GOAL 3

Protect the Environment, Address Climate Change, and Respond to Natural Hazards

Langley Township

Electoral Area A

Goal 3: Protect the Environment, Address Climate Change, and Respond to Natural Hazards

Metro Vancouver has a spectacular natural environment. Many of Metro Vancouver's ecosystems have global significance, such as the Fraser River estuary, which provides both internationally-important fish habitat and key feeding and resting points for migratory birds along the Pacific Flyway. The region's forests, fields, coastal and intertidal areas, wetlands, and watercourses together are integral pieces of a habitat network for birds, fish, and other wildlife.

The diverse mountain, coastal, and river areas provide the region's residents with essential ecosystem services such as fresh water, clean air, pollination, traditional Indigenous food and medicines, fertile soil, flood control, cooling, carbon storage, and opportunities for tourism, recreation, cultural and spiritual enrichment, health and well-being (Figure 5). Climate change, land development, invasive species, and other human-induced pressures are causing ecosystem change and loss in many areas, which reduces nature's capacity to provide these life-sustaining services. If planned, designed, and built in harmony with nature, communities will be healthier and more resilient over the long-term.

The tenets of the regional growth strategy (such as the ongoing focus on urban containment and land use patterns that support sustainable transportation options and carbon storage opportunities in natural areas) are critical for the region to address climate change. This section contains a strategy and associated policies that support Metro Vancouver's commitment to reaching a carbon neutral region by the year 2050. Climate change is expected to continue to cause warmer temperatures, a reduced snowpack, increasing sea levels, and more intense and frequent drought and rainfall events in the region. An additional strategy aims to improve resilience to these climate change impacts, as well as natural hazards. Many of the region's natural hazards are, and will continue to be, worsened by a changing climate.

Addressing both greenhouse gas emissions and the impacts of climate change and natural hazards simultaneously is critical, as the challenges and solutions associated with these issues are often interlinked. Given the dynamic and rapidly changing impacts of climate change on the Metro Vancouver region, and in response to best practices research and climate science, progress towards the *Metro 2050* targets and performance measures will be regularly monitored with an aim to proposing improvements to the policies and actions in the plan.

A commitment to improving social equity includes advancing equitable climate change strategies and actions that will: intentionally consider the suite of concerns that increase community vulnerability, and acknowledge current financial, health, and social disparities that may be exacerbated by low carbon solutions and the impacts of climate change.

For thousands of years Indigenous people have lived on and stewarded their respective and shared territories developing deep and special relationships with the land and waters. Indigenous knowledge systems that have been developed over many years have the potential to inform and complement regional planning policy and practice.

Strategies to achieve this goal are:

3.1 Protect and enhance Conservation and Recreation lands

3.2 Protect, enhance, restore, and connect ecosystems

3.3 Advance land use, infrastructure, and human settlement patterns that reduce energy consumption and greenhouse gas emissions, create carbon storage opportunities, and improve air quality

3.4 Advance land use, infrastructure, and human settlement patterns that improve resilience to climate change impacts and natural hazards

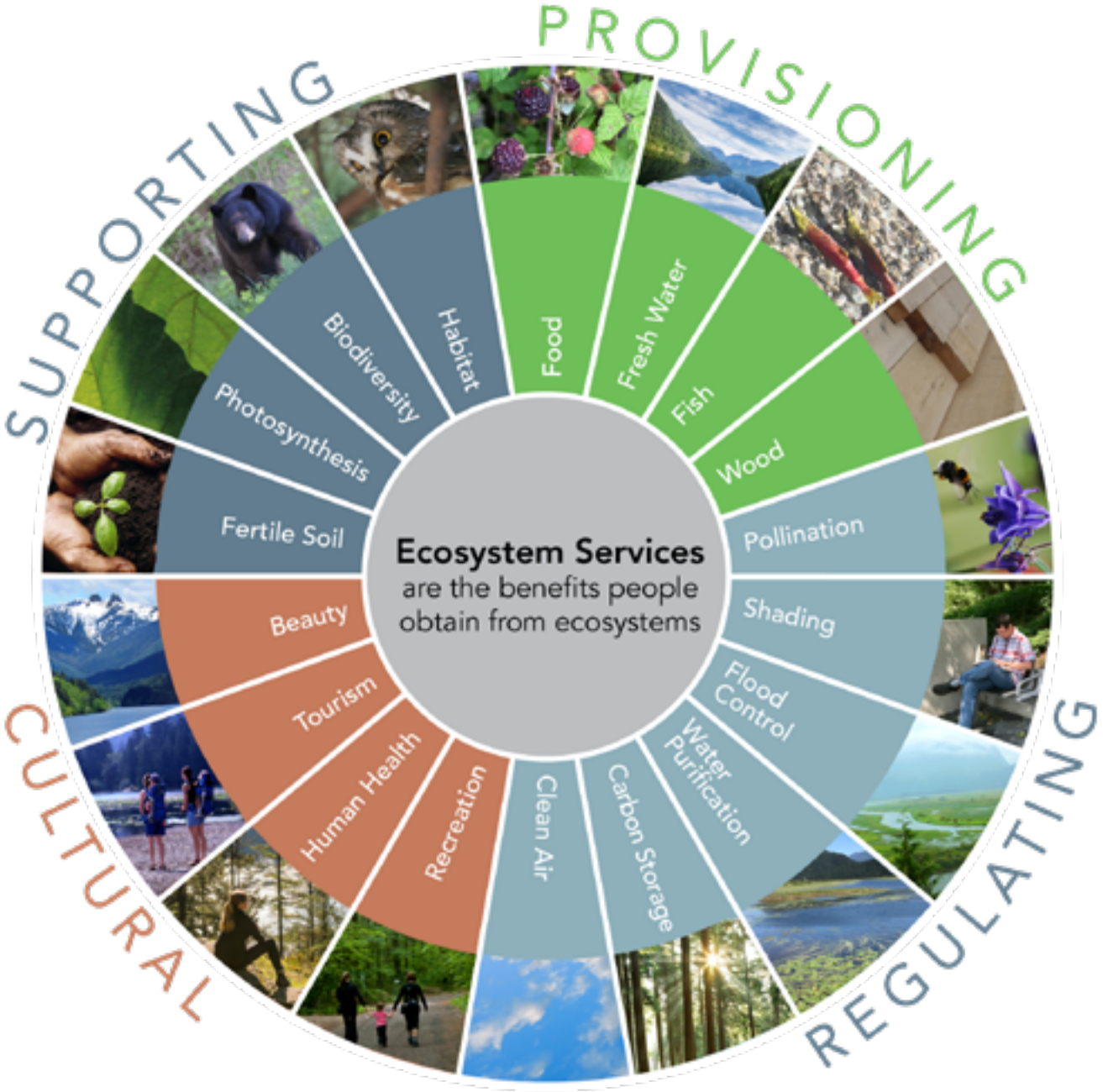

FIGURE 5. ECOSYSTEM SERVICES PROVIDED BY HEALTHY ECOSYSTEMS

Strategy 3.1 Protect and enhance Conservation and Recreation lands

The Conservation and Recreation regional land use designation is intended to help protect significant ecological and recreation assets throughout the region. Protection and management of these assets will ensure they remain productive, resilient, and adaptable, providing vital ecosystem services that support both humans and wildlife, while also safeguarding communities from climate change and natural hazard impacts.

Metro Vancouver will:

3.1.1 Direct the Greater Vancouver Sewerage and Drainage District (GVS&DD) to not allow connections to regional sewerage services to lands with a Conservation and Recreation regional land use designation. Notwithstanding this general rule, in the exceptional circumstances specified below, the Metro Vancouver Regional District (MVRD) Board will advise the GVS&DD Board that it may consider such a connection for existing development or for new development where, in the MVRD Board's opinion, that new development is consistent with the underlying Conservation and Recreation regional land use designation and where the MVRD Board determines either:

a) that the connection to regional sewerage services is the only reasonable means of preventing or alleviating a public health or environmental contamination risk; or

b) that the connection to regional sewerage services would have no significant impact on the strategy to protect lands with a Conservation and Recreation regional land use designation.

3.1.2 Implement the *Metro Vancouver Regional Parks Plan*, the *Regional Parks Land Acquisition 2050 Strategy*, and *Regional Greenways 2050*, and work collaboratively with member jurisdictions to identify, secure and enhance habitat and park lands, and buffer park and conservation areas from activities in adjacent areas.

3.1.3 For the Greater Vancouver Water District and the Greater Vancouver Sewerage and Drainage District, avoid ecosystem loss and fragmentation on lands with a Conservation and Recreation regional land use designation when developing and operating infrastructure, but where unavoidable, mitigate the impacts, including ecosystem restoration and striving for no net ecosystem loss.

3.1.4 Monitor ecosystem gains and losses on lands with a Conservation and Recreation regional land use designation and the Natural Resource Areas therein, as identified on Map 9.

3.1.5 Accept Regional Context Statements that protect lands with a Conservation and Recreation regional land use designation, and that meet or work towards Action 3.1.9.

3.1.6 Advocate to the Federal Government, the Province, utility companies, and TransLink to avoid ecosystem loss and fragmentation on lands within a Conservation and Recreation regional land use designation when developing and operating utility and transportation infrastructure, but where unavoidable, to mitigate the impacts, including ecosystem restoration and striving for no net ecosystem loss.

3.1.7 Advocate to the Province and its agencies to actively manage provincially-owned land within a Conservation and Recreation regional land use designation, and work with adjacent land owners to effectively buffer these lands, with the intent of minimizing negative impacts and enhancing ecosystem integrity and providing public recreational opportunities.

3.1.8 Advocate to the Federal Government and the Province to:

a) recognize the Conservation and Recreation regional land use designation and ensure that their activities within or adjacent to these lands are consistent with the long-term intent of the land use designation; and

b) consult and collaborate with all levels of government, including First Nations, and other stakeholders in the planning and management of lands with a Conservation and Recreation regional land use designation, including during the review of future natural resource extraction projects.

Member jurisdictions will:

3.1.9 Adopt Regional Context Statements that:

a) identify Conservation and Recreation lands and their boundaries on a map generally consistent with Map 2;

b) include policies that support the protection and enhancement of lands with a Conservation and Recreation land use designation, which may include the following uses:

i) drinking water supply areas;

ii) environmental conservation areas;

iii) wildlife management areas and ecological reserves;

iv) forests;

v) wetlands (e.g. freshwater lakes, ponds, bogs, fens, estuarine, marine, freshwater, and intertidal ecosystems);

vi) riparian areas (i.e. the areas and vegetation surrounding wetlands, lakes, streams, and rivers);

vii) ecosystems not covered above that may be vulnerable to climate change and natural hazard impacts, or that provide buffers to climate change impacts or natural hazard impacts for communities; and

Coquitlam

viii) uses within those lands that are appropriately located, scaled, and consistent with the intent of the designation, including:

- major parks and outdoor recreation areas;
- education, research and training facilities, and associated uses that serve conservation and/or recreation users;
- commercial uses, tourism activities, and public, cultural, or community amenities;
- limited agricultural use, primarily soil-based; and
- land management activities needed to minimize vulnerability / risk to climate change impacts.

c) include policies that:

i) protect the integrity of lands with a Conservation and Recreation regional land use designation from activities in adjacent areas by considering wildland interface planning, and introducing measures such as physical buffers or development permit requirements; and

ii) encourage the consolidation of small parcels, and discourage subdivision and fragmentation of lands with a Conservation and Recreation regional land use designation.

təmtəmíx̌tən (Tum-Tumay Whueton) / Belcarra Regional Park

Strategy 3.2 Protect, enhance, restore, and connect ecosystems

This strategy establishes a collective vision for ecosystems across the region, recognizing the scientific evidence that 'nature needs half' of the land base to continue functioning for the benefit of all life and support human well-being. The vision can be realized in this region by working together to protect, enhance, and restore ecosystems, strategically linking green spaces, both in and between urban and rural areas, into a region-wide network that sustains ecosystem services and movement of wildlife across the landscape. Actions to enhance tree canopy cover in urban areas will also improve community resilience by intercepting rainwater, moderating the urban heat island effect, and improving health outcomes.

Metro Vancouver will:

3.2.1 Implement the strategies and actions of the regional growth strategy that contribute to regional targets to:

a) increase the area of lands protected for nature from 40% to 50% of the region's land base by the year 2050; and

b) increase the total regional tree canopy cover within the Urban Containment Boundary from 32% to 40% by the year 2050.

3.2.2 Implement the Metro Vancouver *Ecological Health Framework*, including relevant actions to:

a) collect and maintain data, including the Sensitive Ecosystem Inventory, tree canopy cover, imperviousness, and carbon storage datasets; report on gains and losses and climate change impacts on ecosystems; and share these datasets with member jurisdictions; and

b) incorporate natural assets and ecosystem services into Metro Vancouver's corporate planning, asset management systems and investments, and provide regionally appropriate guidance on methodologies, tools and decision-making frameworks.

3.2.3 Manage Metro Vancouver assets and collaborate with member jurisdictions, First Nations, and other agencies to:

a) protect, enhance, and restore ecosystems as identified on Map 11 or more detailed local ecological and cultural datasets;

b) identify ecosystems that may be vulnerable to climate change and natural hazard impacts as part of regional multi-hazard mapping in Action 3.4.2 a);

c) identify a regional green infrastructure network that connects ecosystems and builds on existing local networks, while maximizing resilience, biodiversity, and human health benefits; and

d) prepare Implementation Guidelines to support a regional green infrastructure network and to assist with the protection, enhancement, and restoration of ecosystems.

3.2.4 Work with local First Nations to:

a) increase understanding of Indigenous ecological knowledge, and share information about environmental research, policy development, and planning best practices;

b) find joint stewardship and restoration opportunities on Metro Vancouver sites, and expand access to sustainably cultivate and harvest plants for cultural purposes; and

c) seek other Indigenous stewardship, research, and co-management opportunities.

3.2.5 Accept Regional Context Statements that advance the protection, enhancement, restoration, and connection of ecosystems in a regional green infrastructure network, and that meet or work towards Action 3.2.7.

3.2.6 Advocate to the Federal Government and the Province to:

a) strengthen species-at-risk and ecosystem protection legislation to better protect critical habitat, and support restoration and biodiversity, in addition to convening a local government support network;

b) support the uptake of nature-based climate change solutions, including those that protect or restore foreshore ecosystems;

c) update and consolidate provincial invasive species legislation to better support the management of high-risk invasive species; and

d) undertake a regional impact assessment of the Fraser River Estuary to support the management of cumulative effects from development.

Member jurisdictions will:

3.2.7 Adopt Regional Context Statements that:

a) identify local ecosystem protection and tree canopy cover targets, and demonstrate how these targets will contribute to the regional targets in Action 3.2.1;

b) refer to Map 11 or more detailed local ecological and cultural datasets and include policies that:

i) support the protection, enhancement, and restoration of ecosystems through measures such as land acquisition, density bonusing, development permit requirements, subdivision design, conservation covenants, land trusts, and tax exemptions;

ii) seek to acquire, restore, enhance, and protect lands, in collaboration with adjacent member jurisdictions and other partners, that will enable ecosystem connectivity in a regional green infrastructure network;

iii) discourage or minimize the fragmentation of ecosystems through low impact development practices that enable ecosystem connectivity; and

iv) indicate how the interface between ecosystems and other land uses will be managed to maintain ecological integrity using edge planning, and measures such as physical buffers, or development permit requirements.

Maple Ridge

c) include policies that:

i) support the consideration of natural assets and ecosystem services in land use decision-making and land management practices;

ii) enable the retention and expansion of urban forests using various tools, such as local tree canopy cover targets, urban forest management strategies, tree regulations, development permit requirements, land acquisition, street tree planting, and reforestation or restoration policies, with consideration of resilience;

iii) reduce the spread of invasive species by employing best practices, such as the implementation of soil removal and deposit bylaws, development permit requirements, and invasive species management plans;

v) increase green infrastructure along the Regional Greenway Network, the Major Transit Network, community greenways, and other locations, where appropriate, and in collaboration with Metro Vancouver, TransLink, and other partners; and

iv) support watershed and ecosystem planning, the development and implementation of Integrated Stormwater Management Plans, and water conservation objectives.

Strategy 3.3 Advance land use, infrastructure, and human settlement patterns that reduce energy consumption and greenhouse gas emissions, create carbon storage opportunities, and improve air quality

The tenets of the regional growth strategy are crucial for meeting the region's commitment to reduce greenhouse gas emissions and to reach carbon neutrality by the year 2050. As described in other strategies in the regional growth strategy, this can be achieved in three key ways: by supporting growth and development patterns that enable sustainable transportation options; by encouraging higher-density built forms and multi-unit developments which are typically more energy efficient than lower-density alternatives; and by reducing development pressures in areas that naturally store and sequester carbon (such as conservation and agricultural lands). To supplement these important policy actions from other goal areas in the regional growth strategy, Strategy 3.3 contains the region's greenhouse gas emissions reduction targets and associated policies.

Metro Vancouver will:

3.3.1 Implement the:

a) strategies and actions of the regional growth strategy that contribute to regional targets to reduce greenhouse gas emissions by 45% below 2010 levels by the year 2030 and to achieve a carbon neutral region by the year 2050; and

b) *Metro Vancouver Clean Air Plan*, *Climate 2050*, and other associated actions to help achieve the regional greenhouse gas emissions reduction targets in Action 3.3.1 a).

3.3.2 Work with the Federal Government, the Province, TransLink, member jurisdictions, First Nations, non-governmental organizations, energy utilities, the private sector, and other stakeholders, as appropriate, to:

a) monitor energy consumption, greenhouse gas emissions, and air quality related to land use, buildings, industry, agriculture, waste, transportation, and other emission sources, and consider lifecycle energy and emissions;

b) monitor and pursue opportunities to increase carbon storage in natural areas; and

c) promote best practices and develop guidelines to support local government actions that reduce energy consumption and greenhouse gas emissions, support a transition to clean, renewable energy (including electricity), create carbon storage opportunities, and improve air quality.

3.3.3 Work with TransLink, member jurisdictions, and health authorities to advocate that health impact assessments be conducted for major transportation projects and significant development projects with an aim to minimizing public exposure to traffic-related air contaminants.

3.3.4 Work with the Federal Government, the Province, and other stakeholders when conducting environmental assessments to reduce the environmental and health impacts related to regional air quality and greenhouse gas emissions.

3.3.5 Accept Regional Context Statements that advance land use, infrastructure, and settlement patterns that reduce energy consumption and greenhouse gas emissions, improve air quality, create carbon storage opportunities, and that meet or work towards Action 3.3.7.

3.3.6 Advocate to the Federal Government and the Province to establish and support legislative and fiscal actions, that help the public and private sector maximize reductions in energy consumption and greenhouse gas emissions, and improve air quality, such as:

a) in the building sector,

i) accelerating the transition of energy efficiency requirements in the *BC Building Code* to net zero energy ready levels by 2032;

ii) setting greenhouse gas and energy performance requirements for new and existing buildings;

iii) increasing incentives and financing tools for new low-carbon, zero-emissions, and resilient buildings;

iv) supporting large-scale building electrification;

v) requiring benchmarking and energy labels for new and existing buildings;

vi) supporting reductions in embodied emissions of buildings, and the increased use of low-carbon circular building products and processes;

vii) supporting programs, services and incentives for low-carbon upgrade options in rental buildings that benefit building owners and tenants;

viii) incenting equitable transit-oriented development through policy and funding programs; and

ix) supporting, where feasible and appropriate, energy recovery, renewable energy generation and zero-carbon district energy systems, and related transmission needs.

b) in the transportation sector,

i) revising enabling legislation to allow regional road usage charging for the purposes of managing congestion and greenhouse gas emissions;

ii) supporting electric vehicle charging in new and existing buildings through requirements and programs;

iii) continuing to increase the amount of reliable and sustainable funding available for sustainable transportation infrastructure and low emission travel modes, such as active transportation and public transit; and

iv) continuing to advance stringent standards for on-road vehicle emissions and fuel carbon content.

Member jurisdictions will:

3.3.7 Adopt Regional Context Statements that:

a) identify how local land use and transportation policies will contribute to meeting the regional greenhouse gas emission reduction target of 45% below 2010 levels by the year 2030 and achieving a carbon neutral region by the year 2050;

b) identify policies, actions, incentives, and / or strategies that reduce energy consumption and greenhouse gas emissions, create carbon storage opportunities, and improve air quality from land use, infrastructure, and settlement patterns, such as:

i) existing building retrofits and construction of new buildings to meet energy and greenhouse gas performance guidelines or standards (e.g. BC Energy Step Code, passive design), the electrification of building heating systems, green demolition requirements, embodied emissions policies, zero-carbon district energy systems, and energy recovery and renewable energy generation technologies, such as solar panels and geoexchange systems, and zero emission vehicle charging infrastructure; and

ii) community design, infrastructure, and programs that encourage transit, cycling, rolling and walking; and

c) focus infrastructure and amenity investments in Urban Centres and Frequent Transit Development Areas, and at appropriate locations along Major Transit Growth Corridors.

TransLink will:

3.3.8 Support regional air quality objectives and greenhouse gas emission reduction targets by advancing policy and infrastructure to support the aggressive transition of the ground-based vehicle fleet to zero-emissions, and by transitioning the entire transit fleet to one that utilizes low-carbon fuels.

3.3.9 In collaboration with Metro Vancouver and member jurisdictions, establish a definition of major development proposals, which are referenced in the *South Coast British Columbia Transportation Authority Act*, to support the objective of concentrating Major Trip-Generating uses in areas well served by transit.

Vancouver

Strategy 3.4 Advance land use, infrastructure, and human settlement patterns that improve resilience to climate change impacts and natural hazards

Climate change is expected to continue to impact Metro Vancouver through warmer temperatures, decreased snowpack, sea level rise, longer summer drought periods, and increased precipitation in the fall, winter, and spring. The region is also exposed to multiple natural hazards, many of which are worsened by climate change. Where and how the region accommodates growth determines the degree to which communities and infrastructure are exposed to these risks. While efforts need to be made to ensure that all populations are well-equipped to address these challenges, proactive and collaborative planning can minimize risks by encouraging growth and development in more resilient areas, where feasible, and taking measures to ensure existing communities and infrastructure are resilient to current and future risks.

TABLE 5. MAJOR NATURAL HAZARDS AND CLIMATE CHANGE IMPACTS AFFECTING METRO VANCOUVER

NATURAL HAZARDS	RELATED CLIMATE CHANGE IMPACTS
Earthquakes	
Tsunamis	Sea level rise
Landslides	More precipitation (fall, winter, and spring)
Floods (pluvial, coastal, riverine)	More precipitation (fall, winter, and spring) Sea level rise Decrease in snowpack
Wildfires	Longer drought periods (summer) Warmer temperatures and extreme heat events Reduced air quality
Erosion	Sea level rise More precipitation (fall, winter, and spring)
Subsidence	Sea level rise
Windstorms and other extreme weather events	Sea level rise More precipitation (fall, winter, and spring)

Metro Vancouver will:

3.4.1 Incorporate climate change and natural hazard risk assessments into the planning and location of existing and future Metro Vancouver utilities, assets, operations, and other critical infrastructure.

3.4.2 Work with the Integrated Partnership for Regional Emergency Management, the Federal Government, the Province, First Nations, TransLink, member jurisdictions, adjacent regional districts, and other stakeholders, as appropriate, to:

a) collaboratively develop and share information and data related to hazards, risks, and vulnerabilities in the Metro Vancouver region, which may include preparing a regional multi-hazard map, and identifying and coordinating priority actions, implementation strategies, and funding mechanisms;

b) plan for climate change impacts and natural hazard risks when extending utilities and transportation infrastructure that support development;

c) support the integration of emergency management, utility planning, and climate change adaptation principles in land use plans, transportation plans, and growth management policies;

d) research and promote best practices and develop guidelines to support resilience to the impacts of climate change and natural hazards as it relates to planning and development;

e) support regional flood management approaches, such as the implementation of the Lower Mainland Flood Management Strategy; and

f) research and share information related to the impacts of climate change and natural hazards on vulnerable populations, and focus resilience actions on equitable outcomes.

3.4.3 Accept Regional Context Statements that advance land use, settlement patterns, transportation and utility infrastructure which improve the ability to withstand climate change impacts and minimize natural hazard risks, and that meet or work towards Actions 3.4.5, 3.4.6, 3.4.7, and 3.4.8.

3.4.4 Advocate to the Federal Government and the Province that they:

a) review and improve existing provincial legislation and guidelines regarding flood hazard management at the local level, encourage the adoption of local flood hazard policies and bylaws, and implement appropriate preparatory actions to address the long-term implications of sea level rise on infrastructure planning, construction, and operations;

b) incorporate resilience considerations into building codes and standards;

c) modernize the provincial *Emergency Program Act* and associated regulations with requirements for land use planning, and consider land use implications in the development of climate change adaptation strategies; and

d) provide guidelines, programs, funding, and timely data and information to support regional and local planning for climate change impacts and natural hazards.

Member jurisdictions will:

3.4.5 Adopt Regional Context Statements that:

a) include policies that minimize risks associated with climate change and natural hazards in existing communities through tools such as heat and air quality response plans, seismic retrofit policies, and flood-proofing policies; and

b) include policies that discourage new development in current and future hazardous areas to the extent possible through tools such as land use plans, hazard-specific Development Permit Areas, and managed retreat policies, and where development in hazardous areas is unavoidable, mitigate risks.

3.4.6 Incorporate climate change and natural hazard risk assessments into planning and location decisions for new municipal utilities, assets, operations, and community services.

3.4.7 Integrate emergency management, utility planning, and climate change adaptation principles when preparing land use plans, transportation plans, and growth management policies.

3.4.8 Adopt appropriate planning standards, guidelines, and best practices related to climate change and natural hazards, such as flood hazard management guidelines and wildland urban interface fire risk reduction principles.

West Vancouver

təmtəmíx^{w}tən (Tum-Tumay Whueton) Belcarra Regional Park