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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

METRO VANCOUVER REGIONAL DISTRICT
AIR QUALITY AND CLIMATE COMMITTEE

MEETING

Friday, April 4, 2025
9:00 am
28th Floor Committee Room, 4515 Central Boulevard, Burnaby, British Columbia
Webstream available at https://www.metrovancouver.org

A G E N D A

A. ADOPTION OF THE AGENDA

1. April 4, 2025 Meeting Agenda
That the Air Quality and Climate Committee adopt the agenda for its meeting scheduled for April 4, 2025 as circulated.

B. ADOPTION OF THE MINUTES

1. February 7, 2025 Meeting Minutes *pg. 7*
That the Air Quality and Climate Committee adopt the minutes of its meeting held February 7, 2025 as circulated.

C. DELEGATIONS

D. INVITED PRESENTATIONS

E. REPORTS FROM COMMITTEE OR CHIEF ADMINISTRATIVE OFFICER

1. Air Quality and Climate Committee Revised Terms of Reference and 2025 Work Plan *pg. 11*

Executive Summary
The Terms of Reference for the Air Quality and Climate Committee set out the Committee's responsibilities of providing advice and recommendations to the Metro Vancouver Board in the areas of air quality, climate mitigation and adaptation, clean energy, and now flood resiliency, following a recent decision by the Board Chair to incorporate the work of the Flood Resiliency Committee into this Committee's work plan. Flood-related work plan priorities for 2025 include considering a scan of past and current flood projects in the region, providing direction on regional flood risk

reduction priorities for future projects, and receiving updates on the *BC Flood Strategy* and other ongoing flood protection initiatives in the region.

Recommendation

That the Air Quality and Climate Committee:

a) receive for information the revised Air Quality and Climate Committee Terms of Reference as presented in the report dated March 12, 2025, titled “Air Quality and Climate Committee Revised Terms of Reference and 2025 Work Plan"; and
b) endorse the revised 2025 Air Quality and Climate Committee Work Plan, as presented in the report dated March 12, 2025, titled “Air Quality and Climate Committee Revised Terms of Reference and 2025 Work Plan".

2. Land Use Resilience Best Practice Guide - Flooding and Related Hazards - Proposed Scope of Work

pg. 17

Executive Summary

This report outlines the proposed scope of work to develop a Land Use Resilience Best Practice Guide for flooding and related hazards. This Guide is intended as the first in a series of resource guides to support member jurisdictions increase their resilience to various natural hazards. Flooding and related hazards (e.g., landslides) were selected as a priority topic given the increase and intensity of these events in the region in recent years. Each member jurisdiction has unique challenges and may experience different types of flooding and impacts. Exploring flooding at the regional scale is important because impacts can be felt across jurisdictional boundaries. The Guide will provide best practices and a range of policy options that can be applied by members based on their unique local context.

Members of the Regional Planning and Regional Engineers Advisory Subcommittees expressed strong support for the Guide, confirmed that flooding is a priority focus area, and noted that the guide would assist members to deliver their duties for flood management at the local level.

Recommendation

That the MVRD Board receive for information the report dated March 21, 2025, titled “Land Use Resilience Best Practice Guide: Flooding and Related Hazards – Proposed Scope of Work”.

3. 2025 Regional District Sustainability Innovation Fund Application: Regional-Scale Hazard, Risk, and Vulnerability Analysis *pg. 25*

Executive Summary
This report presents the Regional-Scale Hazard, Risk, and Vulnerability Analysis (HRVA) project recommended for funding through the Regional District Sustainability Innovation Fund, totaling $500,000 over two years. The proposed HRVA project involves leading and coordinating a regional-scale risk assessment specific to the Metro Vancouver region. Given the unique challenges of the region and the interface of hazardous areas across jurisdictional boundaries there is a critical need for coordination on hazard and risk work. A regional HRVA approach would benefit member jurisdictions, Metro Vancouver, and other regional partners and support an efficient and effective response to new legislative risk assessment requirements from the Province. New legislation will result in all 23 member jurisdictions completing individual risk assessments and undertaking engagement with project partners within a similar timeframe; Metro Vancouver is well positioned to provide regional data and analysis and play a coordinating role to save member jurisdictions time and money.

A regional HRVA would deliver a robust understanding of hazards, risks, and vulnerabilities specific to the region and strategies to address them, a coordinated regional resilience network to convene partners, and critical information to support land use planning, climate action, and emergency management efforts.

Recommendation
That the MVRD Board approve allocation from the Regional District Sustainability Innovation Fund for the project "Metro Vancouver Regional-Scale Hazard, Risk, and Vulnerability Analysis (HRVA)" for $250,000 for 2025 and 2026 for a total of $500,000.

4. Appointment of Enforcement Officer *pg. 37*

Executive Summary
Recent changes in staffing have resulted in a need to update a staff appointment as Metro Vancouver Regional District (MVRD) Board-designated officer under the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008*, the *Environmental Management Act*. Staffing changes are a result of recruitment for a vacant position following a retirement. Staff recommend that the MVRD Board appoint staff accordingly.

Recommendation
That the MVRD Board, pursuant to the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008* and the *Environmental Management Act,* appoint Metro Vancouver employee Gabriel de Andrade Fazioni as an officer.

5. MVRD Notice of Bylaw Violation Enforcement and Dispute Adjudication Bylaw Amendment Bylaw No. 1410, 2025

pg. 39

Executive Summary

Metro Vancouver can use a range of tools to promote compliance with its air quality bylaws. The *Greater Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Bylaw No. 1117, 2010* (*GVRD Bylaw No. 1117, 2010*) allows designated contraventions to be addressed through a notice of bylaw violation as an enforcement measure for infractions. This report proposes amendments to *GVRD Bylaw No. 1117, 2010* to update the contraventions of *GVRD Air Quality Management Bylaw No. 1082, 2008* (*GVRD Bylaw No. 1082, 2008*), designated in Schedule B of *GVRD Bylaw No. 1117, 2010*, to make it possible to use notices of bylaw violation as an additional tool to deal with contraventions of pollution prevention orders and pollution abatement orders. Notices of bylaw violation use a simple, cost-effective process to take initial enforcement action for designated minor bylaw infractions.

Recommendation

That the MVRD Board:

a) give first, second, and third reading to *Metro Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Amendment Bylaw No. 1410, 2025*; and

b) pass and finally adopt *Metro Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Amendment Bylaw No. 1410, 2025*.

6. Analyzing Thermal Energy Opportunities Across Metro Vancouver *pg. 46*

Executive Summary
This report outlines a project to evaluate opportunities for thermal energy networks (TENs) for efficiently heating and cooling buildings in the region and supporting energy resilience. TENs are an evolution of district energy systems that use zero-emissions energy such as waste heat instead of fossil fuel. The study takes a regional approach that enables economies of scale, cross-municipal opportunities and shared learning, and will support members in more detailed studies and policies for TENs in their jurisdictions. Staff from at least 10 municipalities have indicated interest in being involved via an advisory committee and/or engagement activities. Supported with funding from BC Hydro and the Zero Emissions Innovation Centre, the study supports Metro Vancouver's goals to beneficially use recovered energy and advances actions in various strategic plans. Input provided on the project scope by the Air Quality and Climate Committee and MVRD Board will be incorporated.

Recommendation
That the MVRD Board receive for information the report dated March 20, 2025, titled "Analyzing Thermal Energy Opportunities Across Metro Vancouver".

7. Manager's Report *pg. 54*

Recommendation
That the Air Quality and Climate Committee receive for information the report dated March 10, 2025, titled "Manager's Report".

F. INFORMATION ITEMS

1. Metro Vancouver Tree Guide *pg. 57*

G. OTHER BUSINESS

H. RESOLUTION TO CLOSE MEETING

Note: The Committee must state by resolution the basis under section 90 of the Community Charter on which the meeting is being closed. If a member wishes to add an item, the basis must be included below.

That the Air Quality and Climate Committee close its meeting scheduled for April 4, 2025 pursuant to section 226 (1) (a) of the *Local Government Act* and the *Community Charter* provisions as follows:

90(2) A part of a council meeting must be closed to the public if the subject matter being considered relates to one or more of the following:

(b) the consideration of information received and held in confidence relating to negotiations between the municipality and a provincial government or the federal government or both, or between a provincial government or the federal government or both and a third party.

I. ADJOURNMENT

That the Air Quality and Climate Committee adjourn its meeting of April 4, 2025.

Membership:

Dominato, Lisa (C) – Vancouver
Marsden, Dennis (VC) – Coquitlam
Baillie, Tim – Langley Township
Berry, Ken – Lions Bay
Wallace, Rosemary – Langley City
Watt, Linda – West Vancouver
Dueck, Judy – Maple Ridge
Elford, Doug – Surrey
Gu, Alison – Burnaby
Lahti, Meghan – Port Moody
McCutcheon, Jen – Electoral Area A
McNulty, Bill – Richmond
Ross, Jamie – Belcarra
Ruimy, Dan – Maple Ridge

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

METRO VANCOUVER REGIONAL DISTRICT
AIR QUALITY AND CLIMATE COMMITTEE

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Air Quality and Climate Committee held at 9:00 am on Friday, February 7, 2025 in the 28th Floor Committee Room, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:
Chair, Director Lisa Dominato, Vancouver
Vice Chair, Councillor Dennis Marsden, Coquitlam
Councillor Tim Baillie, Langley Township
Director Ken Berry, Lions Bay*(arrived at 9:01 am)
Director Doug Elford, Surrey*
Director Meghan Lahti, Port Moody* (departed at 11:08 am)
Director Jen McCutcheon, Electoral Area A
Director Bill McNulty, Richmond
Director Jamie Ross, Belcarra
Director Dan Ruimy, Maple Ridge
Councillor Rosemary Wallace, Langley City
Councillor Linda Watt, West Vancouver

*denotes electronic meeting participation as authorized by the *Procedure Bylaw*

MEMBERS ABSENT:
Councillor Alison Gu, Burnaby

OTHERS PRESENT:
Melina Scholefield, Executive Director, Zero Emissions Innovation Centre
Darla Simpson, Senior Manager, BC Retrofit Accelerator, Zero Emissions Innovation Centre
Dr. Angela Yao, Senior Scientist, Environmental Health Services, BC Centre for Disease Control

STAFF PRESENT:
Conor Reynolds, Director, Air Quality and Climate Action Services
Catherine Grosson, Legislative Services Coordinator, Board and Information Services
Kyle Howe, Senior Air Quality Analyst, Air Quality and Climate Action Services
Kathy Preston, Director, Environmental Regulation and Enforcement

A. ADOPTION OF THE AGENDA

1. Air Quality and Climate Committee Meeting Agenda

It was MOVED and SECONDED
That the Air Quality and Climate Committee adopt the agenda for its meeting scheduled for February 7, 2025 as circulated.

CARRIED

9:01 am Director Berry arrived at the meeting.

B. ADOPTION OF THE MINUTES

No items presented.

C. DELEGATIONS

No items presented.

D. INVITED PRESENTATIONS

1. Dr. Angela Yao, Senior Scientist, Environmental Health Services, BC Centre for Disease Control

Subject: Air Quality and Health in the Metro Vancouver Region

Dr. Angela Yao provided members with a presentation titled "Air Quality and Health in the Metro Vancouver Region" which outlined the human health impacts of air pollution and how reducing low level exposure to air pollution by reducing emissions, creating clean indoor air spaces, and adjusting behaviour can have significant health benefits.

2. Melina Scholefield, Executive Director, Zero Emissions Innovation Centre, and Darla Simpson, Senior Manager, BC Retrofit Accelerator, Zero Emissions Innovation Centre

Subject: BC Retrofit Accelerator: Enabling Healthy, Zero-Carbon Large Buildings in the Metro Vancouver Region

Melina Scholefield and Darla Simpson provided members with a presentation titled "BC Retrofit Accelerator: Supporting Healthy and Climate-Resilient Existing Large Buildings in our Region" which outlined the work that the Zero Emissions Innovation Centre is doing with regards to several retrofit accelerator initiatives, and how they support building owners with information and guidance on pathways to decarbonization of large buildings.

E. REPORTS FROM COMMITTEE OR CHIEF ADMINISTRATIVE OFFICER

1. 2025 Air Quality and Climate Committee Meeting Schedule and Work Plan

Report dated January 16, 2025 from Conor Reynolds, Director, Air Quality and Climate Action Services, providing the Air Quality and Climate Committee with its 2025 Work Plan, Terms of Reference, and the Annual Meeting Schedule.

Conor Reynolds provided members with a presentation titled "2025 Priorities and Work Plan" which outlined the committee's workplan, priorities and goals for 2025.

It was MOVED and SECONDED

That the Air Quality and Climate Committee:

a) receive for information the Air Quality and Climate Committee Terms of Reference and the 2025 Annual Meeting Schedule, as presented in the report dated January 16, 2025, titled "2025 Air Quality and Climate Committee Meeting Schedule and Work Plan"; and

b) endorse the 2025 Work Plan, as presented in the report dated January 16, 2025, titled "2025 Air Quality and Climate Committee Meeting Schedule and Work Plan".

CARRIED

2. Metro Vancouver's Air Quality Management and Regulation Service

Report dated January 16, 2025 from Conor Reynolds, Director, Air Quality and Climate Action Services, and Kathy Preston, Director, Environmental Regulation and Enforcement, informing the Air Quality and Climate Committee and MVRD Board about Metro Vancouver's responsibility and activities related to its air quality management and regulation service in the region.

Conor Reynolds and Kathy Preston provided members with a presentation titled "Metro Vancouver's Air Quality Management and Regulation Service" which outlined the history of Metro Vancouver's delegated authority to regulate emissions; bylaws, staffing, and the trend towards improving air quality since 1972 when this authority was first delegated to Metro Vancouver.

It was MOVED and SECONDED

That the MVRD Board receive for information the report dated January 16, 2025, titled "Metro Vancouver's Air Quality Management and Regulation Service".

CARRIED

Director McCutcheon was absent for the vote.

11:08 am Director Lahti departed the meeting.

3. Manager's Report

Report dated January 16, 2025 from Conor Reynolds, Director, Air Quality and Climate Action Services providing an overview of the Climate Related Monitoring Program, Building Decarbonization Alliance Pan-Canada Thermal Energy Networks Project, and the LumiAir visual air quality display.

Kyle Howe, Senior Air Quality Analyst, Planning and Assessment, Air Quality and Climate Action Services, provided a demonstration of the LumiAir visual air quality display and provided information on the benefits of utilizing this interactive device for public education purposes.

It was MOVED and SECONDED
That the Air Quality and Climate Committee receive for information the report dated January 16, 2025, titled "Manager's Report".

CARRIED

F. INFORMATION ITEMS

1. Notes from November 7, 2024 Climate Action Committee Discussion

G. OTHER BUSINESS

No items presented.

H. RESOLUTION TO CLOSE MEETING

No items presented.

I. ADJOURNMENT

It was MOVED and SECONDED
That the Air Quality and Climate Committee adjourn its meeting of February 7, 2025.

CARRIED
(Time: 11:18 am)

Hadir Ali,
Legislative Services Coordinator

Lisa Dominato,
Chair

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services
Conor Reynolds, Director, Air Quality and Climate Action Services

Date: March 12, 2025 Meeting Date: April 4, 2025

Subject: **Air Quality and Climate Committee Revised Terms of Reference and 2025 Work Plan**

RECOMMENDATIONS

That the Air Quality and Climate Committee:

a) receive for information the revised Air Quality and Climate Committee Terms of Reference as presented in the report dated March 12, 2025, titled “Air Quality and Climate Committee Revised Terms of Reference and 2025 Work Plan"; and

b) endorse the revised 2025 Air Quality and Climate Committee Work Plan, as presented in the report dated March 12, 2025, titled “Air Quality and Climate Committee Revised Terms of Reference and 2025 Work Plan".

EXECUTIVE SUMMARY

The Terms of Reference for the Air Quality and Climate Committee set out the Committee’s responsibilities of providing advice and recommendations to the Metro Vancouver Board in the areas of air quality, climate mitigation and adaptation, clean energy, and now flood resiliency, following a recent decision by the Board Chair to incorporate the work of the Flood Resiliency Committee into this Committee’s work plan. Flood-related work plan priorities for 2025 include considering a scan of past and current flood projects in the region, providing direction on regional flood risk reduction priorities for future projects, and receiving updates on the *BC Flood Strategy* and other ongoing flood protection initiatives in the region.

PURPOSE

To provide the Air Quality and Climate Committee with the revised Terms of Reference (Attachment 1), and 2025 Work Plan (Attachment 2).

BACKGROUND

In March 2025, the Board Chair incorporated the work of the Flood Resiliency Committee into the Air Quality and Climate Committee’s work plan. Accordingly, the revised terms of reference and work plan with new flood resiliency items are presented in this report.

METRO VANCOUVER FLOOD RESILIENCY PROJECTS

Metro Vancouver is supporting the ongoing planning work in the Lower Fraser and helping advance the *BC Flood Strategy* (Reference 1) by undertaking interrelated regional flood planning projects:

1. a scan of flood risk reduction capital projects;
2. a prioritization criteria matrix that can help standardize the categories and values used to assess and prioritize future projects; and

3. collaborative identification of priority projects for the region using the criteria matrix so that member jurisdictions can work together on a funding strategy.

Preliminary results of the scan, in the form of a visual map and information table, will be presented to the Committee and Board for review and feedback in early summer 2025. The prioritization criteria matrix work is ongoing and expected to be completed in Q4 2025 and will be used to identify priority projects. Regional Planning staff also lead work related to natural hazards, including flooding, that stems from *Metro 2050*, the regional growth strategy. This work includes the Flooding and Related Hazards Land Use Resilience Best Practice Guide.

REVISED 2025 WORK PLAN

Key new actions in the 2025 Work Plan for the Committee are described below and listed according to the Committee responsibilities in its revised Terms of Reference.

- Receive a scope of work for a Land Use Resilience Best Practice Guide related to flooding;
- Consider a scan of flood-related capital projects in the Metro Vancouver region;
- Provide direction on flood risk reduction priorities; and
- Receive updates on the *BC Flood Strategy*, Lower Fraser Floodplains Coalition dialogues, and other ongoing flood-related initiatives in the region.

The committee will be updated on the status of the actions and projects in this work plan per the Committee's schedule.

ALIGNMENT WITH *CLIMATE 2050*

The flood-related work plan items are consistent with the following guiding principles of the *Climate 2050* strategy:

- **Actionable** – Propose actions that can realistically be implemented given Metro Vancouver's mandate, finances and capacities; if necessary evaluate changes to mandate;
- **Inclusive & Collaborative** – Involve Metro Vancouver's members, strategic partners and communities in the planning and implementation of the *Climate 2050* strategy;
- **Integrated** – Ensure actions are integrated with other municipal and regional policy priorities and are coordinated with Provincial and Federal initiatives; and
- **Relevant** – Design actions to respond to Metro Vancouver's unique challenges and opportunities and deliver local benefits.

ALTERNATIVES

1. That the Air Quality and Climate Committee:
   a) receive for information the revised Air Quality and Climate Committee Terms of Reference as presented in the report dated March 12, 2025, titled "Air Quality and Climate Committee Revised Terms of Reference and 2025 Work Plan"; and
   b) endorse the revised 2025 Air Quality and Climate Committee Work Plan, as presented in the report dated March 12, 2025, titled "Air Quality and Climate Committee Revised Terms of Reference and 2025 Work Plan".

2. That the Air Quality and Climate Committee:

a) receive for information the revised Air Quality and Climate Committee Terms of Reference as presented in the report dated March 12, 2025, titled “Air Quality and Climate Committee Revised Terms of Reference and 2025 Work Plan"; and
b) endorse the revised 2025 Air Quality and Climate Committee Work Plan, as presented in the report dated March 12, 2025, titled “Air Quality and Climate Committee Revised Terms of Reference and 2025 Work Plan", incorporating the requested changes from the Air Quality and Climate Committee.

FINANCIAL IMPLICATIONS

The added priorities in the 2025 Work Plan of the Air Quality and Climate Committee are consistent with the 2025 Budget approved by the MVRD Board on November 1, 2024.

CONCLUSION

The revised Work Plan presented in this report identifies new flood-related priorities for the Air Quality and Climate Committee in 2025 and is consistent with its revised Terms of Reference. Staff recommends that Alternative 1 be approved.

ATTACHMENTS

1. Air Quality and Climate Committee revised Terms of Reference.
2. Air Quality and Climate Committee revised 2025 Work Plan, dated March 5, 2025.

REFERENCES

1. Province of British Columbia. (n.d.). *From Flood Risk to Resilience: a B.C. Flood Strategy to 2035*. Retrieved from https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/integrated-flood-hazard-mgmt/bc_flood_strategy.pdf. Last accessed 2025, March 10.

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

Air Quality and Climate Committee

Terms of Reference

The Air Quality and Climate Committee is the standing committee of the Metro Vancouver Board that provides advice and recommendations on policies, bylaws, plans, programs, budgets and issues related to Air Quality & Climate Action Services.

Committee Responsibilities

Within the scope of the *Board Strategic Plan*, *Clean Air Plan*, *Climate 2050 Strategic Framework,* and *Metro Vancouver Financial Plan*, the Committee provides guidance and oversight to staff on the implementation of the annual work plans and business plans that govern the Air Quality and Climate Action areas of service. Specific Committee responsibilities include the following:

- **Air Quality & Climate Action** – guiding the implementation of the strategies and actions outlined in the *Clean Air Plan,* the *Climate 2050 Strategic Framework,* and the *Climate 2050 Roadmaps*. The Committee monitors the progress made in achieving the *Plan*'*s* vision that "Metro Vancouver is a carbon neutral region where residents experience healthy, clean and clear air", where air quality in the region is continually improving, protecting human health and the environment, and the *Framework's* vision of Metro Vancouver demonstrating bold leadership in responding to climate change, and pursuing a carbon neutral region by 2050. The Committee recommends to the Board changes and updates to the *Plan,* the *Framework,* and the *Roadmaps;*
- **Energy** – overseeing and guiding the efforts of staff in working with municipalities, the private sector, not-for-profit societies and others to develop strategies and programs aimed at achieving the efficient use of energy, promoting the use of alternative energies, and reducing the region's overall carbon footprint, all in an effort to mitigate climate change;
- **Flood Resiliency –** reviewing the risks and impacts of severe flooding events on member jurisdictions and the region, considering regional flood resiliency plans and projects in the region, and identifying roles and responsibilities of all orders of government related to flood management and flood resiliency matters; and
- **Climate Change Adaptation** – developing, for recommendation to the Board, climate change adaptation policies and programs that align with the Climate 2050 vision of ensuring infrastructure, ecosystems and communities are resilient to the impacts of climate change.

Committee Membership and Meetings

The Chair, Vice Chair and members are appointed annually by the Chair of the Metro Vancouver Board. The Committee meets monthly, except for August and December, and holds special meetings as required. A quorum of 50% plus one of the Committee membership is required to conduct Committee business.

Committee Management
The Committee Chair, or in the absence of the Chair the Vice Chair, is the chief spokesperson on matters of public interest within the Committee's purview. For high profile issues the role of spokesperson rests with the Metro Vancouver Board Chair or Vice Chair. On technical matters or in cases where an initiative is still at the staff proposal level, the Chief Administrative Officer or designate is the appropriate chief spokesperson. Where necessary and practical, the Board Chair, Committee Chair and Chief Administrative Officer will confer to determine the most appropriate representative to speak.

The Chief Administrative Officer assigns a Committee Manager for the Committee. The Committee Manager is responsible for coordinating agendas and is the principal point of contact for Committee members.

Air Quality and Climate Committee 2025 Work Plan

1st Quarter Priorities	Status
Air Quality and Climate Committee 2025 Meeting Schedule and Work Plan	Complete
Metro Vancouver's Air Quality Management and Regulation Service	Complete
Amendment to Boilers and Process Heaters Emission Regulation Bylaw	In progress
Appointment of Enforcement Officers	In progress
2nd Quarter Priorities	**Status**
Outcome of BC Utilities Commission Decisions	Pending
Overview of Air Quality Advisory Program and Preparedness for 2025 Season	Pending
Community Wood Smoke Reduction Program - Update and New Retailers	Pending
Amendment to Notice of Bylaw Violation Enforcement and Dispute Adjudication Bylaw	Pending
Amendment to Ticket Information Utilization Bylaw Amendment Bylaw	Pending
Engagement on Amendments to Air Quality Management Fees Bylaw	Pending
Regional Air Contaminant Emissions Inventory and Trends	Pending
Transportation Emissions Policy Updates	Pending
Resilient Buildings Emissions Policy Updates	Pending
Industrial Emissions Policy Updates	Pending
Land Use Resilience Best Practice Guide – Flooding	In progress
Scan of Flood-related Capital Projects in the Metro Vancouver Region – Preliminary Results	In progress
Regional Flood Resiliency Planning Processes – Update	In progress
3rd Quarter Priorities	**Status**
Annual Regional Air Quality Report	Pending
Update to Regional Ground Level Ozone Strategy	Pending
BC Retrofit Accelerator Update	Pending
Approach for Reducing Air Contaminants From Small Gas-Powered Equipment	Pending
Engagement on Managing Air Contaminants from Wood Product Manufacturing	Pending
Climate 2050 Solid Waste Roadmap	In progress
Climate 2050 Water and Wastewater Roadmap	In progress
Climate 2050 Human Health and Well-Being Update	Pending
Climate 2050 Progress Report	Pending
Regional Flood Resiliency Planning Processes – Update	Pending
4th Quarter Priorities	**Status**
Report on 2025 Air Quality Advisory Season	Pending
Report on Corporate Energy and GHG Management	Pending
Update on Thermal Energy Networks in Metro Vancouver	Pending
Advocate for Long-Term Planning for Energy Transition	Pending
Update on Ecosystem Services on Agricultural Lands	Pending
Ecological Health Framework Progress Report	Pending
Annual Budget and Five-Year Financial Plan	Pending
Regional Flood Risk Reduction Priorities Criteria Matrix	Pending
Regional Flood Resiliency Planning Processes – Update	Pending

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Stefanie Ekeli, Regional Planner, Regional Planning and Housing Services

Date: March 21, 2025 Meeting Date: April 4, 2025

Subject: **Land Use Resilience Best Practice Guide: Flooding and Related Hazards – Proposed Scope of Work**

RECOMMENDATION

That the MVRD Board receive for information the report dated March 21, 2025, titled "Land Use Resilience Best Practice Guide: Flooding and Related Hazards – Proposed Scope of Work".

EXECUTIVE SUMMARY

This report outlines the proposed scope of work to develop a Land Use Resilience Best Practice Guide for flooding and related hazards. This Guide is intended as the first in a series of resource guides to support member jurisdictions increase their resilience to various natural hazards. Flooding and related hazards (e.g., landslides) were selected as a priority topic given the increase and intensity of these events in the region in recent years. Each member jurisdiction has unique challenges and may experience different types of flooding and impacts. Exploring flooding at the regional scale is important because impacts can be felt across jurisdictional boundaries. The Guide will provide best practices and a range of policy options that can be applied by members based on their unique local context.

Members of the Regional Planning and Regional Engineers Advisory Subcommittees expressed strong support for the Guide, confirmed that flooding is a priority focus area, and noted that the guide would assist members to deliver their duties for flood management at the local level.

PURPOSE

To provide the scope of work and receive feedback from the Air Quality and Climate Committee and MVRD Board on the Land Use Resilience Best Practice Guide: Flooding and Related Hazards.

BACKGROUND

Policy action 3.4.2(d) of *Metro 2050* directs Metro Vancouver to 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. In addition, policy action 3.4.2(c) directs Metro Vancouver to support the integration of climate change adaptation principles in land use plans.

The development of a series of Land Use Resilience Best Practice Guides will implement these policy actions while supporting member jurisdictions to implement *Metro 2050* policy action 3.4.5, to develop policies that minimize risks associated with natural hazards in existing communities (e.g., flood-proofing policies) and policies that discourage new development in current and future hazardous areas (e.g., hazard-specific Development Permit Area). Finally, the development of Land Use Resilience Best Practice Guides will assist member jurisdictions to advance *Metro 2050* policy

action 3.4.8, to adopt appropriate guidelines and best practices related to climate change and natural hazards.

This report outlines a proposed scope of work to deliver this project.

ADDITIONAL CONTEXT

Flood Risk in Metro Vancouver

This guide is intended as the first in a series of resource guides to support member jurisdictions in planning for various natural hazards with an aim to protecting people, property, and critical infrastructure. Flooding and related hazards (e.g., landslides) were selected as a priority topic.

In spring of 2024, Metro Vancouver completed a Regional Multi-Hazard Mapping project (Reference 1) that identifies both riverine and coastal flooding as two major hazard concerns in the region. In fall of 2024, the Metro Vancouver region experienced this firsthand with record breaking rainfall resulting in localized flooding, road washouts, sewer breaks, and landslides. In addition to human and environmental impacts, intense rainfall events and associated flooding have resulted in significant economic losses in recent years, costing millions of dollars in damages and recovery efforts at the regional scale (billions at the provincial and federal scale), and that number is only expected to increase over time[1]. At the same time, there is increasing pressure to continue to develop, to accommodate a growing population. Given this context, it is a critical time to focus on integrating land use planning and flood risk management processes to help prevent or reduce the social, environmental, and economic impacts associated with flooding. The Land Use Resilience Best Practice Guide is intended as a tool to help member jurisdictions plan, mitigate, and adapt to flooding events in a proactive manner, and to strengthen regional resilience in the face of climate change and increasing hazard risk.

Flood Risk Governance in British Columbia

Flood risk governance in British Columbia is multi-faceted and involves a collaborative approach between various levels of government, including provincial, regional, and local governments and First Nations. The provincial government's primary role is to establish and enforce legislation regarding public safety, water use, and land use. The Province also provides overarching guidance and funding programs, while local and regional governments are responsible for land use planning, infrastructure maintenance, and emergency management. First Nations also play a key role in incorporating traditional knowledge and perspectives into flood resilience planning.

In 2024, the Province introduced a new Flood Strategy titled "From Flood Risk to Resilience: a B.C. Flood Strategy to 2035", which outlines the Province's actions to improve flood resilience. Although the Flood Strategy provides high level guidance to improve flood resilience in B.C., key flood management duties are delegated to local governments. The Province also provides the Flood Hazard Area Land Use Management Guidelines as a resource (Reference 2). These guidelines were

[1] Insurance Bureau of Canada. (November 15, 2024). *Insured Damages from October Storms in Southern BC surpass $110 million.* https://www.ibc.ca/news-insights/news/insured-damage-from-october-storms-in-southern-bc-surpass-110-million

created in 2004 and amended in 2018 to consider sea level rise; however, they only establish standards for building setbacks and flood construction levels and there are some key gaps including:

- land use best practices;
- guidance on interpreting floodplain maps and applying the data to land use planning;
- addressing other hazards associated with flooding (e.g., landslides);
- specific guidelines for different types of flooding (e.g., atmospheric river flooding, urban flooding, groundwater flooding, etc.); and
- consideration of equity and vulnerability, particularly related to Indigenous and other communities in low-lying areas who face disproportionate risk of flooding.

The proposed Metro Vancouver Land Use Resilience Best Practice Guide: Flooding and Related Hazards would support local governments, First Nations, and other organizations involved in land development with land use tools and best practices to help address flood management at the local level. Additionally, this Guide can work to coordinate a collaborative approach for enhancing regional flood resilience.

Engagement with Metro Vancouver Advisory Committees

Metro Vancouver staff presented the draft scope of work to the Regional Planning Advisory Committee – Environment and the Regional Engineers Advisory Committee – Climate Protection Subcommittee on February 20th, 2025. The intent was to receive feedback on the proposed scope to ensure it would provide value for members, and to confirm that flooding and related hazards should be priority for the first guide developed. The members expressed strong support for the guide and on the focus on flooding and related hazards, noting that it would be timely to assist members with projects they had underway or planned. Specifically, members identified that the guide would:

- be useful in supporting member jurisdictions develop Development Permit Area (DPA) guidelines specific to flooding and related hazards;
- assist in land use planning processes and decision making;
- assist members in developing resilience strategies;
- highlight the importance and need for appropriate stormwater management infrastructure; and
- be helpful in elevating the importance of climate change in stormwater management planning.

The project scope reflects the input received from advisory committee members. Metro Vancouver staff will continue to engage with member jurisdictions as the project advances to ensure the guide best serves the needs and interests of members.

PROPOSED PROJECT SCOPE

Objectives

The proposed Land Use Resilience Best Practice Guide – Flooding and Related hazards will serve as a resource for member jurisdictions, particularly communities with fewer resources, to strengthen land use policy work. The guide will also provide key land use strategies that can be incorporated into local Development Permit Area guidelines, Official Community Plans, and zoning bylaws,

offering a more regionally coordinated and consistent policy approach to enhancing resilience to flooding and related hazards through local land use planning.

The guide will:

- provide best practices for land use planning to enhance resilience to flooding and related hazards;
- consider multiple types of flooding including sea level rise, riverine, coastal, atmospheric river, groundwater flooding, and stormwater/urban flooding along with related hazards such as landslides and storm surges;
- explore the impacts of flooding (e.g., human health and financial impacts) on different types of land uses, identify the types of development that may or may not be appropriate in identified flood hazard areas, and highlight available land use tools and best practices that are within the BC legislative context to reduce the impacts of flood risk;
- explore how to apply floodplain mapping to land use decision making;
- provide tools to ensure small-scale multi-unit housing developments (as a result of Bill 44) are resilient to flooding and related hazards;
- identify opportunities and best practices to integrate flood management strategies into land use planning processes and policies; and
- provide best practices and tools to complement the Provincial Flood Hazard Area Land Use Management Guidelines.

Key Tasks

It is anticipated that the project will include the following tasks:

- research land use best practices for enhancing flood resilience, in particular looking at what type of development is appropriate for different types, and severity of flood risk;
- engage with member jurisdictions, local First Nations, the Province, and other agencies and partners;
- identify gaps in provincial flood risk guidelines and legislation and potential opportunities to provide further guidance and tools for member jurisdictions;
- review existing local government land use policies and bylaws for mitigating flood risk (e.g., Development Permit Areas, Official Community Plans, Zoning Bylaws, urban design standards) to assess the current state of policies and where further guidance or tools may be most useful;
- understand the extent of which municipalities have current floodplain mapping and the extent to which this data/mapping informs land use decisions;
- identify case studies (e.g., flood hazard DPAs) that demonstrate useful land use strategies for enhancing flood resilience; and
- develop a land use resilience best practice guide for flooding and related hazards with best practices and land use tools to support member jurisdictions and other organizations with land use planning and decision making.

PROJECT TIMELINE

Once approved, a consultant will be retained in the spring of 2025 to provide technical expertise on the best practice research and development of the guidelines. It is estimated that the project will be completed by the end of 2025 and shared out in early 2026. Engagement and periodic project

updates will be provided to member jurisdiction staff and the Air Quality and Climate Committee, Regional Planning Committee and MVRD Board.

ALTERNATIVES

This is an information report, and therefore no alternatives are presented.

FINANCIAL IMPLICATIONS

This work would be completed through a combination of in-house resources and consultants with technical expertise in flooding and hazard management. A budget of $50,000 for consulting services is allocated to this project as part of the MVRD Board-approved 2025 Regional Planning budget.

CONCLUSION

This report provides the proposed scope of work to develop a Land Use Best Practice Guide: Flooding and Related Hazards. This project will research land use best practices for enhancing flood resiliency and create a resource guide for assisting planners and decision makers plan for flooding and related hazards to help protect people, property, and critical infrastructure. The project will also help to implement policy actions from *Metro 2050* and *Climate 2050* by supporting members with best practice resources for natural hazard planning.

ATTACHMENT

1. Presentation re: "Land Use Resilience Best Practice Guide - Flooding and Related Hazards - Proposed Scope of Work", dated April 4, 2025.

REFERENCES

1. Metro Vancouver. (2024, February 12). *Regional Multi-Hazard Mapping Project*. Retrieved from https://metrovancouver.org/boards/RegionalPlanning/RPL-2024-03-08-AGE.pdf#page=10. Last Accessed 2025, March 3.
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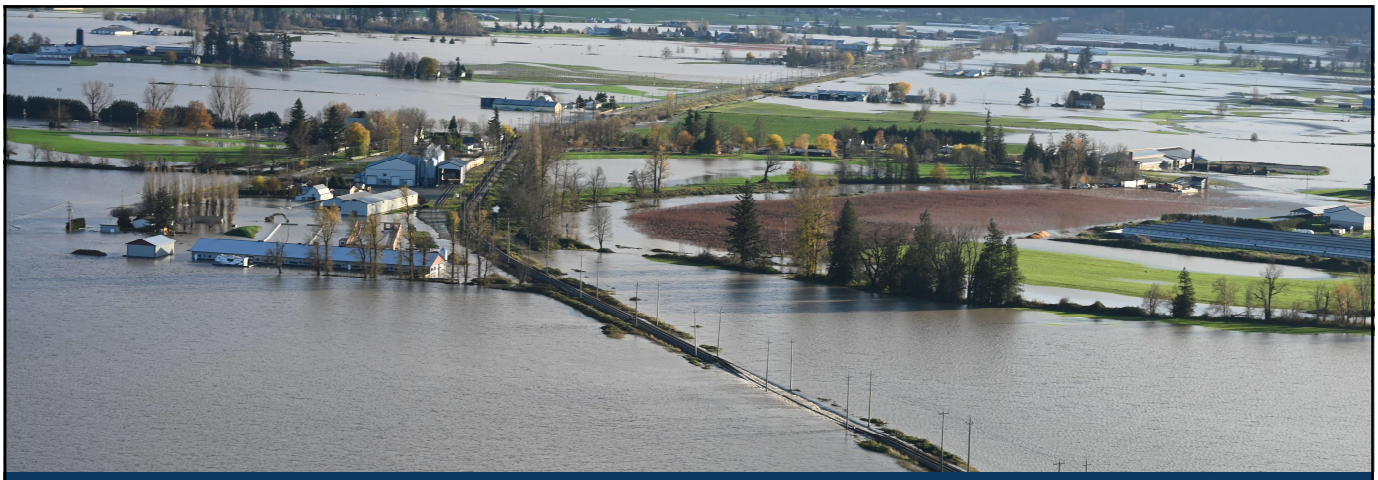

2021 Flooding in Fraser Valley

Land Use Resilience Best Practice Guide: Flooding and Related Hazards – Proposed Scope of Work

Stefanie Ekeli
Regional Planner I

Air Quality and Climate Committee April 4, 2025

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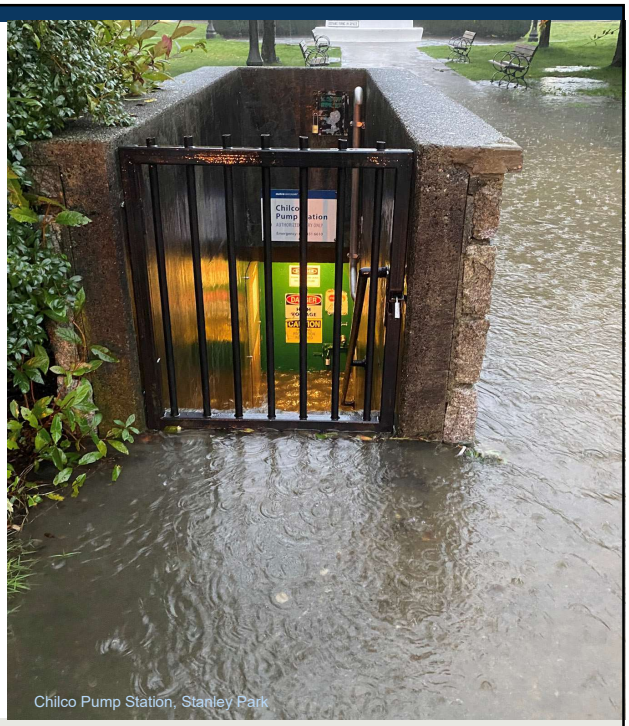
WHY DEVELOP A RESOURCE GUIDE?

- Implements key policy directions from *Metro 2050*
- Land use planning is a critical and proactive tool to address natural hazards
- Riverine and coastal flooding identified as two major hazard concerns
- Increase and intensity of flooding and related hazards in the region in recent years
- Opportunity for more regionally coordinated and consistent policy approach to enhancing resilience to flooding



Chilco Pump Station, Stanley Park

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BENEFITS

- Support member jurisdictions in developing hazard DPA guidelines and land use planning
- Consider local and regional impacts of multiple types of flooding and related hazards
- Support regional emergency management objectives
- Provide tools for adequate stormwater management in densifying areas

SCOPE & OBJECTIVES

- Research land use best practices for flooding and related hazards applicable within BC context
- Consider multiple types of flooding and associated hazards
- Research impacts of flooding on different land uses and appropriate types of development
- Consider stormwater management strategies for densifying areas
- Identify opportunities to enhance local land use policies and bylaws
- To understand data availability and relevance
- Complement the Province's Flood Hazard Area Land Use Management Guidelines and provide further tools and resources for member jurisdictions

Atmospheric River, October 2024

Questions?

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Edward Nichol, Senior Planner, Regional Planning and Housing Services

Date: March 21, 2025 Meeting Date: April 4, 2025

Subject: **2025 Regional District Sustainability Innovation Fund Application: Regional-Scale Hazard, Risk, and Vulnerability Analysis**

RECOMMENDATION

That the MVRD Board approve allocation from the Regional District Sustainability Innovation Fund for the project "Metro Vancouver Regional-Scale Hazard, Risk, and Vulnerability Analysis (HRVA)" for $250,000 for 2025 and 2026 for a total of $500,000.

EXECUTIVE SUMMARY

This report presents the Regional-Scale Hazard, Risk, and Vulnerability Analysis (HRVA) project recommended for funding through the Regional District Sustainability Innovation Fund, totaling $500,000 over two years. The proposed HRVA project involves leading and coordinating a regional-scale risk assessment specific to the Metro Vancouver region. Given the unique challenges of the region and the interface of hazardous areas across jurisdictional boundaries there is a critical need for coordination on hazard and risk work. A regional HRVA approach would benefit member jurisdictions, Metro Vancouver, and other regional partners and support an efficient and effective response to new legislative risk assessment requirements from the Province. New legislation will result in all 23 member jurisdictions completing individual risk assessments and undertaking engagement with project partners within a similar timeframe; Metro Vancouver is well positioned to provide regional data and analysis and play a coordinating role to save member jurisdictions time and money.

A regional HRVA would deliver a robust understanding of hazards, risks, and vulnerabilities specific to the region and strategies to address them, a coordinated regional resilience network to convene partners, and critical information to support land use planning, climate action, and emergency management efforts.

PURPOSE

To present the Regional-Scale Hazard, Risk, and Vulnerability Analysis project recommended for funding through the Regional District Sustainability Innovation Fund for consideration by the Air Quality and Climate Committee and the MVRD Board.

BACKGROUND

At its February 21, 2025 meeting, the MVRD Board re-affirmed support for the Sustainability Innovation Fund for 2025 and 2026, and discussed how applications would be evaluated on a case-by-case basis. The MVRD Board is responsible for overseeing the Regional District Sustainability Innovation Fund and reviewing and approving funding for projects from the Regional District functions. The Air Quality and Climate Committee is responsible for reviewing Regional District

Sustainability Innovation Fund applications that fall within the Terms of Reference of the Committee and making recommendations to the MVRD Board. Staff review and evaluate all proposals that are submitted for consideration. This report overviews the proposal for a Regional Hazard, Risk, and Vulnerability Analysis.

In addition to the application summarized in this report, three applications to the Water Sustainability Innovation Fund will be considered for recommendation to the GVWD Board by the Water Committee at an upcoming meeting.

REGIONAL HAZARD AND RISK CONTEXT

Metro Vancouver is situated on the Fraser River delta, amongst many forested areas and steep slopes, in one of the most seismically active zones in Canada. As a result, the region is susceptible to a variety of natural hazards, including earthquakes, wildfires, landslides, and floods. Climate change is already affecting the region, and the impacts are projected to become more frequent and severe over time, increasingly affecting the communities, infrastructure, and natural environment. Climate change can also amplify the impacts of natural hazards; for instance, sea level rise can increase the severity of coastal floods, heavier rainfall events can influence the likelihood of floods and landslides, and warmer temperatures combined with longer drought periods can increase the risk of wildfires. In a high-probability hazard scenario, approximately 63% of Metro Vancouver's land base would be susceptible to at least one of the following: earthquake, wildfire, coastal flood, or riverine flood (Reference 1).

Understanding the region's risks and vulnerabilities to hazard is critical to inform land use, climate action, and emergency management planning. For instance, as noted in the 2025 report "Close to Home" from the Canadian Climate Institute (Reference 2), building homes in hazardous areas can result in significant threats to safety and costs to taxpayers and governments due to damages, higher insurance premiums, and tax-funded disaster recovery efforts – whereas informed planning efforts that incorporate hazard and risk information can lead to proactive risk avoidance or reduction measures. As Canada works to meet ambitious housing targets, an estimated 5.8 million new homes must be built by 2030. However, under current policies, many of these homes could be located in high-risk areas vulnerable to hazards such as flooding and wildfires. In addition to existing homes, approximately 370,000 new homes built by 2030 in Canada could be in areas of very high flood hazard or high wildfire hazard, and a significant portion of this risk is in British Columbia. In a worst-case scenario, this could result in economic losses of $2 B per year in BC alone, with a projected $1.1B of that associated with flooding events, particularly in the Lower Mainland. The report calls on the urgent need for governments at all levels to enact policy changes to avoid costly and disruptive disasters in the future.

ALIGNMENT WITH ORGANIZATIONAL POLICIES AND PRIORITIES

A regional HRVA project would help to deliver on key organizational plans and objectives. The *Board Strategic Plan 2022-2026* (Reference 3) vision is "Metro Vancouver embraces collaboration and innovation in providing sustainable regional services that contribute to a livable and *resilient* region and a healthy natural environment for current and future generations." This plan includes both "climate action" and "resilient services and infrastructure" as strategic priorities. "Climate action", "resilience", and "collaboration and strong partnerships" are also noted as pillars guiding the

organization's work. These principles are key components of the proposed HRVA project. The *Board Strategic Plan 2022-2026* also contains the following priority actions:

- To maintain Metro Vancouver's regional role in emergency preparedness through continued delivery of services, which includes identifying new threats due to climate change, including wildfires and flooding, and assessing the value of proactive measures;
- To work closely with member jurisdictions, TransLink, First Nations, the Province, and other regional agencies and organizations to advance *Metro 2050's* goals, strategies, and policy actions (*Metro 2050* includes a key strategy to improve resilience to climate change impacts and natural hazards); and
- To continue to develop and implement *Climate 2050* Roadmaps, including critical climate adaptation actions.

Metro 2050 prioritizes enhancing the region's resilience to natural hazards. Specifically, Action 3.4.2(a) calls for Metro Vancouver and its member jurisdictions to collaborate to develop and disseminate comprehensive information and data pertaining to hazards, risks, and vulnerabilities (Reference 4). The proposed project directly aligns with and supports this objective, while also assisting member jurisdictions in achieving the implementation goals outlined in Actions 3.4.5 and 3.4.6 (Reference 5).

Six *Climate 2050* Roadmaps (Reference 6), endorsed by the MVRD Board, contain actions to complete a climate vulnerability assessment: *Nature and Ecosystems Roadmap* action 5.2; *Buildings Roadmap* action 6.4; *Transportation Roadmap* action 6.5; *Industry and Business Roadmap* action 5.1; *Energy Roadmap* action 5.1; and *Agriculture Roadmap* action 3.1.

Project History

In 2022, Metro Vancouver developed a Natural Hazard Data Inventory (Reference 7). The intent of this work was to provide a high-level desktop analysis of available natural hazard and climate change impact data across the region. Building on this work, Metro Vancouver completed a Regional Multi-Hazard Mapping Project in 2023 (Reference 1) which shows the extent of four selected hazards (i.e., coastal flood, riverine flood, earthquake, and wildfire) across the region under various scenarios. While the mapping did not include an assessment of exposure, vulnerability, or risk, it provides an essential foundation to support future regional-scale analysis. In 2024, Metro Vancouver began work on a Regional HRVA Options Assessment project to identify how a coordinated regional risk assessment approach could be scoped, most effectively provide value to member jurisdictions and Metro Vancouver, and maximize efficiencies across departments and organizations. The results of this work will help inform the Regional HRVA project.

REGIONAL-SCALE HAZARD, RISK, AND VULNERABILITY ANALYSIS

The proposed project (Attachment 1) is to develop a regional-scale HRVA, or similar type of assessment. The Province has been working to develop a provincial-scale disaster and climate risk and resilience assessment (DCRRA) (Reference 8), and intends to develop sub-regional risk assessments at a high level; however, this scale of analysis is anticipated to be broader than the regional district level, and therefore would not be suitable for Metro Vancouver's unique regional and local needs. The Province is also developing new regulations associated with the risk

assessment requirements for local authorities and critical infrastructure owners in the *Emergency and Disaster Management Act.* In light of this, it is a critical time to begin the extensive work needed to respond to the forthcoming regulations, and to tailor an approach that is specific to the unique needs of this region. The *Emergency and Disaster Management Act* includes requirements for local authorities to include risk assessments that incorporate, among other criteria, available Indigenous and local knowledge and the potential impacts from expected climate change (Reference 9). These requirements will result in all 23 member jurisdictions completing individual risk assessments and undertaking engagement with project partners within a similar timeframe; Metro Vancouver is well positioned to provide regional data and play a coordinating role to save member jurisdictions time and money, while also providing a critical regional-scale analysis. A collaborative, regional-scale risk assessment process will support local and regional resilience efforts, identify strategic priorities, maximize economies of scale, leverage existing risk assessment work across governments and agencies, and minimize duplication of efforts and engagement fatigue across the region. The regional HRVA will involve extensive technical work, as well as substantial engagement and coordination with both internal Metro Vancouver departments (e.g., Protective Services and Emergency Management, Air Quality and Climate Action Services, Water Services, Liquid Waste Services) and external partners and agencies to create mutually supportive outcomes.

ALIGNMENT WITH KEY SUSTAINABILITY INNOVATION FUND CRITERIA

Innovation/Continuous Improvement

Risk assessments are typically carried out at the local or provincial scale. The Metro Vancouver region contains over 50% of the province's population, the majority of which is susceptible to multiple natural hazards and climate change impacts. Given the unique challenges of the region, it is critical to understand the interface of hazardous areas across jurisdictional boundaries and coordinate on hazard and risk work across Metro Vancouver. Regional-scale analysis and coordination is vital to effectively address the specific needs of our region, but this approach will not be achieved at the Provincial or local government level. A regional HRVA is proposed to benefit member jurisdictions, Metro Vancouver, and other regional partners by streamlining and coordinating work to respond to new legislative risk assessment requirements from the Province. This innovative and collaborative approach will support strategic local and regional resilience efforts, maximize economies of scale, and minimize duplication of effort.

The project will involve collaboration with member jurisdictions and other organizations and agencies across the region as well as across Metro Vancouver departments, helping to coordinate and support resilience mandates, policies, and project work across the organization. The HRVA is intended to be a dynamic document that can be continuously reviewed and improved as new information emerges. Given that a regional HRVA will require extensive time, technical analysis, and coordination/engagement with a range of project partners, substantial funding is required; the Sustainability Innovation Fund could support a much more substantial, comprehensive and collaborative approach than what could be delivered through the regular Regional Planning budget process alone.

Project Benefits and Outcomes

Tangible benefits and outcomes are anticipated to include:

- a robust understanding of hazards, risks, and vulnerabilities specific to the Metro Vancouver region, and potential strategies to address them will be identified and prioritized;
- a coordinated regional resilience network will be established to convene partners, share data and information, and capitalize on project efficiencies;
- support will be provided for member jurisdictions to meet the risk assessment requirements of the *Emergency and Disaster Management Act* (e.g. through information sharing or establishment of a multijurisdictional emergency management organization);
- work from project partners will be identified and leveraged, minimizing duplication of efforts and engagement fatigue;
- results will inform and support regional and local land use planning, climate action, and emergency management efforts; and
- stronger partnerships and relationships will be established with organizations and agencies throughout the region – these partnerships are vital for a resilient and coordinated approach to planning.

Potential Project Partners

The regional-scale HRVA project will require close collaboration with external partners. Project partners are anticipated to participate in a Working Group in order to provide insight, identify priorities, and ensure usefulness at local and regional scales. Project partner representatives (to be confirmed) are *anticipated* to include, but are not limited to:

- Member jurisdictions;
- Local First Nations;
- TransLink;
- Integrated Partnership for Regional Emergency Management (IPREM);
- Vancouver Airport Authority;
- Vancouver Fraser Port Authority;
- Province of BC (Ministry of Emergency Management and Climate Readiness; Climate Action Secretariat);
- Emergency Planning Secretariat;
- Fraser Health;
- Vancouver Coastal Health;
- Metro Vancouver internal department representatives;
- Fraser Basin Council; and
- Agricultural Land Commission.

ALTERNATIVES

1. That the MVRD Board approve allocation from the Regional District Sustainability Innovation Fund for the project “Metro Vancouver Regional-Scale Hazard, Risk, and Vulnerability Analysis (HRVA)” for $250,000 for 2025 and 2026 for a total of $500,000.
2. That the MVRD Board receive for information the report dated March 21, 2025 titled “2025 Regional District Sustainability Innovation Fund Application: Regional-Scale Hazard, Risk, and Vulnerability Analysis”.

FINANCIAL IMPLICATIONS

If the Board approves Alternative 1, $500,000 will be disbursed from the Regional District Sustainability Innovation Fund over two years to support this project. The Fund has sufficient budget to support Alternative 1. The approved application will be incorporated into the Regional Planning work plan, budget, and five year financial plan.

CONCLUSION

The MVRD Board is responsible for overseeing the Regional District Sustainability Innovation Fund and reviewing and approving funding for projects from the Regional District functions. The Air Quality and Climate Committee is responsible for reviewing Regional District Sustainability Innovation Fund applications that fall within the Terms of Reference of the Committee and making recommendations to the MVRD Board. This report presents the proposed project for a Regional-Scale Hazard, Risk, and Vulnerability Analysis (HRVA). This project would involve leading and coordinating a regional-scale risk assessment specific to the Metro Vancouver region. This collaborative approach will support local and regional resilience efforts, maximize economies of scale, minimize duplication of effort, and strategically identify priorities. The regional HRVA will involve extensive technical work, as well as substantial engagement and coordination with both internal Metro Vancouver departments and external partners and agencies to create mutually supportive outcomes. The funding request is a total of $500,000 over two years.

ATTACHMENTS

1. "2025 Sustainability Innovation Fund Application - Regional District Executive Summary", dated March 13, 2025.
2. Presentation re: "Regional-Scale Hazard, Risk, and Vulnerability Analysis", dated April 4, 2025.

REFERENCES

1. Metro Vancouver. (2024, March 8). *Metro Vancouver Regional District Regional Planning Committee Meeting Agenda*. *Report E1: Regional Multi-Hazard Mapping Project*. Retrieved from https://metrovancouver.org/boards/RegionalPlanning/RPL-2024-03-08-AGE.pdf#page=10. Last accessed 2025, March 13.
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3. Metro Vancouver. (2022). *Board Strategic Plan 2022-2026*. Retrieved from https://metrovancouver.org/about-us/Documents/board-strategic-plan-update-2023.pdf. Last accessed 2025, March 12.
4. Metro Vancouver. (2022, February). *Metro 2050 Regional Growth Strategy*. *Action 3.4.2 a)*. Retrieved from https://metrovancouver.org/services/regional-planning/Documents/metro-2050.pdf#page=73. Last accessed 2025, March 12.
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7. Metro Vancouver. (2023, March 10). *Metro Vancouver Regional District Regional Planning Committee Meeting Agenda*. *Report 5.4: Natural Hazard Data Inventory*. Retrieved from https://metrovancouver.org/boards/RegionalPlanning/RPL_2023-Mar-10_AGE.pdf#page=89. Last accessed 2025, March 13.
8. Province of British Columbia. (2024, July 25). *Disaster and Climate Risk and Resilience Assessments*. Retrieved from https://www2.gov.bc.ca/gov/content/environment/climate-change/adaptation/disaster-and-climate-risk-and-resilience-assessment. Last accessed 2025, March 13.
9. *Emergency and Disaster Management Act,* SBC 2023, c 37 at s 51, as it appeared on 14 March 2025, *https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/23037#section51*.

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2025 Sustainability Innovation Fund Application: Regional District Executive Summary
March 13, 2025

Project title:

Metro Vancouver Regional-Scale Hazard, Risk, and Vulnerability Analysis (HRVA)

Amount requested:

$500,000

Purpose:

To develop a regional-scale Hazard, Risk, and Vulnerability Analysis (HRVA), or similar assessment.

Project objectives:

To lead and develop a coordinated, regional-scale risk assessment that supports local and regional resilience efforts, informs decision-making, fills implementation gaps, leverages existing work completed to date, and minimizes duplication of efforts.

Contributions to regional sustainability:

The Regional HRVA project will implement *Metro 2050* action 3.4.2 a) and will also assist member jurisdictions in achieving their policy objectives for actions 3.4.5 and 3.4.6. All six of the MVRD Board-endorsed *Climate 2050* Roadmaps contain an action to complete a climate vulnerability assessment, and these actions will be supported by the regional HRVA.

The HRVA process involves an assessment of hazards, risks, vulnerabilities, as well as options to address these challenges. Environmental, social, and financial factors will be assessed as key components of the HRVA (for instance, by identifying social, economic, physical, and environmental vulnerabilities associated with natural hazards and climate change impacts, and the consequence of potential impacts under several categories). The HRVA can also identify existing and new mitigation measures to minimize risk under various categories.

Innovation element:

Risk assessments are typically carried out at the local or provincial scale. A gap exists at the regional level, and collaboration is essential given the unique geography and governance structure of Metro Vancouver. The regional HRVA represents an innovative approach that will incorporate the new requirements from the *Emergency and Disaster Management Act* (including the requirement to partner with First Nations and incorporate future climate change when developing risk assessments). The project will involve collaboration across Metro Vancouver departments to coordinate and support resilience mandates, policies, and project work across the organization. This approach will maximize efficiencies and minimize the duplication of efforts. The HRVA is intended to be a dynamic document that can be continuously reviewed and improved as new information emerges. Given that a regional HRVA will require extensive time, technical analysis, and coordination/engagement with a range of project partners, substantial funding is required.

Tangible benefits and outcomes:

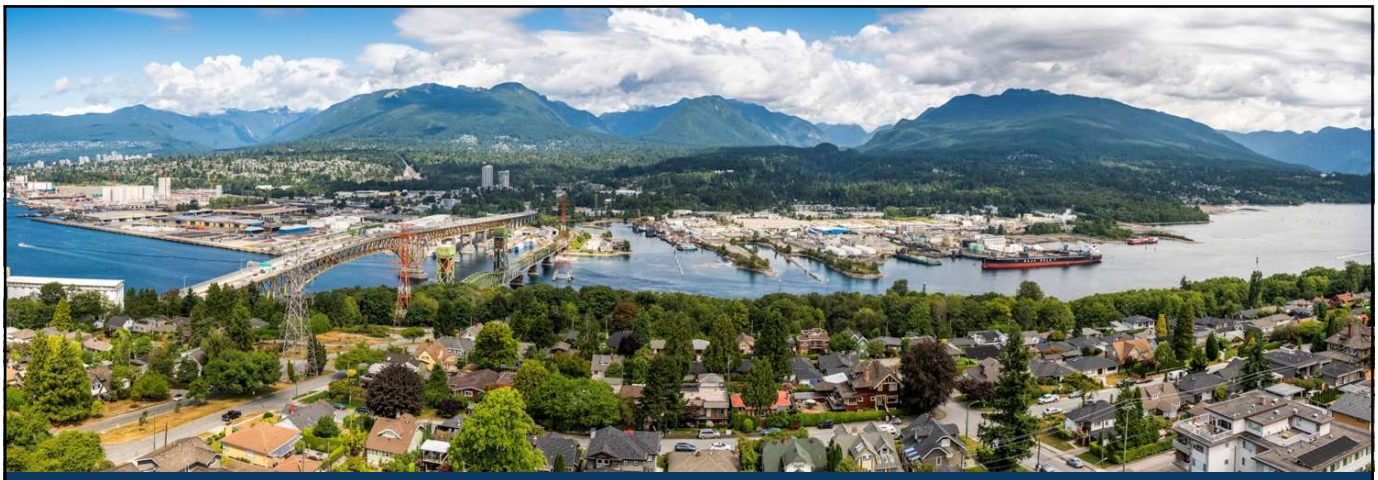
Tangible benefits and outcomes are anticipated to include:

- A robust understanding of hazards, risks, and vulnerabilities specific to the Metro Vancouver region, and potential strategies to address them will be identified and prioritized.
- A coordinated regional resilience network will be established to capitalize on project efficiencies, fill implementation gaps, share data and information, and convene partners.
- Support will be provided for member jurisdictions to meet the risk assessment requirements of the *Emergency and Disaster Management Act* (e.g. through information sharing or establishment of a multijurisdictional emergency management organization).
- Work from project partners will be identified and leveraged, minimizing duplication of efforts and engagement fatigue.
- Results will support regional and local land use planning, climate action, and emergency management efforts.
- Stronger partnerships and relationships will be established with other organizations and agencies.

Members and other partners:

The HRVA project will require close collaboration with external partners. Project partners (once confirmed) are anticipated to include, but not be limited to:

- Member jurisdictions
- In-region First Nations
- TransLink
- Integrated Partnership for Regional Emergency Management (IPREM)
- Vancouver Airport Authority
- Vancouver Fraser Port Authority
- Province of BC (Ministry of Emergency Management and Climate Readiness; Climate Action Secretariat)
- Emergency Planning Secretariat
- Fraser Health
- Vancouver Coastal Health
- Metro Vancouver internal department representatives (T.B.D.)
- Fraser Basin Council
- Agricultural Land Commission



Regional-Scale Hazard, Risk, and Vulnerability Analysis

2025 REGIONAL DISTRICT SUSTAINABILITY INNOVATION FUND APPLICATION

Edward Nichol
Senior Planner, Regional Planning and Housing Services

Air Quality and Climate Committee | April 4, 2025
74855277

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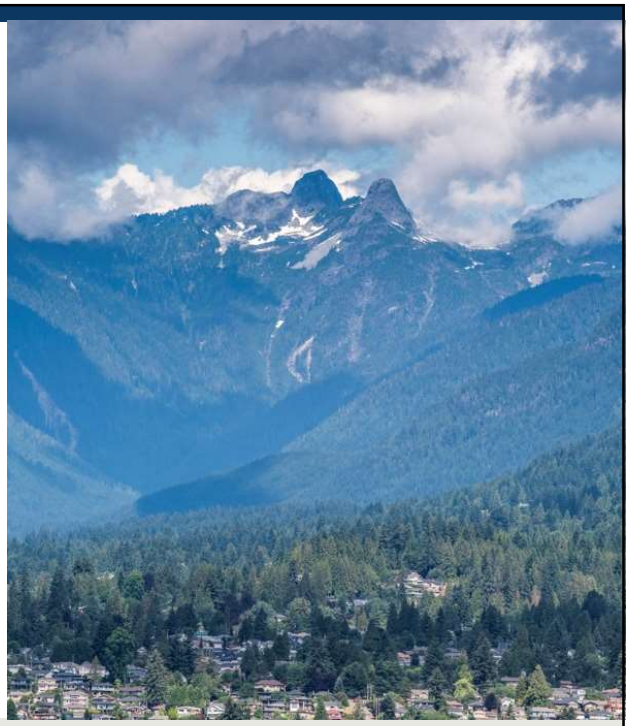
REGIONAL HRVA

What Is It?

A regional-scale **Hazard, Risk, and Vulnerability Analysis** would assess hazards, risks, and vulnerabilities for the Metro Vancouver region and recommendations for action to reduce these risks.

A coordinated approach – within Metro Vancouver and with members, external partners.



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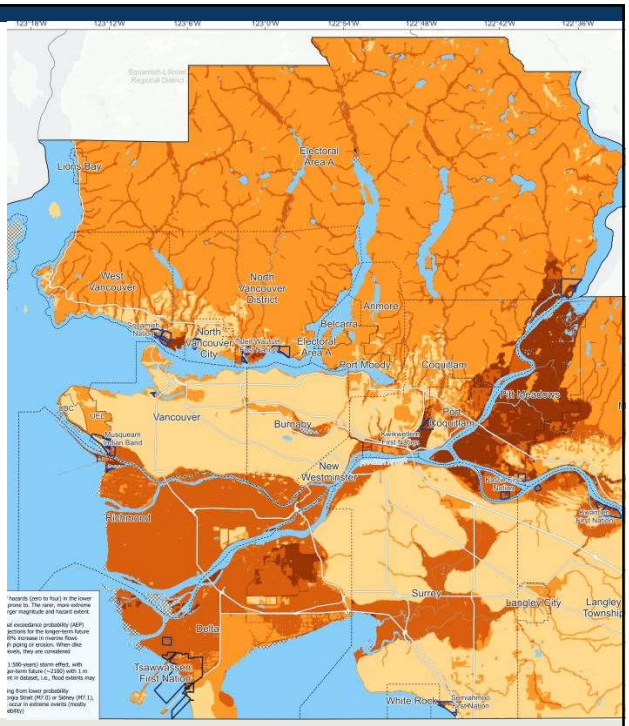
PROJECT WORK TO DATE

- **2022:** Hazard Data Inventory
- **2023:** Multi-Hazard Mapping
  - GIS maps, PDF maps, technical report
  - Four hazards: coastal flood, riverine flood, wildfire, earthquake
  - Single + multi-hazard



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PROJECT RATIONALE

- Build on multi-hazard mapping results
- Address current gap and lack of coordination re regional risk
- Cross-boundary hazards and risks
- Legislative drivers (i.e., *Emergency and Disaster Management Act*, *EDMA*)
- Key roles: Analyzing data, convening
- *Metro 2050* and *Climate 2050* policy direction

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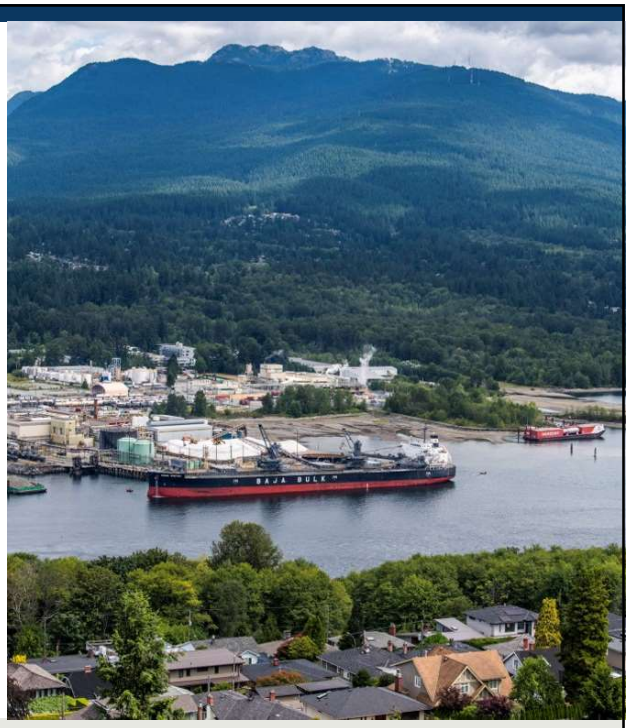
ANTICIPATED BENEFITS

- Understand hazards, risks, and vulnerabilities and strategies to address
- Coordinated network, established partnerships on resilience work
- Support for members and MV to meet new provincial requirements (*EDMA)*
- Maximize efficiencies, minimize duplication of efforts
- Inform and support regional and local land use planning, climate action, and emergency management efforts



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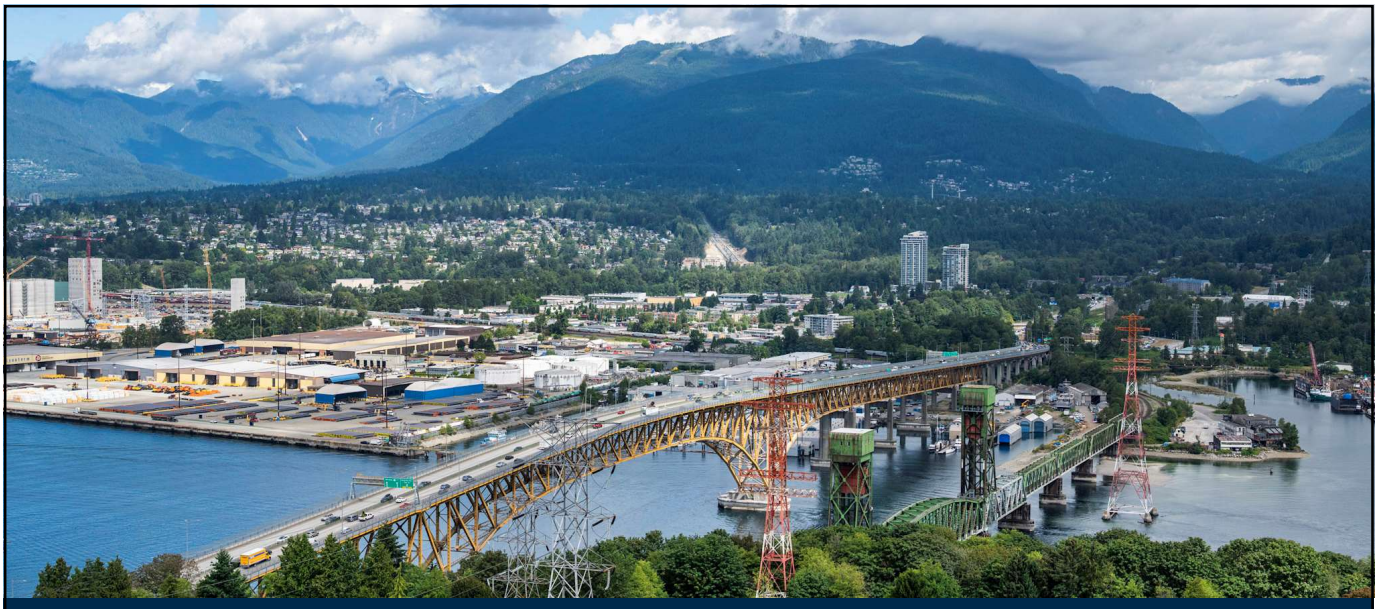

Thank you

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Together we make our region strong

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Julie Saxton, Program Manager, Enforcement and Regulation Air Quality, Environmental Regulation and Enforcement

Date: February 19, 2025 Meeting Date: April 4, 2025

Subject: **Appointment of Enforcement Officer**

RECOMMENDATION

That the MVRD Board, pursuant to the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008* and the *Environmental Management Act,* appoint Metro Vancouver employee Gabriel de Andrade Fazioni as an officer.

EXECUTIVE SUMMARY

Recent changes in staffing have resulted in a need to update a staff appointment as Metro Vancouver Regional District (MVRD) Board-designated officer under the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008*, the *Environmental Management Act*. Staffing changes are a result of recruitment for a vacant position following a retirement. Staff recommend that the MVRD Board appoint staff accordingly.

PURPOSE

To appoint a Metro Vancouver employee as a Board-designated officer.

BACKGROUND

Metro Vancouver's Air Quality Regulatory Program supports the goals of the *Clean Air Plan* by promoting compliance with air quality management bylaws and regulating the discharge of air contaminants.

Employment status changes for Metro Vancouver environmental regulatory staff have resulted in a need to update staff appointments to ensure appropriate authority to advance air quality management goals. Staffing changes are a result of recruitment for a vacant position following a retirement. Section 31 of the *Environmental Management Act* and the *Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008* grant authority to Board-designated officers.

ROLE OF ENFORCEMENT OFFICERS

Officers may enter property, inspect works, and obtain records and other information to promote compliance with the *Environmental Management Act* and MVRD air quality management bylaws.

ALTERNATIVES

1. That the MVRD Board, pursuant to the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008* and the *Environmental Management Act,* appoint Metro Vancouver employee Gabriel de Andrade Fazioni as an officer.

2. That the MVRD Board receive for information the report titled "Appointment of Enforcement Officer", dated February 19, 2025.

FINANCIAL IMPLICATIONS

There are no financial implications as the MVRD appointee is already on staff.

CONCLUSION

Recent changes in staffing have resulted in a need to update staff appointments as MVRD Board-designated officers under the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008*, the *Environmental Management Act*. Staff recommend that the MVRD Board adopt Alternative 1.

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Esther Bérubé, Division Manager, Air Quality Bylaw and Regulation Development, Air Quality and Climate Action Services
Julie Saxton, Program Manager, Enforcement and Regulation - Air Quality, Environmental Regulation and Enforcement

Date: March 17, 2025 Meeting Date: April 4, 2025

Subject: **MVRD Notice of Bylaw Violation Enforcement and Dispute Adjudication Amendment Bylaw No. 1410, 2025**

RECOMMENDATION

That the MVRD Board:

a) give first, second, and third reading to *Metro Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Amendment Bylaw No. 1410, 2025*; and
b) pass and finally adopt *Metro Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Amendment Bylaw No. 1410, 2025*.

EXECUTIVE SUMMARY

Metro Vancouver can use a range of tools to promote compliance with its air quality bylaws. The *Greater Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Bylaw No. 1117, 2010* (*GVRD Bylaw No. 1117, 2010*) allows designated contraventions to be addressed through a notice of bylaw violation as an enforcement measure for infractions. This report proposes amendments to *GVRD Bylaw No. 1117, 2010* to update the contraventions of *GVRD Air Quality Management Bylaw No. 1082, 2008* (*GVRD Bylaw No. 1082, 2008*), designated in Schedule B of *GVRD Bylaw No. 1117, 2010*, to make it possible to use notices of bylaw violation as an additional tool to deal with contraventions of pollution prevention orders and pollution abatement orders. Notices of bylaw violation use a simple, cost-effective process to take initial enforcement action for designated minor bylaw infractions.

PURPOSE

To propose amendments to *GVRD Bylaw No. 1117, 2010*, described in *MVRD Notice of Bylaw Violation Enforcement and Dispute Adjudication Amendment Bylaw No. 1410, 2025* (*MVRD Amendment Bylaw No. 1410, 2025*) attached to this report, for adoption by the MVRD Board.

BACKGROUND

The 2022-2026 Board Strategic Plan, updated in 2023, identifies the protection of human and environmental health as strategic direction that guides Metro Vancouver's work. Pollution prevention orders and pollution abatement orders, as specified in *GVRD Bylaw No. 1082, 2008* (Reference 1), are used to protect human and environmental health.

This report proposes amendments to *GVRD Bylaw No. 1117, 2010* to update the designated contraventions of *GVRD Bylaw No. 1082, 2008* to enable the enforcement of pollution prevention orders and pollution abatement orders using notices of bylaw violation.

BYLAW AMENDMENTS

Metro Vancouver authorizes the controlled discharge of air contaminants through an air quality regulatory framework as described in *GVRD Bylaw No. 1082, 2008*. This bylaw includes provisions for site-specific permits, approvals, and orders as well as emission regulations that apply to sectors or similar sources. Metro Vancouver promotes compliance with air quality requirements using tools such as education, warnings, notices of bylaw violation, and municipal ticket information. Non-punitive education and warnings are preferred methods before stronger enforcement measures are administered. *GVRD Bylaw No. 1117, 2010*, as amended, authorizes officers to issue notices of bylaw violation with associated penalties for designated minor bylaw infractions, as an initial form of enforcement. Notices of bylaw violation offer an effective and efficient alternative to legal action through the BC judicial system by providing a mechanism for addressing disputes through internal screening followed, if necessary, by adjudication as described in the BC *Local Government Bylaw Notice Enforcement Act*.

The amendments to Schedule B in *GVRD Bylaw No. 1117, 2010* proposed under *MVRD Amendment Bylaw No. 1410, 2025* designate contraventions of pollution prevention orders and pollution abatement orders made under *GVRD Bylaw No. 1082, 2008* as contraventions that may be dealt with by notices of bylaw violation. Pollution prevention orders and pollution abatement orders can be issued under *GVRD Bylaw No. 1082, 2008* to put requirements in place to prevent and mitigate pollution when it may occur, has occurred, or is likely to occur in the future.

As *GVRD Bylaw No. 1117, 2010* and its amendments also set out contraventions related to the Regional Parks function of Metro Vancouver, a separate report seeking Board adoption of amendments regarding Schedule A is being considered by the Regional Parks Committee on April 2, 2025.

Pollution prevention orders

The BC *Environmental Management Act* and *GVRD Bylaw No. 1082, 2008* define pollution as the presence in the environment of substances or contaminants that substantially alter or impair the usefulness of the environment. *GVRD Bylaw No. 1082, 2008* authorizes the district director to order persons to take steps to prevent pollution that may arise from an activity or operation that is likely to release an air contaminant. This applies to persons who may be involved in the possession, control, or release of the substance. Pollution prevention orders may include requirements to:

- provide information to the district director;
- carry out tests, surveys, or other assessments, and share results;
- implement works or measures reasonably necessary to prevent pollution; or
- implement repairs or adjustments reasonably necessary to prevent pollution.

Pollution abatement orders

If the district director is satisfied that a substance is causing pollution or has caused pollution and is likely to cause pollution in the future, the district director may order one or more persons involved

in the possession, control, or release of the substance to take steps to assess, control, abate, or stop the pollution. The district director may also require the persons to convey information about the pollution to Metro Vancouver.

Notices of bylaw violation are enforcement measures that apply the balance of probabilities as the standard of proof and offer a deterrent to non-compliance with requirements put in place to control air emissions and protect human and environmental health. The amendments to *GVRD Bylaw No. 1117, 2010* proposed under *MVRD Amendment Bylaw No. 1410, 2025* would improve Metro Vancouver's ability to achieve compliance with pollution prevention orders and pollution abatement orders efficiently and effectively when non-punitive measures have failed.

ALTERNATIVES

1. That the MVRD Board:
   a) give first, second, and third reading to *Metro Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Amendment Bylaw No. 1410, 2025*; and
   b) pass and finally adopt *Metro Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Amendment Bylaw No. 1410, 2025*.

2. That the MVRD Board receive for information the report titled "*MVRD Notice of Bylaw Violation Enforcement and Dispute Adjudication Amendment Bylaw No. 1410, 2025*", dated March 17, 2025.

FINANCIAL IMPLICATIONS

If the Board approves Alternative 1, officers will be able to issue notices of bylaw violation and associated penalties as enforcement action on pollution prevention orders and pollution abatement orders.

CONCLUSION

GVRD Notice of Bylaw Violation Enforcement and Dispute Adjudication Bylaw No. 1117, 2010 (GVRD Bylaw No. 1117, 2010) authorizes Metro Vancouver officers to issue notices of bylaw violation as a measure to enforce compliance with designated contraventions of Metro Vancouver's air quality regulatory framework, including *GVRD Air Quality Management Bylaw No. 1082, 2008* (GVRD Bylaw No. 1082, 2008), or to enforce minor infractions. Notices of bylaw violation provide an effective and efficient form of enforcement, where disputes are screened internally, and then heard and resolved through an adjudication process instead of the Provincial judicial system. The proposed amendments to *GVRD Bylaw No. 1117, 2010* designate contraventions of pollution prevention orders and pollution abatement orders as contraventions that may be dealt with by notices of bylaw violation. Staff recommend Alternative 1, to adopt *MVRD Amendment Bylaw No. 1410, 2025* that amends the designated bylaw infractions and penalties in *GVRD Bylaw No. 1117, 2010* to make it possible to deal with contraventions of pollution prevention orders and pollution abatement orders by notices of bylaw violation.

ATTACHMENT

1. *Metro Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Amendment Bylaw No. 1410, 2025*.

REFERENCE

1. Metro Vancouver Regional District, Bylaw No. 1082, 2008, *GVRD Air Quality Management Bylaw*, *Unofficial Consolidation, 2020.* Retrieved from https://metrovancouver.org/boards/Bylaws/MVRD_Bylaw_1082_Consolidated.pdf. Last accessed 2025, March 17

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METRO VANCOUVER REGIONAL DISTRICT
BYLAW NO. 1410, 2025
A bylaw to amend Greater Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Bylaw No. 1117, 2010

WHEREAS:

A. The Board of Directors of the Metro Vancouver Regional District ("the Board") has adopted "Greater Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Bylaw No. 1117, 2010", a bylaw to respect the enforcement of Notices of Bylaw Violation and establish a Bylaw Violation Dispute Adjudication System; and

B. The Board of Directors of the Metro Vancouver Regional District wishes to amend "Greater Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Bylaw No. 1117, 2010."

NOW THEREFORE the Board of the Metro Vancouver Regional District enacts as follows:

Citation

1. The official citation of this bylaw is "Metro Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Amendment Bylaw No. 1410, 2025".

Schedule

2. The following Schedule is attached to and forms part of this bylaw:
    - Schedule "B", Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008.

Amendment of Bylaw

3. "Greater Vancouver Regional District Notice of Bylaw Violation Enforcement and Dispute Adjudication Bylaw No. 1117, 2010" is amended as follows:

    (a) Schedule "B" is deleted and replaced with Schedule "B", which is attached to and forms part of this bylaw.

Read a first, second, and third time this _____ day of _____, _____.

Adopted this _____ day of _____, _____.

Mike Hurley, Chair

Dorothy Shermer, Corporate Officer

Schedule B

Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Section	**Authorized Words or Expressions**	**Discounted Penalty**	**Penalty**	**Late Payment Penalty**	**Compliance Agreement Available**
11(1)	Violation of permit discharge limit or restriction	$375	$500	$500	Yes
11 (4)	Violation of permit monitoring requirement	$190	$250	$310	Yes
11 (5)	Violation of permit record keeping or reporting requirement	$95	$125	$155	Yes
11 (5)	Failure to immediately notify of emission monitoring results that exceed permit limits	$375	$500	$500	Yes
13	Violation of approval monitoring requirement	$190	$250	$310	Yes
13	Violation of approval record keeping or reporting requirement	$95	$125	$155	Yes
28(1)	Violation of pollution prevention order	$375	$500	$500	No
29(1)	Violation of pollution abatement order	$375	$500	$500	No
31	Removing, tampering with or interfering with monitoring equipment	$375	$500	$500	No
33	Failure to provide reasonable access	$290	$375	$460	Yes

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Sara Muir, Air Quality Planner, Air Quality and Climate Action Services
Jeff Carmichael, Division Manager, Business Development, Liquid Waste Services

Date: March 20, 2025 Meeting Date: April 4, 2025

Subject: **Analyzing Thermal Energy Opportunities Across Metro Vancouver**

RECOMMENDATION
That the MVRD Board receive for information the report dated March 20, 2025, titled "Analyzing Thermal Energy Opportunities Across Metro Vancouver".

EXECUTIVE SUMMARY
This report outlines a project to evaluate opportunities for thermal energy networks (TENs) for efficiently heating and cooling buildings in the region and supporting energy resilience. TENs are an evolution of district energy systems that use zero-emissions energy such as waste heat instead of fossil fuel. The study takes a regional approach that enables economies of scale, cross-municipal opportunities and shared learning, and will support members in more detailed studies and policies for TENs in their jurisdictions. Staff from at least 10 municipalities have indicated interest in being involved via an advisory committee and/or engagement activities. Supported with funding from BC Hydro and the Zero Emissions Innovation Centre, the study supports Metro Vancouver's goals to beneficially use recovered energy and advances actions in various strategic plans. Input provided on the project scope by the Air Quality and Climate Committee and MVRD Board will be incorporated.

PURPOSE
To inform the Air Quality and Climate Committee about a project to study opportunities for thermal energy networks (TENs) in Metro Vancouver, in collaboration with funding partners (BC Hydro and the Zero Emissions Innovation Centre) and member jurisdictions.

BACKGROUND
The Metro Vancouver region, and society more broadly, is transitioning to clean, reliable, and resilient energy to power services, buildings, and industries. Member municipalities and utilities are engaged in this transition while grappling with challenges such as scaling electrical infrastructure, limited in-province supplies of renewable natural gas, and adapting to density shifts from new provincial housing legislation, alongside rapid growth and affordability challenges. As a thermal energy provider and regional planning and policy coordinator, Metro Vancouver can support municipalities in addressing these challenges, such as by coordinating regional scale energy studies and advocating for provincial policies.

TENs are a low-carbon, proven solution for heating buildings, which could be scaled up in the region. This study supports efforts to beneficially use recovered energy from utility systems as directed by the Board-approved *Sewage and Waste: Heat Recovery Policy*, and actions in *Climate 2050 Roadmaps*, the *Clean Air Plan* and *Metro 2050*, and the *Board Strategic Plan 2022-2026*, including:

- Board Strategic Plan priority action for Liquid Waste Services: "Meet corporate targets for GHG emission reductions by continuing to expand energy and heat recovery opportunities…"; and
- *Climate 2050 Buildings Roadmap* Strategy 3 :"Shift to Zero Carbon District Energy Systems".

EXISTING DISTRICT ENERGY AND THERMAL ENERGY RESOURCES IN METRO VANCOUVER

Metro Vancouver and several member municipalities operate or are developing about 30 district energy systems under various public and private ownership models. District energy systems use centralized facilities to distribute steam or hot water via networks of pipes for heating, historically relying on fossil fuels, biomass, or waste incineration. New district energy systems and upgrades to existing systems often incorporate low-carbon energy sources. TENs usually refer to systems that provide affordable, reliable heating and cooling to entire communities, predominantly powered by low-carbon energy (Reference 1). Metro Vancouver has a role in TENs in the region as a provider of zero-carbon energy and in developing systems that deliver energy across municipal boundaries.

Metro Vancouver is recovering heat from wastewater for several district energy projects under design that will cut GHG emissions by about 45,000 tonnes and provide renewable heat to nearby communities. Available thermal energy in Metro Vancouver's wastewater is estimated to be sufficient to provide heat to about 700 high-rise buildings, and using wastewater heat recovery across the entire region has the potential to reduce 250,000 tonnes of GHGs per year. Current wastewater heat recovery partners include the Seṅáḵw development in Vancouver; Lulu Island Energy Company in Richmond City Centre; Surrey City Energy supplying Surrey City Centre; and Lonsdale Energy Corporation in the City of North Vancouver.

Additionally, Metro Vancouver is developing a district energy system at its waste-to-energy plant that will heat 50,000 homes in Vancouver and Burnaby, cutting annual GHG emissions by 70,000 tonnes (Reference 2). Metro Vancouver also uses biogas produced at several wastewater treatment plants to help power the plants and sells some to FortisBC.

Potential benefits of TENs in Metro Vancouver

Innovations in TENs technologies, design, and governance in other jurisdictions suggest potential opportunities and benefits for expanding TENs in Metro Vancouver, including:

- **GHG reduction** by switching to low-carbon TENs for both existing and new buildings;
- **Energy efficiency** – TENs are up to six times more efficient than electric baseboards or gas heaters (Reference 1), helping to conserve resources and reduce peak electrical loads;
- **Health and safety** – TENs can provide cooling, helping to protect residents from hotter summers and extreme heat events; and
- **Economic development** – TENs can support jobs and local supply chains, as well as opportunities for service diversification for utilities.

This study will evaluate these and other potential benefits in the region, alongside costs, general viability of various types of TENs, and specific geographic opportunities for expansion of TENs.

PROJECT DESCRIPTION

The goal of the project is to evaluate the potential of TENs for cost-effectively heating and cooling buildings, reducing air pollutant and GHG emissions, and supporting regional, municipal, and utility goals for energy efficiency and energy security. The project aims to quantify and understand TENs

potential in the region, along with costs, benefits, challenges, and specific geographic opportunities to leverage Metro Vancouver's waste heat sources as well as other zero-emissions energy. It would also aim to identify potential provincial policy changes to better support and enable TENs.

Project Partners and Municipal Involvement
Metro Vancouver is partnering with BC Hydro and ZEIC, whose interests include:

- For BC Hydro, the project aligns with efforts to manage peak loads and alleviate system constraints in high growth areas. Identifying areas with high potential for TENs can also aid their long-term planning and demand management strategies.
- For ZEIC, the project aligns with their interests in supporting decarbonization of existing buildings, clean energy, jobs, affordability, and local economic growth via TENs.

Member municipalities could use project outcomes as a basis for more detailed analysis to pursue TENs in their jurisdictions, including in partnership with Metro Vancouver on sewer heat, such as:

- Policies and partnerships for incorporating TENs in new development areas;
- Expansion or development of new municipally owned or private TENs systems;
- Collaboration for TENs development across municipal boundaries;
- Incorporation of low-carbon energy sources in existing systems; and,
- Incorporation of cooling in new or existing TENs.

The project will work with member municipalities and partners to learn from existing regional and municipal waste heat policies and programs. The project will also engage utilities and industry to assess how TENs can play a larger role in providing efficient, zero emission heating and cooling for buildings in the region.

Project Phases and Deliverables
The project will be supported by a consultant with relevant skills and experience that complement staff subject matter expertise. The proposed scope envisions three phases of work:

1. overview of existing TENs and best practices in context of the Metro Vancouver region;
2. spatial analysis of opportunities for low-carbon thermal energy (e.g., sewers, industrial, geothermal, etc.) and demand (primarily existing buildings and new growth) for TENs in the Metro Vancouver region; and
3. prioritization and cost and benefits analysis of geographically based TENs in the region.

Anticipated deliverables include GIS-based models and analysis and customizable models for TENs demand and supply, a comprehensive report, and resources to support communication and knowledge sharing on TENs' feasibility, benefits, and opportunities for municipalities, utilities, and relevant organizations in Metro Vancouver.

Municipal Engagement
Metro Vancouver staff have engaged with member municipalities and are continuing to reach out to ascertain interest in the TENs project. At the time of this report, about 10 member municipalities (all of those contacted) have expressed interest. The project will be guided by an advisory committee comprised of project partner representatives alongside municipal staff and others with relevant experience. Opportunities will also be provided for municipal staff and other relevant

parties to be informed and engaged at specific project milestones and in dedicated workshops and/or activities. All member municipalities will be kept informed and updated with project progress and outcomes via established technical committees such as the Regional Engineers Advisory Committee - Climate Protection Subcommittee (REAC-CPS).

NEXT STEPS

Subject to feedback received from the Air Quality and Climate Committee, the project will be initiated and a call for proposals will be issued. The final study and recommendations will be presented to a future Air Quality and Climate Committee meeting, publicly shared and posted on the Metro Vancouver website, and broadly disseminated to ensure actionable findings. Staff plan to issue a call for proposals in the spring of 2025, with the project to be completed by December 2026.

ALTERNATIVES

This is an information report, and therefore no alternatives are presented.

FINANCIAL IMPLICATIONS

Funding for the project of up to $250,000 is available: up to $150,000 from Metro Vancouver's Board-approved 2024 Air Quality and Climate Action Services budget; and $50,000 each from BC Hydro and (ZEIC), under a signed contribution agreement. This is the maximum allocated budget. The final costs will be determined via a competitive procurement process in accordance with Metro Vancouver's procurement policies.

CONCLUSION

The Metro Vancouver region, and society more broadly, is transitioning to clean, reliable, and resilient energy for services, buildings, and industries. TENs can help address challenges of this transition. This project, led by Metro Vancouver in partnership with BC Hydro and ZEIC, will assess opportunities for expanding TENs in the region, which can support member municipalities in pursuing TENs within their jurisdictions and with coordinated regional approaches. The project supports the *Board Strategic Plan 2022-2026* Liquid Waste Services priority actions, beneficial energy recovery from utility systems as directed by the *Sewage and Waste: Heat Recovery Policy*, and actions in *Metro 2050*, the *Clean Air Plan* and *Climate 2050 Roadmaps*.

ATTACHMENT

1. Presentation re: "Analyzing Thermal Energy Opportunities", dated April 4, 2025.

REFERENCES

1. Building Decarbonization Coalition. (2025). *Thermal Energy Networks*. Retrieved from https://buildingdecarb.org/initiatives/tens. Last accessed 2025, February 21.
2. Metro Vancouver. (2025). *About Waste-to-Energy Facility*. https://metrovancouver.org/services/solid-waste/about-waste-to-energy-facility. Last accessed 2025, February 21.

Burnaby View West

ANALYZING THERMAL ENERGY OPPORTUNITIES

REGIONAL OPPORTUNITIES FOR CLEAN, RENEWABLE AND RESILIENT ENERGY

Sara Muir
Air Quality Planner, Air Quality and Climate Action Services

Jeff Carmichael
Division Manager, Business Development, Liquid Waste Services

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Air Quality and Climate Committee Meeting – April 4, 2025
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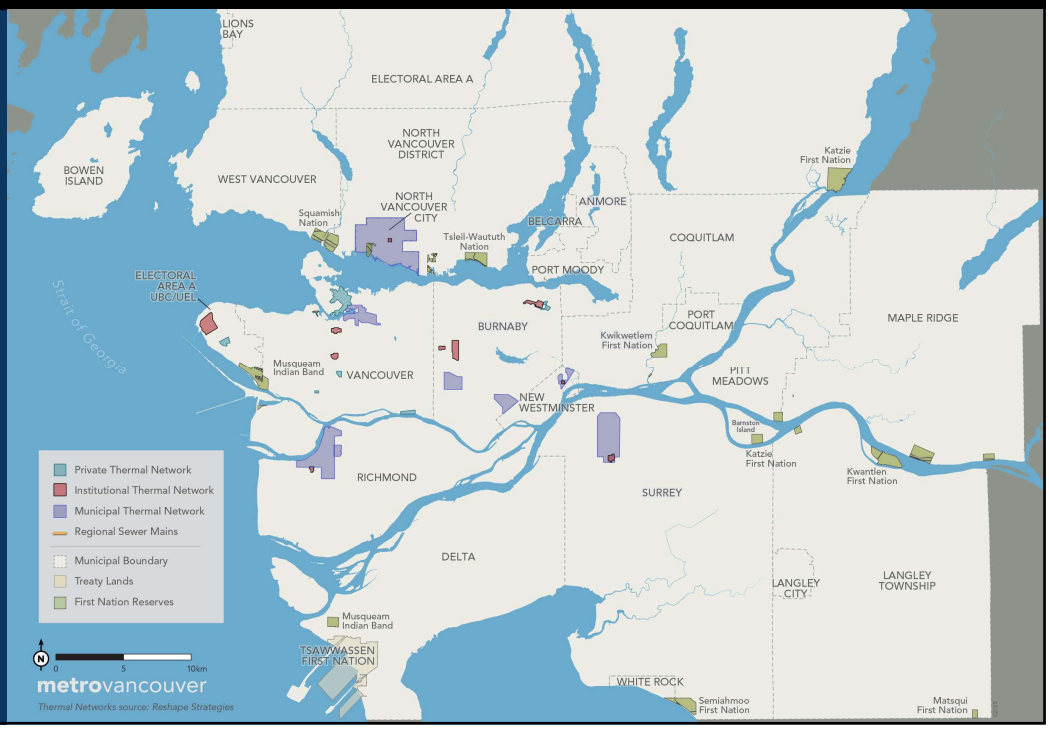
1

District Energy Service Areas in Metro Vancouver

Many district energy systems are already providing heat and power to buildings in certain areas in the region



2

TENs - CLEAN, RENEWABLE AND RESILIENT ENERGY

- Interconnected water pipes heat and cool buildings with zero emissions energy such as waste heat
- Support GHG reduction, energy resilience and affordable energy transition
- Capitalize on recovered energy from utility systems

Sapperton, New Westminster

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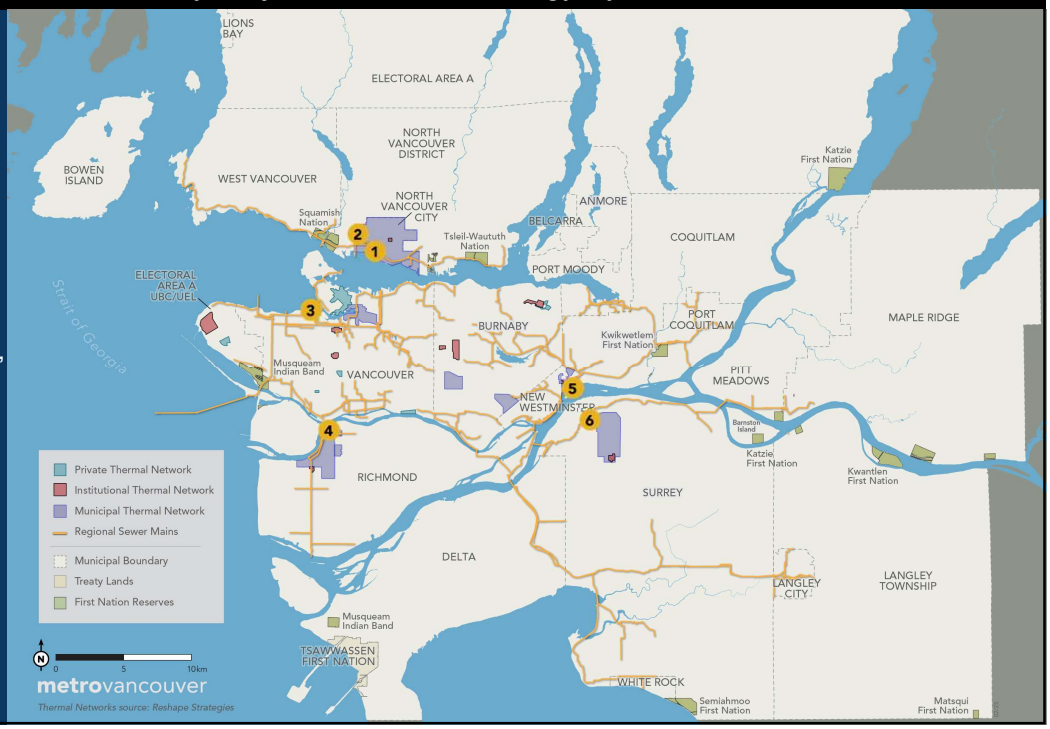
3

TENs: Wastewater Heat Recovery Projects for District Energy Systems

1. Lonsdale Energy, North Shore WWTP Effluent Heat
2. Lonsdale Energy, North Vancouver Interceptor
3. Sen̓áḵw Development, Vancouver
4. Lulu Island Energy, Richmond
5. Sapperton District, New Westminster
6. Surrey City Centre



4

EXPANDING TENs - KEY BENEFITS

- Efficient and resilient energy
- Health, safety - provide heating and cooling
- Local economic development and job creation
- Greenhouse gas reductions

Lonsdale Recreation Scene at the Shipyards

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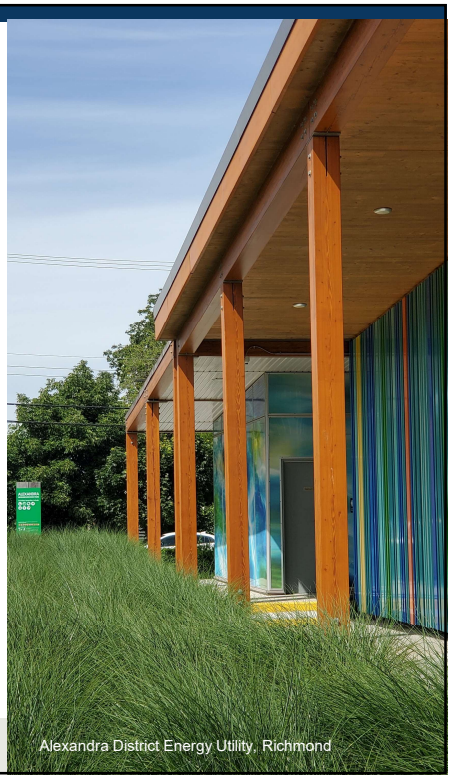
TENs PROJECT - OBJECTIVES

- Benefits and opportunities for TENs in MV
- Optimal areas for different types of TENs
- Energy transition and local generation potential
- Government, utilities and industry roles in enabling TENs


Alexandra District Energy Utility, Richmond

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6

TENs PROJECT - NEXT STEPS

- Spring 2025 - Call for proposals
- Project initiation and advisory group formation
- Updates, final study and recommendations

Planned TENs connection to MV sewer main for Senakw in Vancouver
(image https://senakw.com/district-energy)

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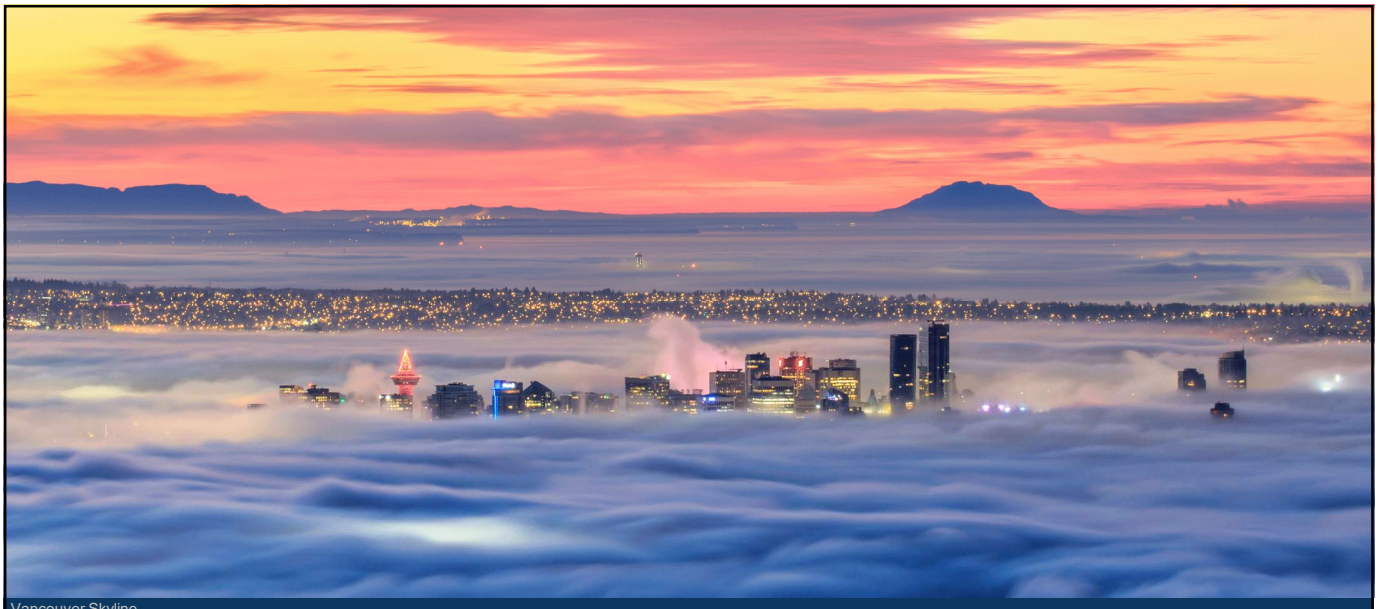

Vancouver Skyline

Thank you

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Conor Reynolds, Director, Air Quality and Climate Action Services

Date: March 10, 2025 Meeting Date: April 4, 2025

Subject: **Manager's Report**

RECOMMENDATION
That the Air Quality and Climate Committee receive for information the report dated March 10, 2025, titled "Manager's Report".

UPDATES TO NATIONAL AIR QUALITY WEBSITE
A national website that reports on Canada's air quality was recently updated with new information on air quality and emissions across Canada, air pollution and its effects, and actions to improve the air that we breathe. The website, Canada's Air (Reference 1), is managed by the Canadian Council of Ministers of the Environment (CCME), which is composed of environment ministers from the federal, provincial, and territorial governments.

The website provides information on:

- Types and sources of air pollutants and effects of pollutants on human health and the environment;
- Canadian Ambient Air Quality Standards (CAAQS) that are in effect nationally
- Achievement of CAAQS for "air zones" across Canada (Metro Vancouver is part of the Lower Fraser Valley Air Zone);
- Trends in emissions and concentrations of air pollutants, for different emission sources; and
- Health benefits of improved air quality and actions to continue improving air quality.

As Metro Vancouver manages and regulates air quality for the region, Metro Vancouver staff participate as observers in various CCME air quality committees and working groups, and contribute to aspects of CCME's work, such as reporting on air quality and development of air quality standards. In November 2024, the MVRD Board approved updated air quality objectives for the region that aligned with new CAAQS that came into effect in 2025.

CLIMATE 2050 ROADMAPS UPDATE
As directed by the MVRD Board in with the adoption of Climate 2050 in 2018, staff have completed six *Climate 2050 Roadmaps* and have been developing content for the four remaining: Land-Use and Urban Form, Human Health and Well-Being, Solid Waste, and Water and Wastewater Infrastructure. In accordance with Board direction to find operational efficiencies, in an upcoming Air Quality and Climate Committee report, staff will propose a streamlined approach to finalize these roadmaps, including alternative pathways for integrating climate policy and actions in existing Metro Vancouver plans and policies, such as updates to the solid waste and liquid waste management plans.

2024 SUSTAINABLE COMMUNITIES AWARD

The Federation of Canadian Municipalities (FCM) Sustainable Communities Awards recognize projects that demonstrate environmental sustainability while yielding social and economic benefits for their communities. Winning projects use leading technologies and practices that are replicable nation-wide to advance climate goals and enhance Canadians' quality of life.

Metro Vancouver won an award in the 2024 Community Energy category for its energy recovery policy and projects in liquid waste and district energy. The *Sewage and Waste: Heat Recovery Policy* enables greenhouse gas emissions reduction by capturing waste heat from liquid waste and solid waste systems, leading to multiple heat recovery initiatives, as well as the Waste-to-Energy Facility District Energy Project. Together, these projects could cut emissions equivalent to 70,000 passenger vehicles annually. This award shows how energy recovery and district energy can transform waste into sustainable, cost-effective solutions that support the clean energy transition.

CLEAN ENERGY CANADA REPORT ON ELECTRIFICATION

Clean Energy Canada's February 2025 report, "Reality Check: BC is ready for an electrified 2030" (Reference 2), confirms BC's electricity grid can meet future demand while keeping costs low. BC residents' electricity bills are among North America's lowest—and half that of Albertans. BC Hydro's investments in renewables, efficiency, and power trading will accommodate a projected 15% rise in demand by 2030, while maintaining affordable rates.

BC Hydro plans a $36 billion investment over the next decade to support grid growth and reliability. Site C adds 8% capacity, enough to power 450,000 homes, with an additional 8% from 2024's call for power. BC's well-established electricity trading with Alberta and the US, where exports have exceeded imports by 35% in value since 2019, has yielded $1.5 billion and lowered bills for BC customers. In light of US tariffs on electricity, increasing electricity trade with Alberta and other provinces provides opportunity to grow new, non-US markets.

The report highlights the grid's ability to respond to electrification policies with minimal cost impacts. For example, achieving 90% EV sales by 2030 would increase electricity demand by only 2%, while transitioning the 42% of households reliant on electric baseboard heating to heat pumps could cut electrical demand by 5% and save households $500 annually.

BUILDING NEW HOUSING IN HIGH-RISK AREAS COULD COST CANADIANS BILLIONS

As Canada works to meet ambitious housing targets, an estimated 5.8 million new homes must be built by 2030. However, under current policies, many of these homes could be located in high-risk areas vulnerable to climate-related hazards such as flooding and wildfires. A new study from the Canadian Climate Institute (Reference 3) has found that approximately 540,000 new homes built by 2030 could face damage from flooding and wildfires, and a high proportion of this risk is located in British Columbia. In a worst-case scenario, this could result in economic losses of approximately $2B per year in B.C. alone, with a projected $1.1B of that as a result of flooding events in the Lower Mainland. This report calls on the urgent need for governments at all levels to enact policy changes, to steer housing and infrastructure investments away from high hazard areas, in order to avoid costly and disruptive climate-related disasters in the future.

REFERENCES

1. Canadian Council of Ministers of the Environment. (2025). *Canada's Air*. Retrieved from https://ccme.ca/en/air-quality-report. Last accessed 2025, February 24.
2. Clean Energy Canada. (2025). *Reality Check: BC is ready for an electrified 2030*. Retrieved from https://cleanenergycanada.org/wp-content/uploads/2025/02/Report_BCElectricity_2025_V3.pdf. Last accessed 2025, March 10.
3. Canadian Climate Institute. (n.d). *Close to Home – How to Build More Housing in a Changing Climate*. Retrieved from https://ccme.ca/en/air-quality-report#slide-16. Last accessed 2025, February 21.

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Action Committee

From: Edward Nichol, Senior Planner, Regional Planning and Housing Services

Date: March 10, 2025 Meeting Date: April 4, 2025

Subject: **Metro Vancouver Tree Guide**

At its February 6, 2025 meeting, the Regional Planning Committee received for information the attached report titled "Metro Vancouver Tree Guide", dated January 17, 2025.

The report introduces the Metro Vancouver Tree Guide (Reference 1), a new user-friendly online tree species selection tool to help identify appropriate climate-resilient tree species based on desired characteristics. The guide includes 15 refiners that can be used to filter over 300 species. Species can be filtered by climate change-specific criteria – such as overall climate suitability, hardiness and heat zone, drought tolerance, saturated soil tolerance, and flammability – as well as by other relevant characteristics such as size, risks, tolerances, habitat value, and suitable planting locations.

This report is being brought to the Air Quality and Climate Action Committee for information.

ATTACHMENT

1. Report to Regional Planning Committee titled "Metro Vancouver Tree Guide", dated January 17, 2025.

REFERENCE

1. Metro Vancouver. (2025). *Metro Vancouver Tree Guide*. Retrieved from https://treeguide.ca/. Last accessed 2025, March 10.

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metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Regional Planning Committee

From: Edward Nichol, Senior Planner, Regional Planning and Housing Services

Date: January 17, 2025 Meeting Date: February 6, 2025

Subject: **Metro Vancouver Tree Guide**

RECOMMENDATION

That the Regional Planning Committee receive for information the report dated January 17, 2025, titled "Metro Vancouver Tree Guide".

EXECUTIVE SUMMARY

The Metro Vancouver Tree Guide was developed internally by Metro Vancouver staff in 2024 to synthesise the information in existing resources into a more accessible and user-friendly online tool. The Metro Vancouver Tree Guide (Reference 7) is a user-friendly, online tree species selection tool to help identify appropriate climate-resilient tree species based on desired characteristics. The guide includes 15 refiners that can be used to filter over 300 species. Species can be filtered by climate change-specific criteria – such as overall climate suitability, hardiness and heat zone, drought tolerance, saturated soil tolerance, and flammability – as well as by other relevant characteristics such as size, risks, tolerances, habitat value, and suitable planting locations. The Tree Guide supports regional climate change goals and urban tree canopy cover targets in *Metro 2050, Climate 2050,* and the *Board Strategic Plan 2022-2026*. If resilient and site-appropriate tree species are planted in the urban environment they are more likely to survive and live longer, which enhances the community benefits (e.g. cooling, shading, and carbon sequestration) these trees provide over time.

Metro Vancouver staff will demonstrate how the Tree Guide can be used at the February 6, 2025 Regional Planning Committee meeting. Metro Vancouver staff will also promote the use of the guide to practitioners across the region and update it on an as-needed basis.

PURPOSE

This report provides Regional Planning Committee members with information on the Metro Vancouver Tree Guide, and the opportunity to provide feedback on the online tool.

BACKGROUND

The Board approved budget and work plan items for Regional Planning to work with consultants and technical experts to conduct research and develop resources and tools to support member jurisdictions to reach shared goals around climate adaptation and urban forest management.

On January 17, 2025, the Regional Planning Advisory Committee received a report and demonstration of the Metro Vancouver Tree Guide. Member jurisdiction staff provided positive

feedback in support of the Tree Guide, noting it could eliminate the need for individual members to undertake this research or provide similar guides.

POLICY CONTEXT

Metro 2050 includes strategies to enhance ecosystems and improve resilience to climate change impacts, including a target to increase regional tree canopy cover within the Urban Containment Boundary to 40% by the year 2050 (Reference 1). The Board-endorsed *Climate 2050* Nature and Ecosystems Roadmap includes the same target, as well as a strategy to support a resilient urban forest with an action for Metro Vancouver to provide data and resources that support urban forest management (Reference 2). The Board Strategic Plan 2022-2026 includes a priority action for Metro Vancouver to support member jurisdictions to develop and implement effective policies and tools that will help the region achieve its targets to protect 50 per cent of lands for nature and achieve a 40 per cent urban tree canopy (Reference 3). Strategy 1.5 of the Board-adopted Ecological Health Framework is to support natural and urban ecosystems to adapt to climate change (Reference 4).

Project History

Healthy and resilient trees provide communities with important ecosystem services, including shading and cooling, flood absorption, habitat, and carbon storage. Collectively, the trees within the public and private lands of a community (including the trees in parks, around buildings, along streets and in backyards) make up the urban forest. Trees in the urban forest often face challenging growing conditions, as well as climate change impacts. Since 2016, Metro Vancouver has supported member jurisdictions in ensuring a healthy and resilient urban forest by providing data and resources, convening practitioners, and advocating for innovative approaches.

Metro Vancouver retained Diamond Head Consulting Ltd. to develop the Tree Species Selection Database (Reference 5), an Excel spreadsheet with information for over 300 tree species. Interviews with member jurisdiction staff indicated the need for an online species selection tool, building on the information in the Tree Species Selection Database. The Tree Guide was developed internally by Metro Vancouver's Regional Planning and External Relations staff in 2024. The Tree Guide complements other urban forestry guidance materials produced by Metro Vancouver to date, such as the Tree Regulations Toolkit, which was updated in 2023 (Reference 6).

METRO VANCOUVER TREE GUIDE

The Tree Guide (Reference 7) is an online tree species selection tool designed to help urban forestry practitioners (such as arborists, urban foresters, landscape architects, and urban, park, and environmental planners) in the Metro Vancouver region search and identify appropriate tree species, including those that are anticipated to be resilient under future climate change conditions. The guide includes 15 refiners that can be used to filter over 300 species. Species can be filtered by climate change-specific criteria – such as overall climate suitability, hardiness and heat zone, drought tolerance, saturated soil tolerance, and flammability – as well as by other relevant characteristics such as size, risks, tolerances, habitat value, and suitable planting locations.

Each species profile in the guide consists of photos and additional information, including practitioner comments and tree care tips synthesized from experts within the region. The guide includes a glossary and a dedicated page to house relevant links, including all of Metro Vancouver's

urban forestry resources produced to date. The guide can be accessed via mobile device or desktop, and provides comprehensive tree species information in a user-friendly format.

Urban trees support carbon sequestration, climate adaptation, biodiversity and human health objectives; however, it can take decades before these benefits are maximized, and these trees are often subject to challenging growing conditions in the urban environment, as well as climate change impacts. Therefore, selecting and planting resilient tree species is critical. The Tree Guide supports member jurisdictions and practitioners in the region with critical information to inform tree species selection decisions. If resilient and site-appropriate tree species are planted in the urban environment they are more likely to survive and live longer, which enhances the community benefits these trees provide over time.

Next Steps
Metro Vancouver staff will promote the use of the Tree Guide to practitioners across the region and update this resource on an as-needed basis.

ALTERNATIVES
This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS
There are no financial implications associated with this report. All work on the Metro Vancouver Tree Guide was completed in-house by Regional Planning and External Relations staff through their respective regular work plans and budgets.

CONCLUSION
The Metro Vancouver Tree Guide was developed internally by Metro Vancouver staff in 2024 to synthesise the information in existing resources into a more accessible and user-friendly online tool. The Tree Guide is an online tree species selection tool designed to help member jurisdictions and urban forestry practitioners in the Metro Vancouver region identify appropriate tree species based on desired characteristics. The guide includes 15 refiners that can be used to filter over 300 species. Given the detailed information included for each species – including information on climate resilience – the Tree Guide can be used to identify appropriate species for planting, which supports both *Metro 2050* and *Climate 2050* climate change goals and tree canopy cover targets. Metro Vancouver staff will promote the use of the guide to practitioners across the region and update it on an as-needed basis.

REFERENCES
1. *Metro 2050* Policy 3.2.1 b)
2. *Climate 2050* Nature and Ecosystems Roadmap (Strategy 4)
3. Board Strategic Plan 2022-2026: Regional Planning Priority Actions
4. Ecological Health Framework Strategy 1.5
5. Metro Vancouver Tree Species Selection Database
6. Metro Vancouver Tree Regulations Toolkit
7. Metro Vancouver Tree Guide

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