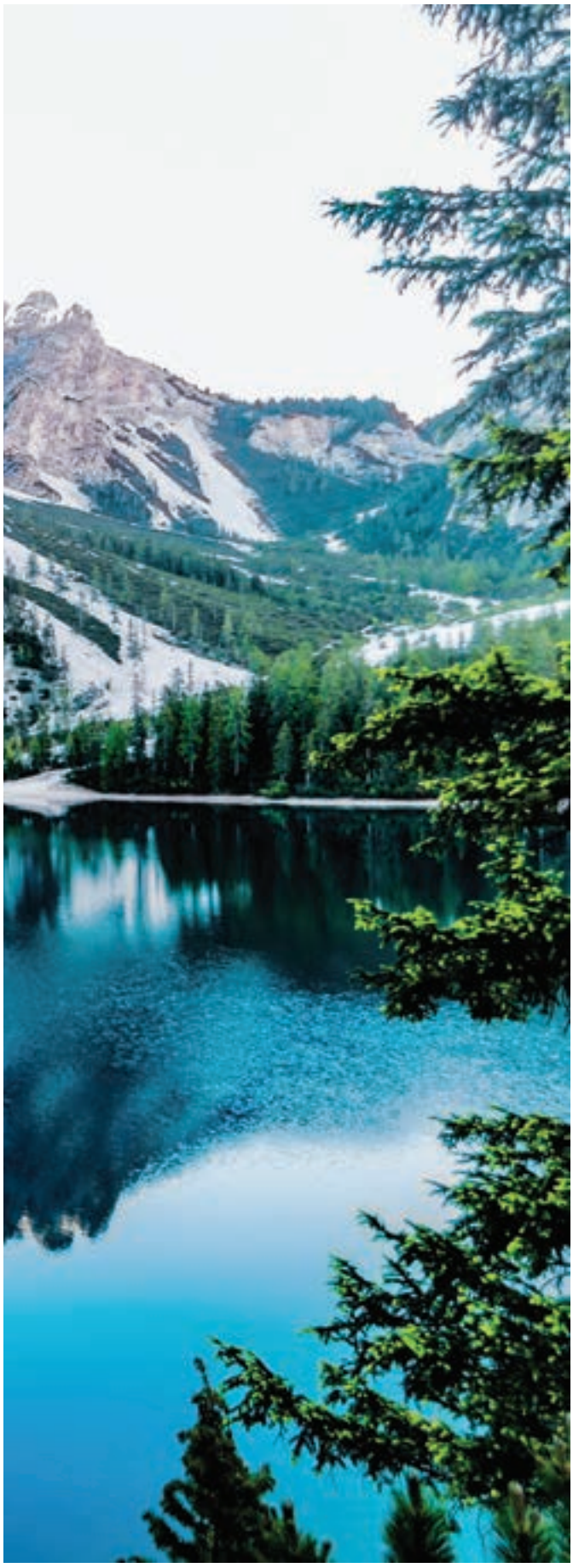
Strategy 9.4: Improve landscaping and irrigation water efficiency

Irrigation and landscape maintenance often require significant water use, especially in the dry summer months. However, the use of drought-tolerant landscaping materials can yield significant water use reductions long into dry seasons. The City will continue its efforts to encourage rainwater collection and integrate drought-tolerant landscaping by exploring new water wise guidelines, converting turfed areas to all-weather surfaces, and enforcing the use of drought-tolerant species in new developments.

Strategy 9.5: Improve water efficiency in business

Depending on the size and type of its operations, businesses can consume high volumes of potable water. The City will partner with Metro Vancouver to help support businesses to save both energy and water by providing education, encouraging the installation of low-flow fixtures, promoting water reuse through closed systems and explore delivering this program through the integration with existing programs (i.e., Energy Save New West).

Actions	Timeline	One-time expense	Ongoing expense
9.1a. Implement measures outlined in the 2017 Assessment of Water Conservation Measures Council Report	OG	$	N/A
9.1b. Explore the use of water monitoring, pricing and enforcement	OG	$$	N/A
9.2a. Conduct an irrigation audit to identify measures to reduce water consumption and leakage	OG	N/A	$
9.2b. Conduct audits of City facilities and other operations to identify and implement water conservation measures	MT	$$$	N/A
9.3a. Lobby the Province to allow indoor water reuse infrastructure under the Provincial plumbing code	LT	$	N/A
9.4a. Continue to encourage the use of drought-tolerant landscaping practices	OG	N/A	N/A
9.5a. Partner with Metro Vancouver and relevant utilities to improve water conservation in businesses	MT	$	N/A



Goal #10
Minimize the impact of waste and stormwater on the receiving environment

Wastewater and stormwater both contain pollutants that can have serious impacts on the aquatic systems surrounding the city. Stormwater carries with it pollutants and runoff from roads, construction sites, fertilized landscapes and organic waste, and should be treated before it enters the receiving water system. The City is committed to reducing the volume and improving the quality of stormwater runoff of the collection system, and to the region's *Integrated Liquid Waste and Resource Management Plan*, which outlines standards for the treatment and management of wastewater.

Strategy 10.1: Return stormwater to natural pathways

A key principle of sustainable stormwater management is the need to improve the permeability of the ground to reduce flooding and return water to its natural pathways. This can be achieved through the implementation of a system of green infrastructure, or the incorporation of absorbent landscapes (e.g., green roofs, raingardens) and pervious paving material into the urban fabric. These help to reduce the volume of runoff over the surface of the ground and improve the quality of the runoff entering the downstream environment (e.g., rivers) by filtering stormwater through soil and other organic material. The primary means for the City to realize these strategies is the implementation of the City's *Integrated Stormwater Management Plan.*



Strategy 10.2: Reduce the release of hazardous and other contaminated materials in wastewater, stormwater and watercourses

Solid products and grease in wastewater can clog pipes and sewers, which are costly to remove and can lead to overflows. Medications and other chemical pollutants can enter the waterway through combined sewer overflows. Metro Vancouver has been active in providing educational campaigns across the region to raise awareness on the impacts of hazardous materials in waterways and to reduce the release of "unflushables" into waterways. The City will also develop new regulations and a process to better monitor and enforce the City's environmental protection bylaws and reduce pollution that enters the receiving environment.

Strategy 10.3: Reduce Combined Sewer Overflows (CSO)

When the City first developed the sanitary system, it was designed to use sewers that combined sanitary sewage and stormwater drainage. Combined sewer overflows (CSO) occur when the volume of rainfall mixing with sewage overwhelms the capacity of the pipe, resulting in overflow spilling into receiving waters. In 2005, the City partnered with Metro Vancouver to create a CSO tank designed to receive combined sewer overflows from the west end side of the City. Under the regional *Integrated Liquid Waste and Resource Management Plan*, the City is currently separating the sewer systems into sanitary sewers and storm sewers at a rate of 1.5% of the total sewer length annually, and expects to complete the task by 2075. In the meantime, the City will continue to assess the performance of the sewer system and reduce the volume of rainfall entering combined sewers by implementing the strategies outlined in the ISMP.

Actions	Timeline	One-time expense	Ongoing expense
10.1a. Implement the Integrated Stormwater Management Plan (ISMP)	OG	$$$+	N/A
10.2a. Develop a process to better monitor and enforce the City's environmental protection bylaws to reduce pollution	ST	N/A	N/A
10.3a. Assess the long-term performance of sewer system using flow monitoring	OG	N/A	N/A
10.3b. Continue to separate 1.5% of the total length of combined sewers annually, as required by the regional Integrated Liquid Waste and Resource Management Plan	OG	N/A	N/A
10.3c. Implement measures in the Integrated Stormwater Management Plan to reduce the volume of runoff and improve its quality before entering the downstream system	OG	N/A	N/A

Goal #11
Improve the sustainability of the local food system

The source and type of the food we eat can have a significant impact on the health of both the local and global ecosystems, as well as our own physical health. In the context of increasingly uncertain climatic, environmental and economic futures, our global food systems now face new pressures that risk disrupting the supply of food products from around the world and placing local food security in question. The current global agricultural system also comes with significant social and environmental impacts: the use of pesticides and fertilizers, the waste of food, issues of inequity and the safety of agricultural workers.

The City will work to improve the environmental sustainability of the food system by encouraging the consumption of local and more sustainably produced food. Drawing on the work from the 2014 *New Westminster Food Charter* and the Metro Vancouver's *Food System Action Plan*, the City will examine this topic further by developing a *Comprehensive Food Strategy*, as well as a corporate policy, to encourage more environmentally sustainable food choices at its facilities and events.

City of New Westminster's ***Beekeeping Bylaw No. 6648, 2000*** *defines the conditions under which bees may be kept in within the City's limits.*

Strategy 11.1: Encourage the consumption of local and sustainable food

To encourage the consumption of local and sustainable food, the City will develop a *Comprehensive Food Strategy* for New Westminster. The strategy will be developed in partnership with key stakeholders from across the city and the region, including the New Westminster Food Action Committee. The Strategy will seek to define what a sustainable food system looks like for New Westminster, and address the need for education on local production, food sovereignty and the expansion of community gardens. It will also identify opportunities for the City to advocate to and work with other municipalities to ensure the region's valuable Agricultural Land Reserve is protected.

City of New Westminster is already home to a number of community gardens that were created through a partnership between the Parks and Recreation Department and community associations. These gardens provide spaces for residents to grow their own produce and spend time with other members of their community.

Strategy 11.2 Create a corporate sustainable food procurement policy

The City owns several facilities in which food is served, and hosts many public and stakeholder events throughout the year. These present excellent opportunities to showcase leadership in local and sustainable food options. To assist in spreading awareness of sustainable food choices and reducing the municipality's own impact, the City will develop an internal corporate food policy.

Actions	Timeline	One-time expense	Ongoing expense
11.1a. Adopt a Comprehensive Food Strategy for New Westminster	MT	$$	N/A
11.2a. Develop a Corporate Food Strategy to guide food procurement for City events, buildings and facilities	ST	$	N/A

NATURAL AREAS & HABITAT

The urban fabric of New Westminster is interspersed with natural areas along its river corridors, the Glenbrook Ravine and its large community parks. These areas provide a host of benefits for both human and ecosystem health, by cleaning the air and water, reducing the risk of flooding, minimizing the urban heat island effect, and providing important hubs to support biodiversity. Research on the effect of urban nature on public health has also shown that green spaces make us happier and healthier.



While the city's natural spaces are well loved, they are continuously threatened by urban densification. Development to accommodate growth continually competes for space with existing natural areas. This has resulted in significant impacts to the city's ecosystems, and the urban forest canopy coverage has been declining at a rate of 1.5% every year over the past decade[3]. As changes in climate threatens the viability of some of the area's indigenous species, it is of vital importance to prevent the loss of biodiversity and penetration of invasive species.

The City has made several efforts to enhance New Westminster's natural spaces by protecting existing areas and continuously integrating green spaces into the urban environment. These actions draw on existing plans and policies that speak to protecting and enhancing ecosystem integrity and connectivity, including the *Urban Forest Management Strategy* (2016), the *Ecological Inventory of Queensborough* (2010), and the *Ecological Inventory of New Westminster* (2015).

The actions presented in this section will help the City of New Westminster:

- Protect and enhance river corridors and water courses
- Protect and restore the ecological integrity, biodiversity, and connectivity of natural areas



3 *City of New Westminster Urban Forest Management Strategy 2016*

Goal #12
Protect and enhance river corridors and watercourses

Riparian areas are the adjacent vegetated areas to water bodies such as rivers, streams and wetlands, bridging water and land. They are key environments in the provision and maintenance of fish habitat, and as such are protected under the provincial Riparian Areas Regulation (RAR). The RAR requires local governments to protect riparian areas by requiring adequate protection zones around watercourses, or "setbacks". Setbacks can be pre-determined, but sometimes require a qualified environmental professional to conduct a science-based assessment to determine an adequate protected zone for a new development. The ultimate aim of the RAR is to protect the health and productivity of natural water systems. The City currently implements the RAR through its Riparian Areas Protection Bylaw as well as a Watercourse Classification Map for Queensborough.

Strategy 12.1: Protect water quality and enhance instream and riparian habitat

The City will take two key actions to protect and improve the health of New Westminster's riparian areas. First, it will design and implement a *Watercourse and Riparian Areas Protection Plan* for the four major watersheds across the city: the Brunette River, the Fraser River, the Queensborough area, and the Glenbrook Ravine. Each of these areas is unique in terms of its form, the habitats created, and the benefits offered to New Westminster residents. Specific measures will be required for their protection. Second, the City will review the Riparian Areas Regulation to streamline the application of the regulation and update the City's Riparian Areas Protection Bylaw. This may include exploring options for improved enforcement, updating any City policies or processes, and providing education for City staff.

Actions	Timeline	One-time expense	Ongoing expense
12.1a. Design and implement a Watercourse and Riparian Areas Protection Plan to protect and enhance New Westminster's watercourses and riparian areas	MT	$$	N/A
12.1b. Review the Riparian Areas Regulation (RAR) process for opportunities to apply the regulation more effectively	ST	$	N/A



Goal #13
Protect and restore the ecological integrity, biodiversity, and connectivity of natural areas



Natural areas are significant functional components of the city's ecological network. They serve to protect wildlife habitat and strengthen the integrity and resilience of green spaces as a whole. Connecting natural areas can help wildlife look for food, find a suitable mate, and rest; larger areas increase their chance of survival and reproduction. While cities and their infrastructure can have negative impacts on wildlife, they also play a part in protecting local populations. The *Official Community Plan* outlines requirements to develop strategies to enhance wildlife habitat and the ecological integrity of the city's large treed parks and Glenbrook Ravine.

Strategy 13.1: Increase the diversity of wildlife and vegetation species that live within the city

In order to protect and enhance natural areas, connectivity, and diversity of green spaces, the City will develop a comprehensive *Biodiversity and Natural Areas Strategy* that will outline measures to enhance both natural areas and green spaces in the urban matrix at large. Steps needed to develop the strategy include mapping the city's existing habitat and species diversity, exploring a "no net habitat loss" policy, and recommending ways to protect species at risk, pollinators, and other important species. To help implement the *Biodiversity and Natural Areas Strategy*, the City will update its set of design guidelines to ensure naturalization is included as part of new or redeveloped sites, both private and public.

Strategy 13.2: Increase the size and health of the city's urban forest cover

The City's existing *Urban Forest Management Strategy* (UFMS) contains an extensive suite of actions to protect, restore, and enhance its urban tree canopy. In order to actualize the UFMS, the City will create a detailed implementation plan and timeline with an aim to achieve optimal performance across all indicators. The City will also develop a checklist of recommended tree species, drawing on Metro Vancouver's *Forest Climate Adaptation Framework and Design Guidebook*, to ensure that species selected take a warming climate into consideration- ensuring the future health and longevity of the city's trees.

Strategy 13.3: Increase the area of natural habitat

As the City continues to grow, it will be important to take measures to ensure existing natural areas are preserved. The City will explore the creation of a land acquisition strategy, informed by the *Biodiversity and Natural Areas Strategy*, to identify opportunities to acquire key habitat areas as part of redevelopment. Tools such as green levies, land swaps or the establishment of a dedication program will be explored.

Strategy 13.4: Minimize light pollution adjacent to natural areas

Light pollution has been found to disrupt sleep patterns and other natural rhythms in both humans and in wildlife. Nighttime lighting can pose a threat to nocturnal animals by disrupting their activities, altering predator-prey relationships and confusing migratory animals. Light pollution has been shown to be harmful to plant health by affecting regular growth cycles. To address these impacts, the City will develop a "dark sky" light pollution reduction strategy to reduce unnecessary nighttime lighting over the short and long term.

Strategy 13.5: Minimize, reduce, and eliminate invasive species

Invasive species are non-native species that have been introduced and have spread into new areas, often as a result of human activities. Invasive species can cause significant ecological damage, out-compete native species and reduce ecosystem complexity and stability. The City has been active in managing key invasive species on public land, but will identify additional actions for managing invasive species community-wide, as a part of an integrated management plan.

Actions	Timeline	One-time expense	Ongoing expense
13.1a. Develop and implement a Biodiversity and Natural Areas Strategy to improve the size, quality, connectivity and diversity of natural areas	MT	$$	N/A
13.1b. Update the City's design guidelines to encourage new developments to contribute green space and diversity into the urban fabric	LT	$$	N/A
13.1c. Develop a set of internal design guidelines to ensure measures are taken to protect and enhance natural areas in City-owned projects	ST	$	N/A
13.2a. Develop a work plan for the implementation of the Urban Forest Management Strategy, including a recommended list of tree species, to ensure forest health and longevity	OG	N/A	N/A
13.3a. Explore the development of a land acquisition strategy to identify opportunities to acquire key habitat areas during re-development ** Assumes land acquisition costs*	LT	$$$*	N/A
13.3b. Implement actions in the Queens Park Master Plan designed to increase naturalized areas	OG	N/A	$$$
13.4a. Design and implement a "Dark Sky" policy to reduce nighttime light pollution	LT	N/A	N/A
13.4b. Develop an interim strategy to reduce unnecessary nighttime lighting	ST	$	N/A
13.5a. Develop a city-wide Invasive Species Management Plan	OG	$	N/A

Goal #14
Integrate environmental considerations into City activities and practices

With continued land use pressure and development comes the need to ensure the environment is protected from both internal and external pressures. Parks, green space and tree canopy provide valuable services such as rainwater management, flood mitigation or reducing air pollution. Historically, however, they have gone unaccounted in municipal asset management plans. The City will work to give full consideration of the value of natural assets when integrating and replacing infrastructure or other assets. The City will also integrate environmental considerations when evaluating new projects, and quantify any benefits that are received or lost. City staff will work to account for any environmental risks and impacts prior to the implementation of a new plan or the development of a new facility, and identify ways that environmental performance can actually be improved.

Strategy 14.1. Recognize the value of New Westminster's natural capital

The first step in the protection of the city's natural assets or natural capital is taking stock of what the City owns. The City will establish a natural assets inventory that catalogues the full extent of the benefits and services rendered by the city's natural areas. This database will help bring the value of natural capital into decision making, particularly when evaluating trade-offs between options.

Strategy 14.2. Conduct an environmental evaluation of City projects

To mitigate environmental impacts from large internal projects (e.g., City facility projects), all potential environmental impacts and opportunities need to be considered and captured in decision-making processes. Staff will hold integrated design processes in the early stages of all large projects, bringing together multiple departments to identify any relevant concerns or opportunities. Where appropriate, staff will ensure that a full "lifecycle analysis" is used to identify means of improving the environmental performance of City services and operations on a day-to-day basis. The adoption of a sustainable procurement policy for City business will also be considered. Finally, the City will continue to participate in the evaluation of external proposals (e.g., energy infrastructure projects, regional transportation routes) to ensure the environment is considered prior to major decisions (e.g. as part of an environmental assessment review).

Actions	Timeline	One-time expense	Ongoing expense
14.1a. Establish a city-wide natural assets inventory	MT	$	N/A
14.2a. Ensure all major City projects incorporate an integrated design process or full lifecycle analysis	OG	N/A	N/A
14.2b. Adopt a corporate sustainable procurement policy	OG	N/A	N/A
14.2c. Conduct an environmental evaluation of all major external project proposals	OG	N/A	N/A



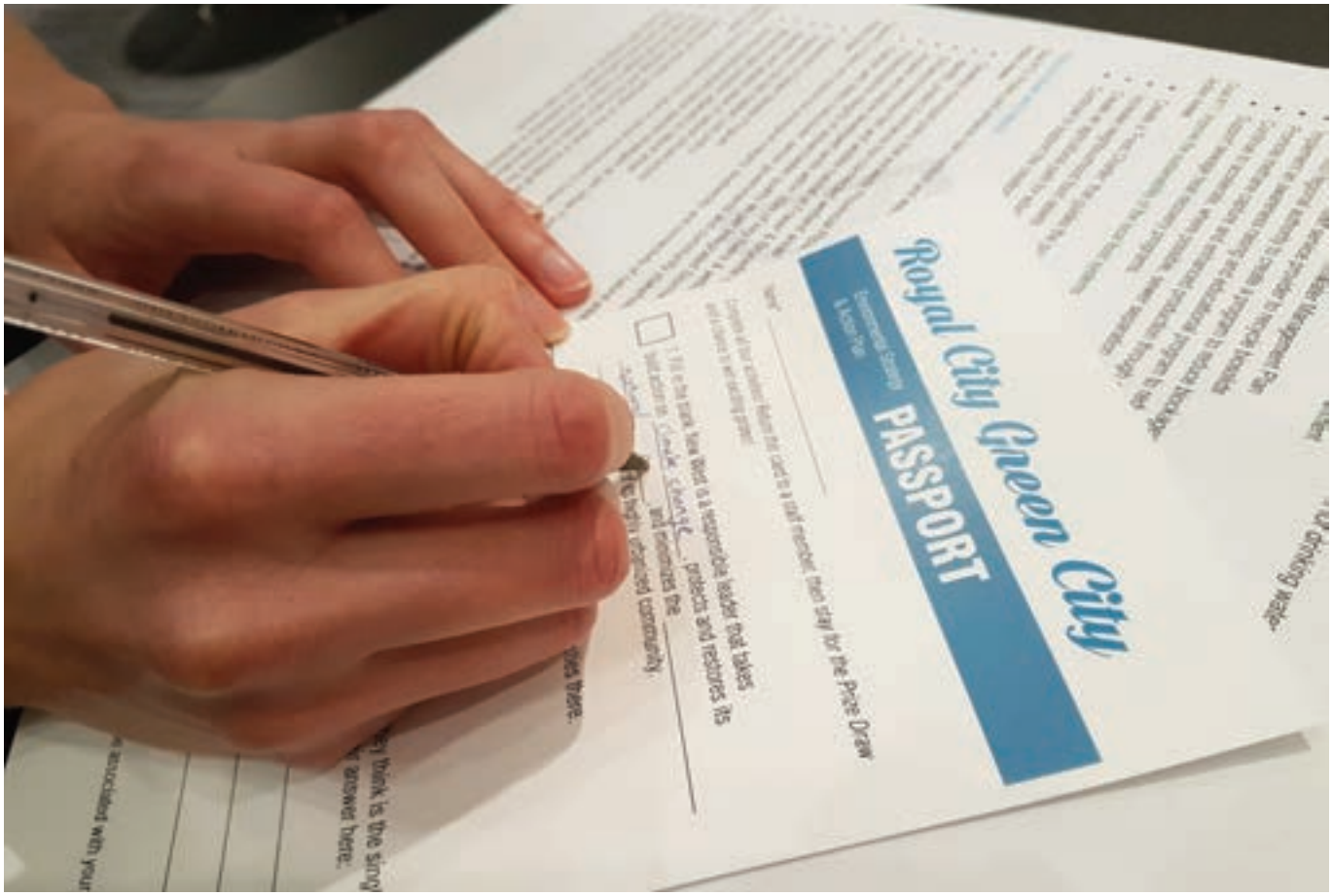
IMPLEMENTING THE PLAN

A comprehensive and robust work plan has been developed for achieving the environmental strategies outlined in the Environmental Strategy and Action Plan. The elements below outline the necessary processes to ensure the successful implementation of the plan.

Building City Capacity

Interdepartmental collaboration and collective thought were essential in developing realistic corporate and city-wide actions and strategies to include in this plan. As the City implements the plan over time, it will continue to foster this collaboration among departments, identify new opportunities for action, and monitor and celebrate the City's achievements. The City will strive to work in partnership with regional and local governments, community groups, and businesses to share our knowledge and experiences, and make efficient use of our resources.

As the number of staff dedicated to leading and implementing environmental actions is currently limited, the City will explore the creation of a new central body to coordinate and oversee efforts across departments. It will also explore the need for two new staff roles in the areas of Environmental Enforcement and Protection and Management. These and other capacity needs will be reviewed and reassessed on an annual basis during the City's budgeting process to ensure the City maintains its capacity to implement the plan.



Demonstrating Leadership

The success of the Environmental Strategy and Action Plan rests on the participation of all members of the community, including the City. While the City plays an important role in creating the right policies, incentives and educational resources to help the community achieve the environmental goals as outlined in this plan, it also has a responsibility to show the way forward.

The City of New Westminster has already demonstrated leadership in establishing a number of targets and actions to reduce the environmental impact of its buildings, facilities, and operations. This includes taking action to reduce the energy use and emissions from corporate operations. For example, the adoption of a LEED Gold policy for new civic buildings in 2009 was an action that was part of its 10-year corporate energy plan (2008).

In the spirit of demonstrating leadership, several of the actions listed in the Environmental Strategy and Action Plan are focused on directly reducing the City's corporate environmental footprint. They include:

- Action 1.3a. Update and implement a 10-year *Corporate Energy & Emissions Reduction Strategy* (CEERS);
- Action 7.3b. Redevelop a residential street as a "Green Amenity Street," to showcase green infrastructure;
- Action 8.7a. Launch a corporate campaign to maximize waste diversion in the public realm, City facilities and events;
- Action 9.2a. Conduct an irrigation audit to identify measures to reduce water consumption and leakage;
- Action 9.2b Conduct audits of city facilities and other operations to identify and implement water conservation measures;
- Action 11.2a. Develop a *Corporate Food Strategy* to guide food procurement for City events, buildings and facilities;
- Action 14.1a. Ensure all major City projects incorporate an integrated design process or full lifecycle analysis;
- Action 14.1b. Adopt a corporate sustainable procurement policy.

Advocating for Change

Showing leadership comes in many forms, not least of all as advocacy. New Westminster's environment doesn't end at its administrative boundaries; however, the effects of its internal policies and programs have limited reach outside the city's limits. Furthermore, the health, integrity, and productivity of the air, water, and land are all affected by human activities that span the region and beyond – many of which are outside the City's control.

This is why the City must play an important role in protecting the environment both in and outside of New Westminster. This includes advocating for environmental policies and programs to higher levels of government that will affect New Westminster's own ability to engage in environmental protection. New Westminster will also advocate to and work with other local governments across the region to protect our natural environment. Areas in which this advocacy will be particularly important include efforts to reduce greenhouse gas emissions, to protect the quality of the watershed, and to preserve agricultural land.

> ***"This plan is a call for everybody to come together to do their best for the environment … for the future of the city and the planet."***



Councillor Jaimie McEvoy,
Environment Advisory Committee Chair

Fostering Environmentally Sustainable Practices

Several sections of this Environmental Strategy and Action Plan demonstrate the need to enforce existing policies, create new strategies, and find new ways of requiring, incentivizing, or building capacity for environmentally sustainable actions in New Westminster. However, an effective plan also needs to build awareness and provide education to help foster environmentally sustainable practices. Education and capacity building will be provided to both internal City staff as well as members of the community at large, including residents, businesses, schools and other institutions. As education is an evolving and continuous process, a centralized department at the City will be identified to coordinate both in-house and community-wide outreach. Three key strategies for providing education have been outlined below:



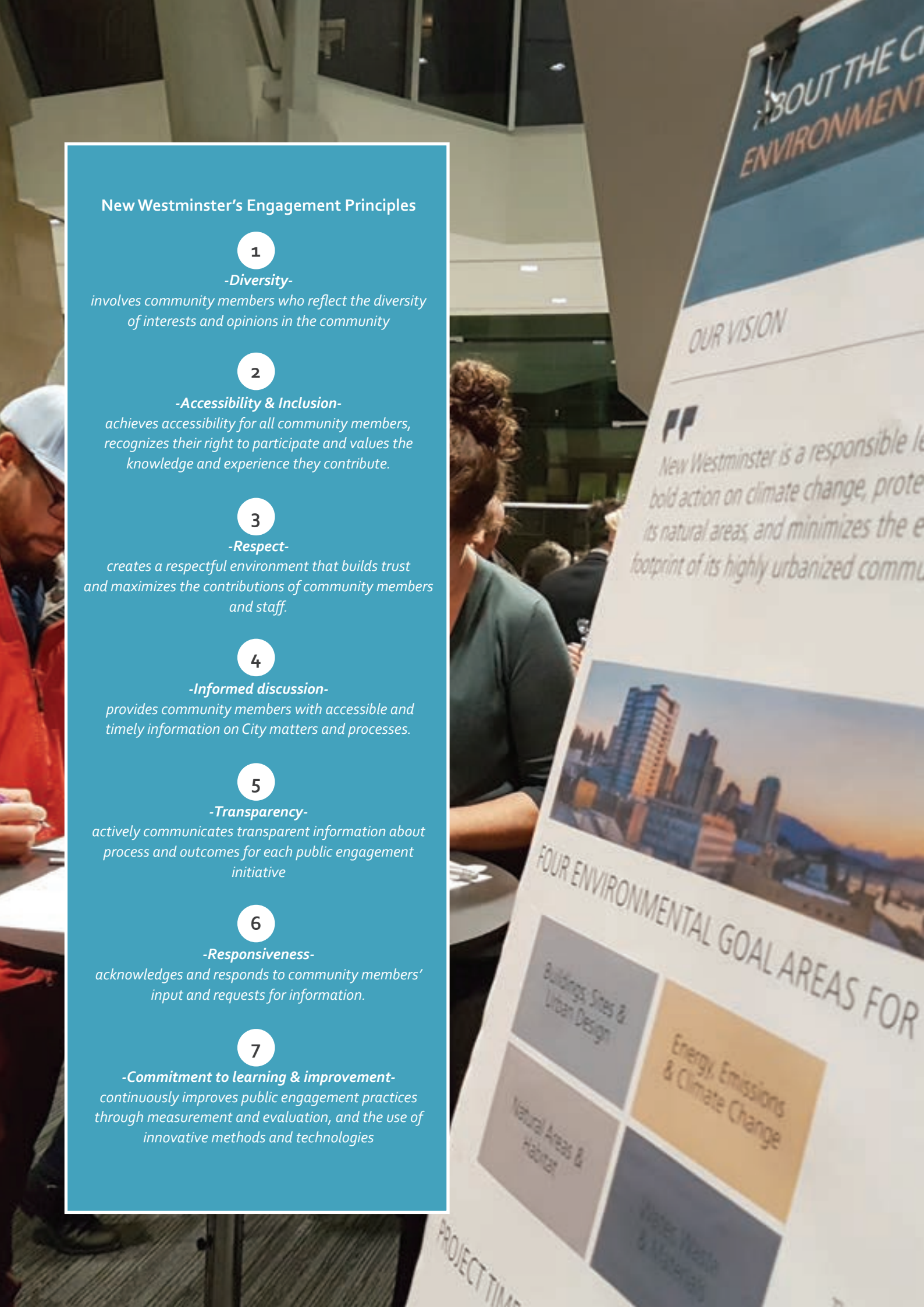
Strategy 15.1 Increase environmental awareness and education of the community

The City will develop and implement an overarching education campaign that will span the four environmental goal areas and integrate the City's engagement principles in its outreach. Targeted programs will be designed for residents, schools or businesses to increase awareness of the key actions necessary to reduce their environmental footprints, as well as their potential economic and social benefits. Educational outreach may be developed separately for a topic area or coordinated across topic areas – for example, combining campaigns on energy and water conservation, or on waste reduction and its support of climate change action. Outreach groups such as Empower Me provide a means to engage different sectors of the community (e.g., low-income households, seniors), where a handful of environmental messages can be presented at one time. Promoting awareness and partnering with local organizations and community leaders will spread environmental awareness and capacity more broadly.

As Metro Vancouver has jurisdiction over a number of environmental resources in the region, it has the capacity to develop specific outreach campaigns. The City will continue to partner with Metro Vancouver and other regional organizations, such as Fraser Health, and take an active role in developing educational programs. Some of these topic areas are listed below:

- Air Quality and Climate Change
- Water Conservation
- Waste Diversion
- Waste Dumping
- Food Strategies
- Hazardous Materials in Wastewater

Existing City plans and actions that support education programs include the Watershed Public Awareness Outreach Program associated with the *Integrated Stormwater Management Plan*, and OCP Policy 5.2f to support and collaborate with Metro Vancouver on the Brunette Fraser Regional Greenway to create places for recreation and education about the natural environment.



New Westminster's Engagement Principles

1

-Diversity-
involves community members who reflect the diversity of interests and opinions in the community

2

-Accessibility & Inclusion-
achieves accessibility for all community members, recognizes their right to participate and values the knowledge and experience they contribute.

3

-Respect-
creates a respectful environment that builds trust and maximizes the contributions of community members and staff.

4

-Informed discussion-
provides community members with accessible and timely information on City matters and processes.

5

-Transparency-
actively communicates transparent information about process and outcomes for each public engagement initiative

6

-Responsiveness-
acknowledges and responds to community members' input and requests for information.

7

-Commitment to learning & improvement-
continuously improves public engagement practices through measurement and evaluation, and the use of innovative methods and technologies

Strategy 15.2. Increase environmental awareness and engagement of staff

The success of the plan rests on the budgetary resources and capacity of the City to implement the strategies and actions. Staff need to have the resources, training and capacity to effectively implement the actions for which they are responsible, and to pursue opportunities to increase the sustainability of their own work. To this end, the City must take a leadership role in educating its municipal workers so they have the knowledge and ability to take action to reduce the corporate environmental footprint. Staff will be empowered to integrate environmental sustainability values into their day-to-day work, and provided the resources or means to support such action. For example, the City will continue to support staff working groups such as the interdepartmental Naturally New West Committee, in which members of different departments play a role in identifying and collaborating on opportunities to increase environmental awareness and enhance the natural environment. Ultimately, increasing awareness should create a corporate culture that embraces taking environmental action as part of daily business.

Strategy 15.3. Foster environmental stewardship and education of the natural environment

As part of ESAP implementation, the City will take steps to foster public stewardship of the natural environment. Connecting humans to nature has shown to facilitate well-being and strengthen human relationship and dependence on nature and the earth's natural resources. Our highly urbanized, historic city has limited natural areas (compared to other cities of the region). This begs the need to ensure stewardship opportunities are available for residents to connect with nature. Participation in conservation or restoration efforts often results in personal satisfaction and becomes a lasting legacy for future generations. The commitment shown through stewardship events helps to "bond" individuals to their communities and enhance their sense of place (of belonging) to something beyond their home, school or workplace. Stewardship presents a strong, hands-on, place-based education opportunity to promote awareness of the value of ecosystems and natural environments.

Adopted plans that support the facilitation of stewardship activities include:

- *Urban Forest Management Strategy* Action 34: Develop and fund an Urban Forest Stewardship Program
- *Official Community Plan* Policy 5.4: Facilitate community environmental stewardship initiatives that protect and restore ecological health.

Actions	Timeline	One-time expense	Ongoing expense
15.1. Increase environmental awareness and education of the community	OG	$	$
15.2 Increase environmental awareness and engagement of staff	OG	$	N/A
15.3. Foster environmental stewardship and education of the natural environment	OG	$	N/A



Tracking Progress

The ESAP is designed to be a living document capable of adapting to changing conditions and priorities over time. It is intended to be updated and aligned with evolving city goals. As the local context and needs of the community change, they will also be reflected in the plan's goals, strategies, and actions.

In order to measure the success of achieving the plan's vision and goals, a set of performance indicators will be developed and tracked. Monitoring key performance indicators is an important part of any plan, as they provide a benchmark of the current state of a given sector, area, or ecosystem, against which progress can be measured over time. Sharing progress in a regular and transparent way builds trust and fosters a sense of shared community responsibility to achieving the plan's goals. Employing a regular review process is an opportunity to amend, refine or remove actions proven to be unsuccessful, and an opportunity to set new or more aggressive targets.

The City is currently tracking several performance indicators as part of monitoring the achievement of its OCP policies. The new ESAP indicators will be synergized to those currently being captured in the OCP monitoring process.

APPENDIX

IMPLEMENTATION TIMELINE & RESOURCES

One-Time Expense

$	< $50,000
$$	$ 50,000 - $100,000
$$$	> $100,000

Ongoing Expense[4]

ST	Short Term
MT	Medium Term
LT	Long Term
OG	Ongoing

Actions	One-time expense	Ongoing expense	New Staff Needed	Timeline
Energy, Emissions and Climate Change				
1.1a. Adopt lower levels of the BC Step Code for Part 9 and Part 3 buildings and incrementally increase to higher Steps over a five year period	$$	$	0.25 FTE	ST
1.2a. Continue to implement and expand the Energy Save New West Program	$	$$	N/A	OG
1.3a. Update and implement a 10-year Corporate Energy and Emissions Reduction Strategy (CEERS)	$	N/A	N/A	ST
1.3b. Review and update the City's corporate green building policy	N/A	N/A	N/A	ST
2.1a. Finalize the business case for the Sapperton Renewable District Energy system	$60M in cost recovery	N/A	TBD	LT
2.1b. Conduct district energy feasibility studies for key areas (e.g., Lower 12th, Downtown, and Uptown)	$$$	N/A	N/A	LT
2.2a. Expand the City's Urban Solar Garden program	$ - $$	N/A	N/A	ST
2.3a. Renew the Community Energy Emissions Plan and include a Renewable City Strategy	$$	N/A	N/A	ST
3.1a. Implement actions from the Master Transportation Plan (MTP) to reduce demand for vehicle travel and encourage sustainable travel modes	$$$	N/A	N/A	LT
3.1b. Create and implement a city-wide Electric Vehicle Strategy	$	N/A	0.5 FTE	ST
3.1c. Continue to expand parking regulations to encourage the use of sustainable transportation alternatives	N/A	N/A	N/A	MT
4.1a. Support local and regional energy benchmarking initiatives	$	N/A	N/A	MT
4.2a. Explore new metering technologies	$	N/A	N/A	ST
4.2b. Support home energy labeling initiatives	N/A	N/A	N/A	ST
4.3a Support Metro Vancouver in strengthening existing air quality monitoring and public education programs	N/A	N/A	N/A	ST

4 *The estimated short term timeline is 1-2 years, medium term is 3-5 years, and long term is over 5 years. However, the implementation of individual actions will be subject to availability of approved funding, resources and capacity.*

Actions	One-time expense	Ongoing expense	New Staff Needed	Timeline
5.1a. Develop a Climate Adaptation Strategy	$$	N/A	N/A	MT
5.2a. Support the development of a Regional Flood Management Strategy and continue to regulate the Flood Construction Level	$	N/A	N/A	OG
5.2b. Update and implement New Westminster's Floodplain Management Strategy	$$$	N/A	N/A	MT
5.3a. Update Development Permit Area guidelines to address risks in hazard prone areas	$$	N/A	N/A	MT
5.3b. Incorporate climate risks into neighbourhood-specific guidelines	$	N/A	N/A	MT
Buildings, Sites & Urban Design				
6.1a. Work with the development community and Metro Vancouver to increase compliance with the City's Demolition Recycling regulation, and explore opportunities to reduce waste from construction	N/A	N/A	N/A	MT
6.2a. Initiate a Task Force to explore strategies to encourage or require environmentally sustainable features in new development	N/A	N/A	N/A	MT
6.2b. Implement strategies from 6.2.a. and ensure new developments and designs have sustainable features in place	N/A	N/A	N/A	LT
6.3a. Educate the development community on the City's environmental protocols and regulations	$	N/A	0.25 FTE	MT
6.3b. Increase enforcement and compliance to the City's environmental bylaws	$	N/A	0.25 FTE	MT
6.4a. Design and adopt a city-wide Noise Attenuation Strategy	$$	N/A	N/A	MT
6.4b. Ensure designs for new development incorporate measures to reduce impacts of noise	N/A	N/A	N/A	MT
7.1a. Develop a Biodiversity and Natural Areas Strategy	See Action 13.1a			
7.1b. Update the City's Development Permit Area Guidelines to guide developers on habitat protection practices	$	N/A	N/A	MT
7.2a. Incorporate Integrated Stormwater Management Plan practices into new development	N/A	$	N/A	MT
7.3a. Implement Integrated Stormwater Management Plan practices on City lands (Also see Action 10.1) **Ongoing expense assumes cost of green infrastructure*	N/A	$$$*	N/A	MT
7.3b. Redevelop a residential street as a "Green Amenity Street" to showcase green infrastructure	$$$	$	N/A	MT

Actions	One-time expense	Ongoing expense	New Staff Needed	Timeline
Water, Waste & Materials				
8.1a. Partner with Metro Vancouver to develop and implement a targeted waste reduction program tailored to New Westminster	N/A	N/A	N/A	OG
8.2a. Develop an enforcement program to enhance the regulation the City's Solid Waste and Recycling Bylaw	$$	N/A	0.25 FTE	MT
8.3a. Provide support for community cleanup events to grow awareness of illegal dumping	N/A	N/A	N/A	OG
8.3b. Work with Metro Vancouver to prevent illegal dumping of drywall and hazardous waste	N/A	N/A	N/A	OG
8.4a. Work with Metro Vancouver to develop waste management outreach strategies for New Westminster businesses	N/A	N/A	N/A	MT
8.4b. Explore the feasibility of an eco-industrial network for New Westminster	$	N/A	N/A	OG
8.4c. Lobby the Province and relevant stewardship agencies to introduce or expand materials stewardship programs	N/A	N/A	N/A	OG
8.5a. Work with regional partners to develop a strategy to minimize the use of single-use products	N/A	N/A	N/A	ST
8.6a. Develop and implement an enhanced solid waste and recycling services program	$	N/A	N/A	OG
8.6b. Develop a residential waste strategy for the multi-family sector	N/A	N/A	0.1 FTE	MT
8.6c. Ensure adequate space for recycling infrastructure is included in new developments	N/A	N/A	N/A	OG
8.7a. Launch a corporate campaign to maximize waste diversion in the public realm, City facilities and events	$	N/A	N/A	MT
8.8a. Explore opportunities to use recycled biosolids in local landscaping	N/A	N/A	N/A	OG
9.1a. Implement measures outlined in the 2017 Assessment of Water Conservation Measures Council Report	$	N/A	N/A	OG
9.1b. Explore the use of water monitoring, pricing and enforcement	$$	N/A	N/A	OG
9.2a. Conduct an irrigation audit to identify measures to reduce water consumption and leakage	N/A	$	N/A	OG
9.2b. Conduct audits of City facilities and other operations to identify and implement water conservation measures	$$$	N/A	N/A	MT
9.3a. Lobby the Province to allow indoor water reuse infrastructure under the Provincial plumbing code	$	N/A	N/A	LT

Actions	One-time expense	Ongoing expense	New Staff Needed	Timeline
9.4a. Continue to encourage the use of drought-tolerant landscaping practices	N/A	N/A	N/A	OG
9.5a. Partner with Metro Vancouver and relevant utilities to improve water conservation in businesses	$	N/A	N/A	MT
10.1a. Implement the Integrated Stormwater Management Plan (ISMP)	$$$+	N/A	2 FTE*	OG
10.2a. Develop a process to better monitor and enforce the City's environmental protection bylaws to reduce pollution	N/A	N/A	0.25 FTE	ST
10.3a. Assess the long-term performance of sewer system using flow monitoring	N/A	N/A	N/A	OG
10.3b. Continue to separate 1.5% of the total length of combined sewers annually, as required by the regional Integrated Liquid Waste and Resource Management Plan	N/A	N/A	N/A	OG
10.3c. Implement measures in the Integrated Stormwater Management Plan to reduce the volume of runoff and improve its quality before entering the downstream system	N/A	N/A	N/A	OG
11.1a. Adopt a Comprehensive Food Strategy for New Westminster	$$	N/A	N/A	MT
11.2a. Develop a Corporate Food Strategy to guide food procurement for city events, buildings and facilities	$	N/A	N/A	ST
Natural Areas & Habitat				
12.1a. Design and implement a Watercourse and Riparian Areas Protection Plan to protect and enhance New Westminster's watercourses and riparian areas	$$	N/A	N/A	MT
12.1b. Review the Riparian Areas Regulation (RAR) process for opportunities to apply the regulation more effectively	$	N/A	N/A	ST
13.1a. Develop and implement a Biodiversity and Natural Areas Strategy to improve the size, quality, connectivity and diversity of natural areas	$$	N/A	0.25 FTE	MT
13.1b. Update the City's design guidelines to encourage new developments to contribute green space and diversity into the urban fabric	$$	N/A	N/A	LT
13.1c. Develop a set of internal design guidelines to ensure measures are taken to protect and enhance natural areas in City-owned projects	$	N/A	N/A	ST
13.2a. Develop a work plan for the implementation of the Urban Forest Management Strategy, including a recommended list of tree species, to ensure forest health and longevity	N/A	N/A	0.25 FTE	OG

Actions	One-time expense	Ongoing expense	New Staff Needed	Timeline
13.3a. Explore the development of a land acquisition strategy to identify opportunities to acquire key habitat areas during re-development ** Assumes land acquisition costs*	$$$*	N/A	N/A	LT
13.3b. Implement actions in the Queens Park Master Plan designed to increase naturalized areas	N/A	$$$	N/A	OG
13.4a. Design and implement a "Dark Sky" policy to reduce night time light pollution	N/A	N/A	N/A	LT
13.4b. Develop an interim strategy to reduce unnecessary night time lighting	$	N/A	N/A	ST
13.5a. Develop a city-wide Invasive Species Management Plan	$	N/A	N/A	OG
14.1a. Establish a city-wide natural assets inventory	$	N/A	N/A	MT
14.2a. Ensure all major City projects incorporate an integrated design process or full lifecycle analysis	N/A	N/A	N/A	OG
14.2b. Adopt a corporate sustainable procurement policy	N/A	N/A	N/A	OG
14.2c. Conduct an environmental evaluation of all major external project proposals	N/A	N/A	N/A	OG
Implementing the Plan				
15.1. Increase environmental awareness and education of the community	$	$	N/A	OG
15.2 Increase environmental awareness and engagement of staff	N/A	$	N/A	OG
15.3. Foster environmental stewardship and education of the natural environment	N/A	$	N/A	OG

NEW WESTMINSTER

