

**METRO VANCOUVER REGIONAL DISTRICT
CAUCUS OF COMMITTEE CHAIRS**

MEETING

Wednesday, February 21, 2024

9:00 am

28th Floor Committee room, 4515 Central Boulevard, Burnaby, British Columbia

Webstream available at <https://www.metrovancover.org>

REVISED AGENDA¹

A. ADOPTION OF THE AGENDA

1. February 21, 2024 Meeting Agenda

That the Caucus of Committee Chairs adopt the agenda for its meeting scheduled for February 21, 2024 as circulated.

B. ADOPTION OF THE MINUTES

1. September 15, 2023 Meeting Minutes

That the Caucus of Committee Chairs adopt the minutes of its meeting held September 15, 2023 as circulated.

pg. 4

C. DELEGATIONS

D. INVITED PRESENTATIONS

E. REPORTS FROM COMMITTEE OR CHIEF ADMINISTRATIVE OFFICER

1. 2024 Caucus of Committee Chairs Meeting Schedule and Work Plan

That the Caucus of Committee Chairs:

- a) receive for information the Caucus of Committee Chairs Terms of Reference and the 2024 Annual Meeting Schedule, as presented in the report dated February 12, 2024, titled "2024 Caucus of Committee Chairs Meeting Schedule and Work Plan"; and
- b) endorse the 2024 Work Plan, as presented in the report dated February 12, 2024, titled "2024 Caucus of Committee Chairs Meeting Schedule and Work Plan".

pg. 6

¹ Note: Recommendation is shown under each item, where applicable.

- 2. Climate 2050: Priority Actions to Accelerate Toward our Regional Targets** pg. 13
That the Caucus of Committee Chairs receive for information the report dated February 9, 2024, titled “Climate 2050: Priority Actions to Accelerate Toward our Regional Targets”.

- 3. 2024 Regional District Sustainability Innovation Fund Applications** pg. 29
That the MVRD Board approve the allocation from the Regional District Sustainability Innovation Fund for the following projects:
- a) Rental Housing Blueprint: Streamlining Multi-Family Affordable Rental Housing Delivery Through Standardization and Modern Construction Methods for \$2,130,000 from 2024 to 2026;
 - b) Comprehensive Assessment and Regulation of Expanded Group of Greenhouse Gases (CARE-3G) for \$230,000 from 2024 to 2025; and
 - c) Feasibility Study for a Pilot Microgrid Project in the Metro Vancouver Region for \$200,000 from 2024 to 2025.

- 4. 2024 Water Services Sustainability Innovation Fund Applications** pg. 42
That the GVWD Board approve the allocation from the Water Sustainability Innovation Fund for the ‘Expansion of the Earthquake Early Warning (EEW) & Structural Health Monitoring (SHM) Systems’ project for \$1,000,000 from 2024 to 2026.

F. INFORMATION ITEMS

G. OTHER BUSINESS

1. Member’s Roundtable Discussion

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.

Added That the Caucus of Committee Chairs close its meeting scheduled for February 21, 2024 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 Caucus of Committee Chairs adjourn its meeting of February 21, 2024.

Membership:

Harvie, George V. (C) – Delta
McEwen, John (VC) – Anmore
Brodie, Malcolm – Richmond
Buchanan, Linda – North Vancouver City
Dhaliwal, Sav – Burnaby

Dominato, Lisa – Vancouver
Hurley, Mike – Burnaby
Kirby-Yung, Sarah – Vancouver
Kruger, Dylan – Delta
Locke, Brenda – Surrey

McCutcheon, Jen – Electoral Area A
Muri, Lisa – North Vancouver District
Ruimy, Dan – Maple Ridge
West, Brad – Port Coquitlam
Woodward, Eric – Langley Township

**METRO VANCOUVER REGIONAL DISTRICT
CAUCUS OF COMMITTEE CHAIRS AND FINANCIAL PLAN TASK FORCE**

Minutes of the Special Joint Meeting of the Metro Vancouver Regional District (MVRD) Caucus of Committee Chairs and Financial Plan Task Force held at 1:00 pm on Friday, September 15, 2023 in the 28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:

Chair, Mayor George V. Harvie, Delta
 Vice Chair, Mayor John McEwen, Anmore
 Mayor Malcolm Brodie, Richmond
 Mayor Mike Hurley*, Burnaby
 Councillor Pardeep Kooner, Surrey
 Councillor Dylan Kruger, Delta
 Mayor Brenda Locke, Surrey
 Director Jen McCutcheon, Electoral Area A
 Councillor Lisa Muri, North Vancouver District
 Mayor Mark Sager, West Vancouver
 Mayor Brad West, Port Coquitlam
 Mayor Eric Woodward, Langley Township

MEMBERS ABSENT:

Mayor Linda Buchanan, North Vancouver City
 Councillor Sav Dhaliwal, Burnaby
 Councillor Lisa Dominato, Vancouver
 Councillor Sarah Kirby-Yung, Vancouver

OTHERS PRESENT:

Mayor Mike Little, North Vancouver District

STAFF PRESENT:

Jerry W. Dobrovolsky, Chief Administrative Officer
 Rapinder Khaira, Legislative Services Coordinator, Board and Information Services

1. ADOPTION OF THE AGENDA

1.1 September 15, 2023 Special Meeting Agenda

It was MOVED and SECONDED

That the Caucus of Committee Chairs and Financial Plan Task Force adopt the agenda for its special meeting scheduled for September 15, 2023 as circulated.

CARRIED

*denotes electronic meeting participation as authorized by section 3.6.2 of the *Procedure Bylaw*

2. REPORTS FROM COMMITTEE OR STAFF

No items presented.

3. RESOLUTION TO CLOSE MEETING

It was MOVED and SECONDED

That the Caucus of Committee Chairs and Financial Plan Task Force close its meeting scheduled for September 15, 2023 pursuant to section 226 (1) (a) of the *Local Government Act* and the *Community Charter* provisions as follows:

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

(g) litigation or potential litigation affecting the municipality.

CARRIED

4. ADJOURNMENT/CONCLUSION

It was MOVED and SECONDED

That the Caucus of Committee Chairs and Financial Plan Task Force adjourn its special meeting of September 15, 2023.

CARRIED

(Time: 1:00 pm)

Rapinder Khaira,
Legislative Services Coordinator

George V. Harvie,
Chair

62453201 FINAL

To: Caucus of Committee Chairs

From: Jerry W. Dobrovolny, Commissioner/Chief Administrative Officer

Date: February 12, 2024

Meeting Date: February 21, 2024

Subject: **2024 Caucus of Committee Chairs Meeting Schedule and Work Plan**

RECOMMENDATION

That the Caucus of Committee Chairs:

- a) receive for information the Caucus of Committee Chairs Terms of Reference and the 2024 Annual Meeting Schedule, as presented in the report dated February 12, 2024, titled “2024 Caucus of Committee Chairs Meeting Schedule and Work Plan”; and
 - b) endorse the 2024 Work Plan, as presented in the report dated February 12, 2024, titled “2024 Caucus of Committee Chairs Meeting Schedule and Work Plan”.
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EXECUTIVE SUMMARY

The Terms of Reference for the Caucus of Committee Chairs set out the committee responsibilities in the areas of regional interest from Metro Vancouver’s standing committees, which provides guidance and oversight on the implementation of the annual work plan. Work plan priorities for 2024 include issues intersecting across the standing committees and topics of pan-committee interest, and are consistent with the endorsed 2024 Budget. Pursuant to the Terms of Reference, the meeting schedule proposes meetings to be held at the call of the Chair.

PURPOSE

To provide the Caucus of Committee Chairs with the 2024 Work Plan, Terms of Reference, and the Annual Meeting Schedule.

BACKGROUND

Annually, following the Board Inaugural meeting in November, the Board Chair establishes the committee structure and the terms of reference for each committee for the new year. To support the Committee in its work, this report brings forward the committee’s Work Plan and the Schedule of Meetings for 2024.

2024 WORK PLAN

The Work Plan presented in this report is consistent with the Caucus of Committee Chairs’ Terms of Reference (Attachment 2) and with the Board Strategic Plan and is being brought forward for the Committee’s information, review and endorsement.

Key actions in the 2024 Work Plan for the Committee are described below and listed according to the Committee responsibilities in its Terms of Reference.

- Providing, within its scope of responsibility, a regional forum to facilitate collaborative processes to address the most pressing issues facing the region;
- Progressing the Board's key priorities during its four-year mandate to advance its shared vision, as reflected in the Board's Strategic Plan;
- Developing strategies to align activities under Metro Vancouver's legislated authority and areas of service;
- Overseeing the review of proposals for funding under Metro Vancouver's Sustainability Innovation Funds, monitoring the program's overall performance, and making recommendations to the Board on proposals to support;
- Operationalizing key actions and principles to implement across the organization for the years to come; and
- Advancing Metro Vancouver's long-term goals by providing strategic direction for its services and actions relevant to member jurisdictions, stakeholders, and the public.

The Committee will be updated on the status of the actions and projects in this Work Plan at the call of the Chair, per the Committee's schedule.

2024 COMMITTEE MEETING SCHEDULE

The *Procedure Bylaw* requires the Corporate Officer to provide the Committee with an Annual Meeting Schedule for the upcoming year, including the date, time, and place of the meetings (Attachment 3).

Meeting Place

Committee meetings will be held at Metro Vancouver Committee Room, 28th Floor, 4515 Central Blvd, Burnaby, BC, at 9:00 am/1:00 pm, unless otherwise specified on the Metro Vancouver public notice board, the Metro Vancouver website, and the respective agenda.

ALTERNATIVES

1. That the Caucus of Committee Chairs:
 - a) receive for information the Caucus of Committee Chairs Terms of Reference and the 2024 Annual Meeting Schedule, as presented in the report dated February 12, 2024, titled "2024 Caucus of Committee Chairs Meeting Schedule and Work Plan"; and
 - b) endorse the 2024 Work Plan, as presented in the report dated February 12, 2024, titled "2024 Caucus of Committee Chairs Meeting Schedule and Work Plan".
2. That the Caucus of Committee Chairs:
 - a) receive for information the Caucus of Committee Chairs Terms of Reference and the 2024 Annual Meeting Schedule, as presented in the report dated February 12, 2024, titled "2024 Caucus of Committee Chairs Meeting Schedule and Work Plan"; and
 - b) endorse the 2024 Work Plan, as presented in the report dated February 12, 2024, titled "2024 Caucus of Committee Chairs Meeting Schedule and Work Plan", incorporating the requested changes from the Caucus of Committee Chairs.

FINANCIAL IMPLICATIONS

Committee meeting expenses and remuneration associated with meeting attendance have been allocated in the annual budget.

CONCLUSION

The Work Plan presented in this report identifies the priorities for the Caucus of Committee Chairs in 2024 and is consistent with its Terms of Reference and the 2024 Budget. To assist the Committee, the 2024 Annual Meeting Schedule has been established to guide the Committee's success in completing the business of the Work Plan. Staff recommends that Alternative 1 be approved.

ATTACHMENTS

1. Caucus of Committee Chairs 2024 Work Plan
2. Caucus of Committee Chairs Terms of Reference
3. Caucus of Committee Chairs 2024 Annual Meeting Schedule

64436994

Caucus of Committee Chairs 2024 Work Plan
Report Date: February 12, 2024

Priorities

1st Quarter	Status
Sustainability Innovation Fund Applications	In Progress
Issues Intersecting Across Standing Committees	Pending
Topics of Pan-Committee Interest	Pending
2nd Quarter	Status
Update on Sustainability Innovation Fund Applications	Pending
Issues Intersecting Across Standing Committees	Pending
Topics of Pan-Committee Interest	Pending
3rd Quarter	Status
Issues Intersecting Across Standing Committees	Pending
Topics of Pan-Committee Interest	Pending
Review Status of Priorities	Pending
4th Quarter	Status
Issues Intersecting Across Standing Committees	Pending
Topics of Pan-Committee Interest	Pending

Caucus of Committee Chairs

Terms of Reference

The Caucus of Committee Chairs of Metro Vancouver is the standing committee of the Metro Vancouver Board that provides advice and recommendations on priority issues of significant regional interest from Metro Vancouver's standing committees in alignment with the *Board's Strategic Plan*.

Committee Responsibilities

Within the scope of the *Board's Strategic Plan*, Board policies, and the *Metro Vancouver Financial Plan*, the Committee provides input, advice and recommendations to the Board regarding issues intersecting across standing committees, and presenting a venue to address matters of pan-committee interest consistent with the Board's vision and goals.

Specific Committee responsibilities include:

- Providing, within its scope of responsibility, a regional forum to facilitate collaborative processes to address the most pressing issues facing the region;
- Progressing the Board's key priorities during its four-year mandate to advance its shared vision, as reflected in the *Board's Strategic Plan*;
- Developing strategies to align activities under Metro Vancouver's legislated authority and areas of service;
- Overseeing the review of proposals for funding under Metro Vancouver's Sustainability Innovation Funds, monitoring the program's overall performance, and making recommendations to the Board on proposals to support;
- Operationalizing key actions and principles to implement across the organization for the years to come; and
- Advancing Metro Vancouver's long-term goals by providing strategic direction for its services and actions relevant to member jurisdictions, stakeholders, and the public.

Committee Membership and Meetings

The Chair, Vice Chair and members are appointed annually by the Chair of the Metro Vancouver Board. Committee membership includes the Chairs from all Metro Vancouver standing committees. 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 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.

Caucus of Committee Chairs 2024 Annual Meeting Schedule

** Meetings will be held at the call of the Chair within the times listed below.*

- **Wednesday, February 21, 2024 at 9:00 am**
- **Thursday, March 14, 2024 at 1:00 pm**
- **Thursday, April 11, 2024 at 1:00 pm**
- **Thursday, May 16, 2024 at 1:00 pm**
- **Thursday, September 12, 2024 at 1:00 pm**
- **Thursday, October 10, 2024 at 1:00 pm**
- **Thursday, November 14, 2024 at 1:00 pm**

To: Caucus of Committee Chairs

From: Climate Action Committee

Date: February 9, 2024

Meeting Date: February 21, 2024

Subject: **Climate 2050: Priority Actions to Accelerate Toward our Regional Targets**

That the Caucus of Committee Chairs receive for information the report dated February 9, 2024, titled "Climate 2050: Priority Actions to Accelerate Toward our Regional Targets".

The attached report titled "Climate 2050: Priority Actions to Accelerate Toward our Regional Targets" was received by the Climate Action Committee at its meeting of January 11, 2024. The Climate Action Committee added a recommendation as presented below in underline style, and forwarded the report to the MVRD Board at its meeting of January 26, 2024. The MVRD Board passed the following resolutions:

That the MVRD Board:

- a) receive for information the report dated December 15, 2023, titled "Climate 2050: Priority Actions to Accelerate Toward our Regional Targets"; and
- b) direct staff to forward a copy of the report dated December 15, 2023, titled "Climate 2050: Priority Actions to Accelerate Toward our Regional Targets" to the Caucus of Committee Chairs for discussion and information.

The report is now being presented to the Caucus of Committee Chairs for information.

Climate Action Committee members identified the importance of a broad and inclusive discussion on the priority actions identified in the report, in the context of affordability and housing considerations, and a desire for all standing committees of the Board to be aware of, and understand the criticality of, these priority actions in advancing substantive climate action toward the Board-adopted climate action plans and targets.

Staff have updated the slides presented to the Climate Action Committee for the purpose of this meeting, to respond to some of the Board's comments at the open MVRD Board meeting of 2024 January 26, arising from discussion of item E2.2. "Proposed Regulatory Approach to Reduce Greenhouse Gas Emissions from Existing Large Buildings: Phase 2 Engagement", which also have relevance for this report.

ATTACHMENTS

1. "Climate 2050: Priority Actions to Accelerate Toward our Regional Targets", dated December 15, 2023.
2. Presentation

To: Climate Action Committee

From: Lise Townsend, Division Manager, Air Quality and Climate Action Policy
Jason Emmert, Program Manager Regional Climate Action Policy,
Air Quality and Climate Action Services

Date: December 15, 2023

Meeting Date: January 11, 2024

Subject: **Climate 2050: Priority Actions to Accelerate Toward our Regional Targets**

RECOMMENDATION

That the MVRD Board receive for information the report dated December 15, 2023, titled “Climate 2050: Priority Actions to Accelerate Toward our Regional Targets”.

EXECUTIVE SUMMARY

Metro Vancouver, alongside other similar jurisdictions, is at a critical juncture: The MVRD Board has adopted the necessary targets and plans aligned with the global science to avoid the worst impacts of climate change. The pathway to a zero-emissions and resilient region – the technology, regulations, and investments – is well understood. Metro Vancouver’s *Clean Air Plan* and *Climate 2050* strategy and supporting Roadmaps outline the necessary actions and roles. The next step is to move swiftly from comprehensive planning to bold leadership through implementation. This report identifies priority Big Moves needed to accelerate toward the Board-adopted greenhouse gas (GHG) emissions reduction targets.

For Metro Vancouver, these are:

1. Developing and adopting a regional GHG emission regulation for existing large **buildings**
2. Developing and adopting regional regulations for shifting to sustainable **transportation**
3. Developing and adopting regional GHG emission regulations for **industry**
4. Strong regional advocacy for the transition to clean, renewable, and resilient **energy**

For member jurisdictions priority actions that complement the above include:

1. Zero Carbon Step Code, EV-ready bylaws, and support for existing buildings regulations
2. Community plans, zoning, and infrastructure to enable sustainable transportation
3. Collaboration on advocacy for clean, renewable energy policy

Collectively, the Big Moves for buildings and transportation, together with supporting policies and investments from other orders of government, could reduce regional emissions by up to 6 million tonnes per year by 2050, and up to 2.8 million tonnes by 2030 (40 per cent of the 2030 target). In this fiscally challenging time, affordability and equity are key considerations; it is imperative that regulatory measures are grounded with related supportive policies. Without these Big Moves, the region will not meet its climate action targets. Staff will be seeking direction from the MVRD Board on these priority Big Moves and other *Climate 2050* actions in the near future.

PURPOSE

This report highlights the biggest near-term priorities for reducing GHG emissions for Metro Vancouver and member jurisdictions. These Big Moves are identified in Board-adopted plans, and in municipal climate plans. The intent of this report is to support the Board in its decision-making and communications with external agencies and partners.

BACKGROUND

Metro Vancouver has committed to targets and actions to address climate change in the *Clean Air Plan*, *Climate 2050*, *Metro 2050*, and TransLink's *Transport 2050*. Climate Action is one of the five Strategic Directions in the 2022-2026 *Board Strategic Plan*. Implementation of these plans is underway, however, action must be accelerated to meet the Board-adopted 2030 and 2050 targets. Decisive and coordinated effort by all orders of government is needed in the face of challenges ranging from continued expansion of fossil fuel industries to low climate literacy (Reference 1).

Metro Vancouver is authorized by the Province's *Environmental Management Act* to regulate or prohibit the discharge of air contaminants. GHG emissions are considered to be air contaminants because they can harm public health and the environment. Metro Vancouver also collaborates with and advocates to other orders of government on emissions reduction policies. Stringent regulations that reduce GHG emissions at the source are proven to be among the most effective policy instruments, in combination with supporting policies and programs such as incentives and infrastructure investments (References 2 & 3).

This report highlights priority near-term Big Moves among the actions in Board-endorsed plans for Metro Vancouver and member jurisdictions, which have the potential to substantially reduce GHG emissions and advance the region toward its adopted climate targets.

BIG MOVES FOR METRO VANCOUVER IN 2024 TO 2026

Metro Vancouver staff have heard that elected officials are seeking clarification about the biggest opportunity areas among the Board-approved *Climate 2050* Roadmaps. While all actions in the Roadmaps are necessary and work together, swiftly adopting and implementing the Big Moves highlighted below can significantly accelerate progress toward the regional GHG reduction targets.

Regional GHG Emission Regulation for Existing Large Buildings

Buildings are the second-largest source of regional GHG emissions, yet there are no regionally applicable regulations for reducing emissions from existing buildings. Of the total approximately 450,000 buildings in the region, two-thirds will still be in use in 2050. Upgrading buildings can reduce health-harming air contaminants, reduce over-heating in summer, and create safer, more comfortable spaces that cost less to heat and cool.

Big Move 1.1 in the *Climate 2050 Buildings Roadmap* proposes a regulation to reduce greenhouse gas emissions from existing large buildings that would be implemented through the Board's adoption of a regional regulation.

Affordability is being addressed by focusing on the largest, professionally-managed retail and office buildings first, and providing support and resources for building owners and managers, including the Retrofit Accelerator, a partnership with the Zero Emissions Innovation Centre. Retrofits can also provide a return on investment through energy savings and health benefits. The proposed regulation would complement pending federal and provincial regulations and programs, as well as a bylaw recently enacted by the City of Vancouver, and establish a regionally consistent approach.

According to preliminary analysis, full and rapidly-scaled implementation of a comprehensive regulation for existing large buildings could reduce this sector's emissions by approximately 6 per cent (85,000 tonnes per year) by 2030, and by 21 per cent (approximately 300,000 tonnes per year) by 2050. This would be additional to reduction achieved by existing policies and would be amplified by complementary pending policies including provincial equipment efficiency standards.

Report E.3 in this agenda package outlines the regulatory proposal supporting this Big Move, and seeks Board direction to proceed with the second phase of engagement throughout 2024. Staff would report back to the Climate Action Committee and Board with outcomes of the engagement and a proposed regulation in early 2025.

Regional Regulations for Shifting to Sustainable Transportation

On-road transportation is the largest source of regional GHG emissions. Alongside vehicle electrification, reducing these emissions requires shifting more trips to walking, cycling, and transit, which also improves health, reduces vehicle congestion, and supports low-cost transportation options. This shift requires expanded funding and investment in transit and active transportation. Further, while the electric vehicle (EV) transition is progressing rapidly, many people still do not have the option to own an EV due to their income or a lack of home or workplace charging.

To address these challenges, Metro Vancouver is working with TransLink on a project to understand what combination of supportive and regulatory policies can best achieve the region's GHG targets for passenger vehicles, alongside new funding mechanisms for transit infrastructure. This project would support implementation of Big Move 2.1 in the *Climate 2050 Transportation Roadmap*, focused on regional passenger vehicle requirements, as well as other actions in Strategies 1 and 2, focused on shifting to walking, cycling and transit, and supporting EV adoption.

According to preliminary analysis, stringent vehicle emissions regulations, combined with expansion of transit, could reduce passenger vehicle emissions by up to 20 per cent (approximately 800,000 tonnes per year) by 2030. This would be additional to significant reduction achieved through existing policies including the Zero Emissions Vehicle Act and an escalating carbon tax. By 2050, the combined effect of these regulations could achieve near-zero emissions for all passenger trips.

Affordability is being addressed in this project by considering financial mechanisms that support the most sustainable and efficient transportation choices with increased funding for transit, active transportation, and measures to improve access to EVs for lower-income households.

Staff are preparing to bring a report addressing this Big Move and related actions to the Climate Action Committee in early 2024.

Regional GHG Emission Regulations for Industry

Industrial facilities and non-road equipment in Metro Vancouver account for 25 per cent of regional GHG emissions or 3.6 million tonnes per year. Metro Vancouver already regulates health-harming air contaminant emissions and GHGs from some of these sources, among 150 permitted facilities and over 3,000 industrial and commercial boilers, heaters, and non-road equipment. Integrating GHGs in Metro Vancouver's industrial regulatory programs has the potential to achieve more holistic outcomes to reduce both health-harming air contaminants and GHG emissions.

Big Move 1.2 in the *Climate 2050 Industry and Business Roadmap* would apply Metro Vancouver's regulatory authority to address air contaminant emissions to the reduction of GHG emissions from industrial sources.

This Big Move complements provincial regulations including the Output-Based Pricing System, methane regulations, and a proposed provincial oil and gas sector emissions cap.

This Big Move is being addressed with research to evaluate opportunities to improve emissions regulations for the industrial sector and the appropriate role for Metro Vancouver, including estimating the potential GHG reduction impact. Staff anticipate bringing forward policy recommendations for consideration by the Committee and Board in 2025.

Regional Advocacy for the Transition to Clean, Renewable, and Resilient Energy

A clean and renewable energy transition underpins the other Big Moves in the *Climate 2050 Roadmap* actions, including those highlighted in this report. This transition involves reducing energy demand and shifting to 100 per cent clean, renewable energy to heat our homes, move people and goods, and power industrial processes. Clear and comprehensive provincial policy is needed to ensure that the transition is successful, fair, and equitable.

Metro Vancouver's continued and strengthened advocacy and participation in provincial energy policy discussions is supported by *Climate 2050 Energy Roadmap* Strategy 1, "Plan for the Transition to Clean, Renewable, and Resilient Energy", Strategy 2, "Accelerate Electrification", and Strategy 4, "Limit Expansion of Fossil Fuel Production".

As directed by the Board, Metro Vancouver is engaging with relevant BC Utilities Commission processes, in collaboration with several member jurisdictions, and advocating to the Province for energy policies that support *Climate 2050* and *CleanBC* targets. This includes calling for improved coordination of long-term energy planning by Fortis BC and BC Hydro, and advocating for reform of the BC Utilities Commission with a strong climate mandate. Pending provincial energy policies, such as the Climate-Aligned Energy Framework and a GHG emissions cap for gas utilities, have the potential to support and accelerate the clean energy transition, provided they are aligned with science-based targets and best practices as reflected in *Climate 2050*.

Recognizing that clean, renewable electricity is a mainstay of the energy transition in the province and the region, staff are also engaging with BC Hydro on their policies, and partnering on innovative approaches to support the region's energy needs. Staff are working with BC Hydro on a guiding document that would clarify shared objectives and opportunities for the two organizations to collaborate in advancing energy efficiency and electrification.

In 2024, staff will provide updates on these initiatives and seek further direction from the Board to advocate to the Province for stronger legislation for a coordinated and efficient transition to clean and renewable energy.

BIG MOVES FOR MEMBER JURISDICTIONS FOR 2024 TO 2026

In addition to the Big Moves for Metro Vancouver outlined above, member jurisdictions have critical roles to play. Many have adopted GHG reduction targets aligned with those of Metro Vancouver, supported by comprehensive climate action plans. Municipal Big Moves with significant potential to accelerate progress toward regional climate targets include the following:

Zero Carbon Step Code, EV-ready Bylaws, and Support for Existing Building Regulations

Bylaws requiring new buildings to meet the highest level of the provincial Zero Carbon Step Code at the earliest possible date, and to include EV charging infrastructure, reduce the need for (and cost of) retrofitting buildings, provide for cooling with efficient and zero-emissions heat pumps, and enable residents to own an EV. These outcomes complement regional Big Moves outlined above.

Transitioning existing buildings to zero-emissions will require a coordinated effort across all orders of government. Although municipalities lack the authority to regulate GHG emissions in existing buildings (a gap that Metro Vancouver's proposed regulation would seek, in part, to fill), they can partner with Metro Vancouver on the proposed regulation for large buildings (e.g., to share data and communicate with building owners), support programs for small building retrofits (e.g., the North Shore's "Jump on a Heat Pump" Program, Reference 4), develop partnerships and strategic plans (e.g., the City of Burnaby's Zero-Emissions Building Retrofit Strategy, Reference 5), and collaborate on advocacy to senior governments for retrofit incentives.

These Big Moves are included in Metro Vancouver's *Climate 2050 Buildings Roadmap* (Big Move 1.3), *Transportation Roadmap* (2.6), and in various municipal climate action plans. Report E.4 provides an update on Zero Carbon Step Code adoption by member jurisdictions to date, and an update on municipal adoption of EV-ready bylaws will be included in a future report.

Community Plans, Zoning, and Infrastructure to Enable Sustainable Transportation

Municipalities can further enable a shift to sustainable modes with land use planning that focuses more growth close to frequent transit and amenities, consistent with *Metro 2050*, and as outlined in many Official Community Plans (OCPs) and OCP updates. Investing in more protected and connected infrastructure for walking and cycling, and reallocating road space for transit-priority infrastructure and active transportation, can unlock latent demand for these transportation options and reduce vehicle emissions. Together, these measures also improve health, reduce congestion, and make neighbourhoods more vibrant, safer, and greener.

These Big Moves are identified in Metro Vancouver's *Climate 2050 Transportation Roadmap* (Big Move 1.3), *Metro 2050*, TransLink's *Transport 2050* 10-year priorities, and in various municipal climate action and land use plans.

Collaboration on Advocacy for Clean, Renewable Energy Policy

Metro Vancouver's advocacy on provincial energy policies and involvement in the BC Utilities Commissions proceedings, described above, was strengthened through collaboration with several member municipalities. Continued and strengthened collaboration is needed to advocate for the provincial and federal government policies, infrastructure investments, and incentives needed to support a rapid, efficient, and fair transition to clean and renewable energy.

BIG MOVES' EMISSIONS REDUCTION POTENTIAL

The emissions that could be reduced by collectively implementing these Big Moves depends on the timing and scale of their implementation. Comprehensive regulations that reduce emissions from large buildings and passenger vehicles, together with supporting programs and complementary regulations by other orders of government, could reduce up to six million tonnes of GHG emissions annually by 2050. As a period of phasing-in is required, early adoption of these regulations is critical to minimize cumulative emissions in the interval. If full implementation of these policies, were to begin in the next few years they could reduce emissions by up to 2.8 million tonnes annually by 2030, approximately 40 per cent of the 2030 target.

NEXT STEPS

Staff will be seeking the Board's direction for the Big Moves noted above for Metro Vancouver in 2024 and 2025. In this timeframe, the remaining Climate 2050 Roadmaps will also be provided for the Board's consideration and endorsement, including for *Land Use and Urban Form*, *Human Health and Wellbeing*, *Waste*, and *Water and Wastewater Infrastructure*. As previously directed by the Board, options for enhancements to *Metro 2050* to strengthen climate action will also be advanced for the Board's consideration in 2024.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The resources supporting initial policy development for the Big Moves described in this report are approved within current program budgets. Financial implications for implementing these initiatives will be outlined for the Board's information and approval as appropriate in upcoming reports. New or updated regulatory programs implemented by Metro Vancouver will be consistent with Metro Vancouver's practice of assigning fees to entities responsible for air contaminant discharges, recognizing their environmental and societal impacts (Reference 6). Cost recovery to support program implementation would also be achieved through administrative fees.

Potential financial benefits associated with the highlighted Big Moves can also include energy cost savings resulting from building retrofits, time savings and increased productivity from reduced

traffic congestion, and health benefits associated with improved air quality. The potential regional health benefits from implementing the *Clean Air Plan* between 2020 and 2030 were estimated at up to \$1.6 billion. Finally, reducing GHG emissions to meet science-based climate targets can mitigate the financial costs of climate impacts to society and households (Reference 7).

CONCLUSION

Meeting Metro Vancouver's approved climate targets will require decisive, coordinated and accelerated effort among all orders of government and partner agencies. The MVRD Board has an opportunity to continue to demonstrate bold leadership by leveraging Metro Vancouver's regulatory and advocacy roles.

This report highlights priority Big Moves from Metro Vancouver's approved plans to address four issue areas with the potential to significantly reduce regional GHG emissions and health-harming air contaminants from buildings, transportation, industry, and the energy transition. Specific regulatory proposals and advocacy efforts supporting these priorities will be advanced for the Board's consideration and direction in upcoming reports in 2024 and 2025.

REFERENCES

1. Metro Vancouver [Climate 2050 Annual Report 2022/2023](#)
2. Hoppe, J. et al. 2023. [Three Decades of Climate Mitigation Policy: What Has It Delivered?](#) Annual Reviews of Environment and Resources 48 (2023)
3. Axen, J. et al., 2020. [Crafting strong, integrated policy mixes for deep CO₂ mitigation in road transport](#). Nature Climate Change 10 (2020)
4. North Shore [Jump on a New Heat Pump](#) Program
5. City of Burnaby – [Zero Emissions Building Retrofit Strategy](#)
6. [Metro Vancouver – Amendments to Air Quality Permit and Regulatory Fees](#)
7. Canadian Climate Institute, 2022. [The GDP costs of climate change for Canada](#)

63871826

Attachment 2



Climate 2050: Priority Actions to Accelerate Toward our Regional Targets

CAUCUS OF COMMITTEE CHAIRS

Conor Reynolds
Director, Air Quality & Climate Action Services

Lise Townsend
Division Manager, Air Quality & Climate Action Policy
Air Quality & Climate Action Services

February 21, 2024

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WHY ARE WE HERE TODAY?

Report responds to Climate Action Committee request to identify the priority actions needed from Metro Vancouver and members

CAC added a recommendation to bring it to Caucus of Committee Chairs to broaden the discussion and understanding of “BIG MOVES” that the Board will consider in this term

At the last Board meeting, staff heard concerns about:

- ensuring regulations are within Metro Vancouver’s mandate
- avoiding duplication with the Province
- charging fees to change behaviour; in conflict with affordability

Staff are incorporating this input into all climate policy work

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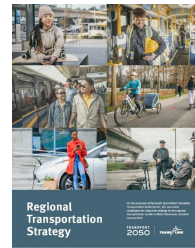
GEARING UP

Strengths

- ✓ Approved plans
- ✓ Science-based targets
- ✓ Delegated authority
- ✓ Multi-government alignment
- ✓ Established technology and practices

Challenges

- ~ Multiple priorities
- ~ Energy transition
- ~ Misinformation and distrust



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WHAT DO WE HAVE TO GAIN?

Strong policies based on **collaboration and coordination** that leverage Metro Vancouver's **role** and **authority** can:

- Protect health and safety and build resiliency for residents (e.g. heat domes, floods)
- Foster economic innovation and new jobs (e.g. risk of moving too slowly)
- Reduce emissions and build resiliency: Climate Action

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WHY PLAN FOR IMPACTS AND REDUCE EMISSIONS?

E.g. zero-emissions, climate-safe buildings

If global emissions continue to climb,
by the 2050s:

Number of heat wave days per year

- historically 1 → **16** (up to **46**)

Number of hot nights (>16°C) per year

- historically 6 → **57** (up to **92**)

321 people in the region died in 2021 due to
the heat dome, most in their own homes

New Vancouver climate projections reveal 'big public health risk'

Vancouver climate projections shows scorching summers, a spike in extreme rainfall and a steep decline in snowfall

By Stefan Labbé, Glacier Media | February 8, 2024, 7:45am



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AFFORDABILITY

- Critical / top of mind issue for residents; 'death by a thousand cuts' with each additional charge
- Regulations needed to *support* cost-effective solutions
- Policy options must consider:
 - Equity and fairness
 - Costs and benefits analysis
 - Climate impacts on household costs
 - Planning ahead to help minimize cost impacts

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METRO VANCOUVER'S REGULATORY AUTHORITY

for air pollution control and air quality management

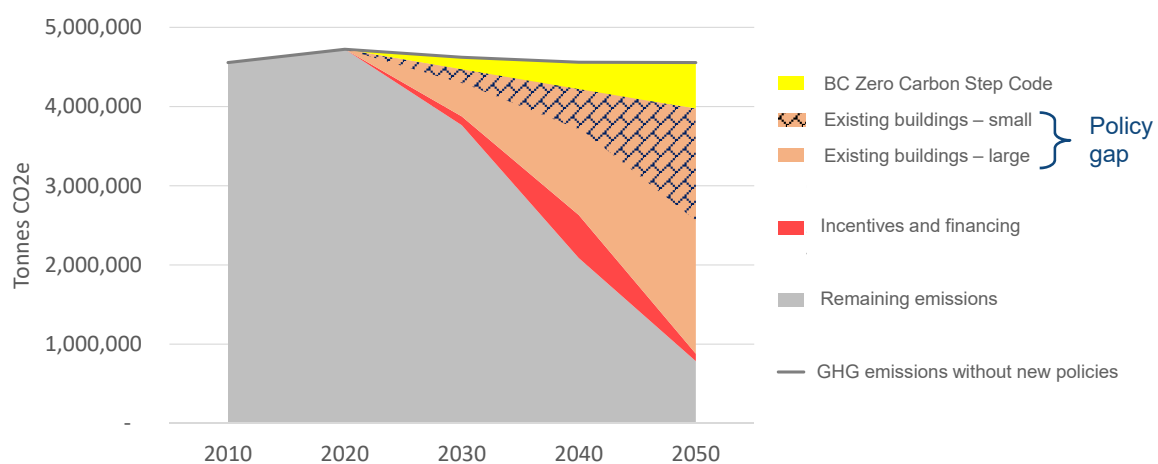
Delegated authority under BC *Environmental Management Act* includes regulating discharge of air contaminants – including GHGs

- Prohibit the discharge of air contaminants except in compliance with bylaws
- Regulated air contaminants include: particulate matter, hazardous air pollutants, VOCs, NO_x, SO₂, methane, GHGs
- Current MVRD Board adopted air quality and emissions bylaws include:

- | | |
|--------------------------------|-----------------------------------|
| • Air Quality Management Bylaw | • Boilers & Process Heaters |
| • Air Quality Management Fees | • Non-Road Diesel Engines |
| • Automotive Refinishing | • Residential Indoor Wood Burning |
| • Concrete Products | • Agricultural Boilers |
| • Gasoline Distribution | • Open Burning |

2

ESTIMATED IMPACT OF BUILDINGS' POLICIES



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PRIORITY REGIONAL BIG MOVES (2024-2026)



Existing **buildings**



Regional **transportation**



Industry regulatory programs



Advocacy for the clean
energy transition



Impact is amplified by complementary Big Moves by member jurisdictions,
and supporting policies & programs by other orders of government

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Existing large buildings GHG regulation

Member jurisdictions



Zero-carbon new construction

Support for existing building regulation






450,000 existing buildings

9,000 existing large buildings

2% of buildings = 35% of regional
building GHG emissions


4,000+ new buildings each year



<p>metrovanancouver TRANS LINK</p>  <p>Regional sustainable transportation regulations</p>	<p>32% of regional GHG emissions</p> <p>8 million trips per day (70% by light duty vehicles)</p> <p>\$20 billion needed for transit</p>
<p>Member jurisdictions</p> <div>  Community plans & zoning </div> <div>  Transit-priority & active transport infrastructure </div> <div>  EV-ready new construction </div>	

<p>metrovanancouver</p>  <p>Expanded industry regulatory programs to include GHGs</p>	<p>25% of regional GHG emissions</p> <p>150 permitted facilities</p> <p>>3,000 boilers, heaters, non-road engines</p>
<p>Scope of work in 2024 (Metro Vancouver)</p> <p>Research opportunities to improve emissions regulations for industry and appropriate role for Metro Vancouver</p>	

metrovanancouver Member jurisdictions




Collaborative regional advocacy for clean & renewable energy transition

Fossil fuels supply 75% of energy in region







90% of regional GHG emissions are from burning fossil fuels

Metro Van's provincial advocacy to date includes:

- Coordinated utility planning
- Climate-aligned energy framework
- Alignment with Climate 2050 & CleanBC



PRIORITY BIG MOVES: MEMBER JURISDICTIONS

 <p>Buildings</p>	 <p>Zero Carbon Step Code, and support for existing buildings regulations</p>
 <p>Transportation</p>	 <p>Community plans; zoning; EV-ready bylaws; infrastructure for sustainable transportation</p>
 <p>Energy Transition</p>	 <p>Advocacy for decisions supporting the clean energy transition</p>

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To: Caucus of Committee Chairs

From: Jonathan Cote, Deputy General Manager, Regional Planning and Housing Development, Regional Planning and Housing Services, and
Conor Reynolds, Director, Climate Action and Air Quality, Air Quality and Climate Action Services

Date: January 30, 2024 Meeting Date: February 21, 2024

Subject: **2024 Regional District Sustainability Innovation Fund Applications**

RECOMMENDATION

That the MVRD Board approve the allocation from the Regional District Sustainability Innovation Fund for the following projects:

- a) Rental Housing Blueprint: Streamlining Multi-Family Affordable Rental Housing Delivery Through Standardization and Modern Construction Methods for \$2,130,000 from 2024 to 2026;
 - b) Comprehensive Assessment and Regulation of Expanded Group of Greenhouse Gases (CARE-3G) for \$230,000 from 2024 to 2025; and
 - c) Feasibility Study for a Pilot Microgrid Project in the Metro Vancouver Region for \$200,000 from 2024 to 2025.
-

EXECUTIVE SUMMARY

The Caucus of Committee Chairs is responsible for overseeing the Metro Vancouver Sustainability Innovation Funds, and for making funding recommendations to the respective Metro Vancouver Boards. Staff review and evaluate all proposals that are submitted for consideration. This report presents three projects recommended for funding, totaling \$2,560,000 over three years, which would be funded through the Regional District Sustainability Innovation Fund. The projects cover a range of climate action areas and affordable housing policy initiatives.

PURPOSE

To present three projects recommended for Sustainability Innovation Funding for the Caucus of Committee Chairs' and the MVRD Board's consideration.

BACKGROUND

The Regional District Sustainability Innovation Fund (the Fund) was created by the MVRD Board in 2004 to provide financial support to Regional District projects that contribute to the region's sustainability. The MVRD Board adopted the *Regional District Sustainability Innovation Fund Policy* in 2014, with further amendments in 2016 and 2021, to guide the use and management of the Fund. The policy describes the process of generating, submitting, evaluating and recommending proposals for funding each year.

REGIONAL DISTRICT SUSTAINABILITY INNOVATION FUND POLICY

On an annual basis, Regional District projects are submitted to an internal staff Advisory Committee and Steering Committee, representing a cross-section of the organization, to evaluate projects and initiatives based on the Fund's evaluation criteria. As defined in the policy, projects need to fulfill the following criteria:

- Be overseen by the MVRD;
- Be consistent with the authority and responsibility of the MVRD, which includes air quality management, regional parks, housing, growth management, and inter-municipal initiatives such as ecological health and climate change mitigation and adaptation;
- Be consistent with the objectives of the *Board Strategic Plan* or other regional district plans as applicable;
- Consider partnerships including, but not limited to, member jurisdictions, academic institutions, non-governmental organizations, and community groups;
- Result in a positive contribution, in the form of tangible results and/or measurable benefits, to the sustainability of the region; and
- Demonstrate innovation and facilitate action.

The Caucus of Committee Chairs receives an annual update report on the approved projects from previous years that have been supported by the Fund. The update report includes the deliverables, outcomes, and the measurable benefits of these projects to the region's sustainability. A summary of past projects can be found on the Sustainability Innovation Program website (Reference 1).

2023-2024 APPLICATION PROCESS

An internal call for proposals closed on October 24, 2023 and three Regional District proposals were considered by the cross-departmental Service Department Advisory Committee and Sustainability Innovation Fund Steering Committee, comprised of representatives from different departments within Metro Vancouver.

Staff evaluated the submissions and confirmed that the three applications strongly align with promoting regional sustainability and innovation. Three projects are recommended for funding at this time. They are listed in the table below with additional details provided in the executive summaries (attached).

Recommended Allocation from the Water Sustainability Innovation Fund		
Project Title	Year	Amount Requested
Rental Housing Blueprint: Streamlining Multi-Family Affordable Rental Housing Delivery Through Standardization and Modern Construction Methods	2024-2026	\$2,130,000
Comprehensive Assessment and Regulation of Expanded Group of Greenhouse Gases (CARE-3G)	2024-2025	\$230,000
Feasibility Study for a Pilot Microgrid Project in the Metro Vancouver Region	2024-2025	\$200,000
Total		\$2,560,000

ALTERNATIVES

1. That the MVRD Board approve the allocation from the Regional District Sustainability Innovation Fund for the following projects:
 - a) Rental Housing Blueprint: Streamlining Multi-Family Affordable Rental Housing Delivery Through Standardization and Modern Construction Methods for \$2,130,000 from 2024 to 2026;
 - b) Comprehensive Assessment and Regulation of Expanded Group of Greenhouse Gases (CARE-3G) for \$230,000 from 2024 to 2025; and
 - c) Feasibility Study for a Pilot Microgrid Project in the Metro Vancouver Region for \$200,000 from 2024 to 2025.
2. That the Caucus of Committee Chairs receive for information the report dated January 30, 2024 titled "Regional District Sustainability Innovation Fund Applications" and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

If the Board approves Alternative 1, \$2,560,000 for the three applications will be disbursed from the Sustainability Innovation Fund over three years. The Fund has sufficient budget to support Alternative 1. The approved applications will be incorporated into the applicable work plans and budgets.

CONCLUSION

Staff recommend Alternative 1. Additional details of each project are attached.

ATTACHMENTS

1. Regional District Sustainability Fund Presentation
2. Regional District Sustainability Fund Applications

REFERENCES

<https://metrovancover.org/about-us/sustainability-innovation-fund>

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Attachment 1



Pandora Park

Regional District SIF Applications

PROPOSED PROJECTS FOR 2024

Presenters: Jessica Hayes, Marina Richter, Jason Emmert

COF Meeting – February 21, 2024
65745021

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REGIONAL DISTRICT APPLICATIONS

Housing	Years	Budget
Rental Housing Blueprint	2024-2026	\$2,130,000
Air Quality and Climate Action	Years	Budget
Comprehensive Assessment and Regulation of Expanded Group of Greenhouse Gases	2024-2025	\$230,000
Feasibility Study for a Pilot Microgrid Project in the Metro Vancouver Region	2024-2025	\$200,000

Total budget: \$2,560,000

Projected fund balance at end of 2024: \$4.99 million

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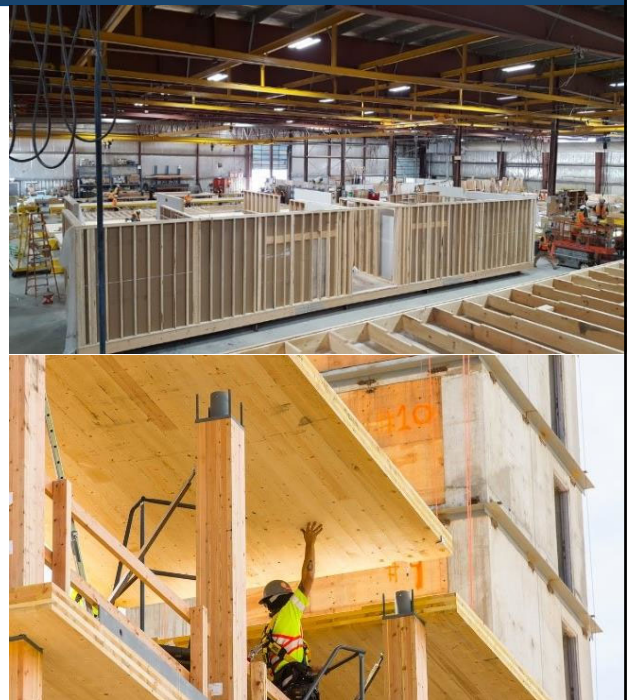
RENTAL HOUSING BLUEPRINT

2024-2026: \$2,130,000

Purpose:

To streamline multi-family affordable rental housing delivery through standardization and modern construction methods

- Explore standardized regulatory approaches
- Develop pre-approved designs
- MVH demonstration project



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COMPREHENSIVE ASSESSMENT AND REGULATION OF EXPANDED GROUP OF GREENHOUSE GASES

2024-2025: \$230,000

Purpose:

- To evaluate climate, health, and other environmental effects of an expanded group of air pollutants with global warming potential
- To develop strategies to regulate and reduce the most impactful of these air pollutants



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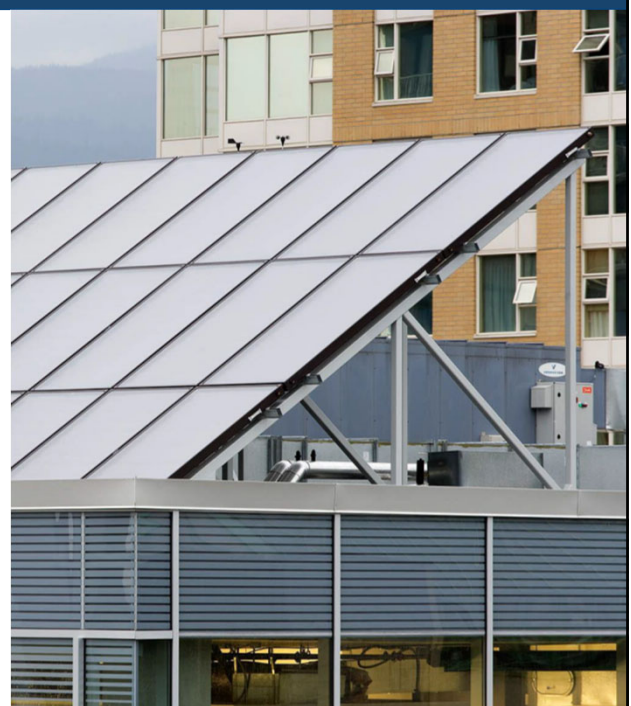
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FEASIBILITY STUDY FOR A PILOT MICROGRID PROJECT IN THE METRO VANCOUVER REGION

2024-2025: \$200,000

Purpose:

To evaluate the feasibility of supplying clean, renewable, and reliable energy in the unlikely event of significant damages to the main BC Hydro grid, and support energy generation during periods of high electrical demand.



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Vancouver

Thank you

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Sustainability Innovation Fund: Regional District Executive Summary

Project title:

Rental Housing Blueprint: Streamlining Multi-Family Affordable Rental Housing Delivery Through Standardization and Modern Construction Methods

Amount requested:

2024: \$497,500

2025: \$585,000

2026: \$1,047,500

Total: \$2,130,000

Purpose:

To collaborate with the Province of BC on open source, **pre-approved designs/reference plans** for six-storey affordable rental housing that could be delivered through modern methods of construction (e.g., off-site construction, modular construction, prefabrication, and factory-built components, as opposed to traditional woodframe on-site construction). As well, to explore **standardized regulatory approaches** that local governments can opt into, to facilitate the construction of mid-rise rental buildings (e.g., standardized guidelines and zoning regulations). The first two phases of the project would advance an innovative 'Rental Housing Blueprint' to streamline the delivery of multi-family affordable rental housing. Phases 1 and 2 will additionally align with new provincial housing legislation requiring that local governments update their OCPs and zoning bylaws to pre-zone lands in order to accommodate 20-year anticipated housing needs.

Phase 3 of the project would be to undertake a demonstration project on one of Metro Vancouver Housing's sites, to realize the standardized design using modern construction methods (e.g., off-site construction, prefabrication, etc.), and test the effectiveness and impact of the 'Rental Housing Blueprint'.

Project objectives:

1. Develop Standardized Regulations

- Convene municipal partners and other key stakeholders in workshops and targeted engagements to capture shared objectives and challenges, with the aim of developing standardized, user-friendly and succinct opt-in design guidelines and zoning regulations for mid-rise rental housing buildings.

2. Open Source Rental Building Design

- Develop criteria for pre-approved building designs, ensuring consistency with provincial and federal requirements, environmental performance, and sociability/livability objectives.
- Develop open source rental building designs which meet the guidelines, that can be easily scaled for larger and smaller sites, and realized using modern methods of construction, such as off-site construction (e.g., prefabrication of building components), and modular design (e.g., designing units as efficient individual modules)

3. Demonstration Project:

- Apply 'Rental Housing Blueprint' to a MVH redevelopment site using modern construction methods.

Contributions to regional sustainability:

- **Environmental**
 - Lowered embodied carbon
 - Reduced GHG intensity
 - Reduced construction waste
- **Social/Community**
 - Increased social interaction in multi-family housing
 - Reduced neighbourhood disruption during construction
 - Increased housing supply through expedited delivery
- **Economic/Financial**
 - Reduced design costs
 - Reduced construction times
 - Increased awareness of modern methods of construction
 - Increased opportunities for job creation, growth, and transformation within the construction sector

Innovation element:

In recent years, housing delivery has been affected by unprecedented construction cost escalation, rising interest rates, and skilled trade labour shortages, factors that are driving the cost of housing higher. There is increased recognition that new, innovative approaches are required to facilitate the expedient and efficient delivery of affordable, sustainable rental housing. This project will aim to remove regulatory barriers, and use public sector knowledge and leadership to help drive incremental improvements in MVH's own projects and changes at the system level to improve productivity in construction and help meet the significant demand for rental housing in the Metro Vancouver region. The project will be an opportunity for Metro Vancouver Housing to test modern construction methods, and demonstrate opportunities to improve efficiency and sustainability in housing construction.

Tangible benefits and outcomes:

- Reducing regulatory barriers and timeline delays to streamline the delivery of rental housing buildings, and ultimately increase rental housing supply;
- Spurring increased investment in off-site construction, resulting in (long term) lowered cost and time for delivery of housing, with significant economic and climate impacts;
- Achieving net zero / Step Code 4 standards through the most cost effective means and incorporating low embodied carbon materials (wood or mass timber elements);
- Incorporating the most current knowledge of building designs and elements to encourage community resilience through resident interaction and reduce social isolation;
- Contributing to a local cluster / community of practice and incubating additional manufacturers and design firms specializing in modern methods of construction in our region.

Members and other partners:

- Senior government
 - Province of British Columbia: Office of Mass Timber Implementation, BC Builds, Office of Housing and Construction Standards, Ministry of Housing, BC Housing.
 - CMHC
- Member jurisdictions interested in exploring off-site construction and pre-approved plans, or jurisdictions where forthcoming MVH projects are planned
- Academia and thought leaders
- Industry partners (e.g., construction sector, manufacturers of prefabricated and modular housing)

Sustainability Innovation Fund: Regional District Executive Summary

Project title:

Comprehensive Assessment and Regulation of Expanded Group of Greenhouse Gases (CARE-3G)

Amount requested:

2024: \$100,000

2025: \$130,000

Total: \$230,000

Purpose:

To investigate an expanded group of air pollutants with global warming potential and other health and environmental effects, and to develop air emission management strategies for mitigating their effects.

Project objectives:

- Identify sources, quantities, and impacts of GHG contaminants with global warming potential, as listed in the IPCC Sixth Assessment Report, and other health and environmental effects.
- Develop innovative management strategies to control or regulate these air contaminants.
- Develop policies, practices, and tools in collaboration with federal and provincial governments and institutions, such as Technical Safety BC and technical and professional associations.

Contributions to regional sustainability:

Better understanding and management of greenhouse gas air contaminants is critical for mitigating climate change and addressing air quality challenges. While carbon dioxide and methane are already subject to many policies and regulations, other greenhouse gases, including hydrocarbons and halogenated hydrocarbons, are not specifically controlled or regulated for their global warming potential under the current air emission management framework. These air contaminants are often used industrially, as refrigerants, solvents, or chemical reagents. In addition to their highly variable global warming potentials, they also have multiple physical and chemical properties that result in different health and environmental impacts beyond contributing to climate change. The proposed study will evaluate how these greenhouse gas air contaminants impact public health, environment, and climate, and will help develop regional emission management strategies to mitigate those impacts.

Innovation element:

The study will cover gaps in existing knowledge and regulatory frameworks addressing contributions from GHG air contaminants to climate change and degraded air quality. The study will categorize, prioritize, and, if impactful, identify ways to control or regulate these air contaminants taking into account multiple complex pathways of their impacts.

Tangible benefits and outcomes:

The study will explore development of a broader Metro Vancouver air emission management framework, possibly including new emission regulations and enhanced regulatory policies, and create strategies to reduce emissions of an expanded group of GHG air contaminants. This group of GHG air contaminants is not regulated currently for its contribution to climate change and the impact of regional emissions are not fully understood.

Members and other partners:

Potential partnership with federal and provincial governments and institutions, including Technical Safety BC, which has proposed to research refrigerant leakage in BC and the region.

Sustainability Innovation Fund: Regional District Executive Summary

Project title:

Feasibility Study for a Pilot Microgrid Project in the Metro Vancouver Region

Amount requested:

2024: \$100,000 from SIF, \$50,000 from BC Hydro

2025: \$100,000 from SIF, \$50,000 from BC Hydro

Total: \$200,000 from SIF

Purpose:

Metro Vancouver and BC Hydro are investigating microgrids as a method to develop climate resilience and generate clean electricity for emission reduction initiatives. This project involves a feasibility study to develop a neighbourhood microgrid pilot located in the Metro Vancouver region in partnership with BC Hydro. A microgrid would be able to supply clean, renewable, and reliable energy in the unlikely event of significant damages to the main BC Hydro grid as an emergency response measure, as well as support energy generation during periods of high electrical demand, which will help increase supply of electricity supporting electrification initiatives in the region.

Project objectives:

Ultimately, the project objective is to evaluate the feasibility of a pilot microgrid in the Metro Vancouver region. To accomplish that objective, the study would include a literature review of the state of microgrid development in BC and internationally; a development strategy for a pilot microgrid; a resource review and inventory of potential generation sources in Metro Vancouver, including from Metro Vancouver facilities; and conceptual design and business case for a pilot microgrid. Results from the study would help inform the case for development of a pilot microgrid in the region, and provide recommendations for next steps.

Contributions to regional sustainability:

Successful implementation of a microgrid would provide significant resilience and emission reduction benefits. A microgrid would ensure access to power for critical infrastructure and services during a widespread power outage, which will safeguard life, health, public safety and basic societal functioning. Moreover, a microgrid could potentially provide new distributed energy generation and storage to areas of high demand within the BC Hydro system, which could help alleviate strains on the BC Hydro system and ensure that there is sufficient clean electricity to support electrification initiatives.

Innovation element:

This project is highly innovative because it's a significant departure from traditional electricity planning. The BC Hydro system is mostly powered for one-way power flow, from the dams, to load centers such as Metro Vancouver. Microgrids will change the roles of energy consumers and electricity producers in the region, allowing them to have more localized control over energy supply. This change will help ensure that the region has access to power in the face of a global challenge such as climate change and other risks (e.g., wildfires, seismic activity). At the regional scale, this would be a paradigm shift in how electrical grids are planned and operated and the traditional roles of electricity producers including utilities like BC Hydro and consumers.

Tangible benefits and outcomes:

The resilience benefits from this project will be evaluated through cataloguing what critical infrastructure and services will have access to power during a potential widespread power outage, which previously may not have been able to function in the event of a widespread power outage. The tangible outcome would be that the neighbourhood that the microgrid services would continue to have access to power even during a widespread power outage. In terms of energy generation, the tangible outcome will be increased electricity generation from the microgrid, and the additional emission reductions associated with this new source of energy. Lastly, there could be potential economic benefits to implementing microgrids as they would offer a new business opportunity for the region.

Members and other partners:

Partner – BC Hydro

To: Caucus of Committee Chairs

From: Vanessa Anthony, Acting Director, Water Services, Policy Planning and Analysis

Date: January 30, 2024 Meeting Date: February 21, 2024

Subject: **2024 Water Sustainability Innovation Fund Applications**

RECOMMENDATION

That the GVWD Board approve the allocation from the Water Sustainability Innovation Fund for the 'Expansion of the Earthquake Early Warning (EEW) & Structural Health Monitoring (SHM) Systems' project for \$1,000,000 from 2024 to 2026.

EXECUTIVE SUMMARY

The Caucus of Committee Chairs is responsible for overseeing the Metro Vancouver Sustainability Innovation Funds, and for making all funding recommendations to the respective Metro Vancouver Board. Staff review and evaluate all proposals that are submitted for consideration. This report presents one project recommended for funding, totaling \$1,000,000, which would be funded through the Water Sustainability Innovation Fund.

PURPOSE

To present one project recommended for Sustainability Innovation Funding for the Caucus of Committee Chairs' and the GVWD Board's consideration.

BACKGROUND

The Water Sustainability Innovation Fund (the Fund) was created by the GVWD Board in 2004 to provide financial support to Water applications that contribute to the region's sustainability. The GVWD Board adopted the *Water Sustainability Innovation Fund Policy* in 2014, with further amendments in 2016 and 2021, to guide the use and management of the Fund. The Policy describes the process of generating, submitting, evaluating and recommending applications for funding each year.

WATER SUSTAINABILITY INNOVATION FUND POLICY

On an annual basis, Water Services projects are submitted to an internal staff Advisory Committee, and Steering Committee, representing a cross-section of the organization, to evaluate projects and initiatives based on the Fund's evaluation criteria. As defined in the policy, applications need to fulfill the following criteria:

- Be overseen by the GVWD;
- Be consistent with the authority and responsibility of the GVWD;
- Be consistent with the objectives of the *Drinking Water Management Plan* and/or the *Board Strategic Plan*;
- Consider partnerships including, but not limited to, member jurisdictions, academic institutions, non-governmental organizations, and community groups;

- Result in a positive contribution, in the form of tangible results and/or measurable benefits, to the sustainability of the region; and
- Demonstrate innovation and facilitate action.

The Caucus of Committee Chairs receives an annual update report on the approved applications from previous years that have become projects supported by the Fund. The update report includes the deliverables, outcomes, and the measurable benefits of these projects to the region's sustainability. A summary of past projects can be found on the Sustainability Innovation Program website (Reference 1).

2023-2024 APPLICATION PROCESS

An internal call for proposals closed on October 24, 2023, and one application from Water Services was considered by the cross-departmental Service Department Advisory Committee and Sustainability Innovation Fund Steering Committee, comprised of representatives from different departments within Metro Vancouver.

Staff evaluated the submission and confirmed that the one application strongly aligns with promoting regional sustainability and innovation. The project recommended for funding is listed in the table below. The project purpose, objectives and other details are provided in the executive summary (attached).

Recommended Allocation from the Water Sustainability Innovation Fund		
Project Title	Year	Amount Requested
Expansion of the Earthquake Early Warning (EEW) & Structural Health Monitoring (SHM) Systems	2024-2026	\$1,000,000

ALTERNATIVES

1. That the GVWD Board approve the allocation from the Water Sustainability Innovation Fund for the 'Expansion of the Earthquake Early Warning (EEW) & Structural Health Monitoring (SHM) Systems' project for \$1,000,000 from 2024 to 2026.
2. That the Caucus of Committee Chairs receive for information the report dated January 30, 2024, titled "2024 Water Sustainability Innovation Fund Applications" and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

If the Board approves Alternative 1, \$1,000,000 for the application it will be disbursed from the Water Sustainability Innovation Fund. The Fund has sufficient budget to support Alternative 1. The approved applications will be incorporated into the applicable work plans and budgets.

CONCLUSION

Staff recommend Alternative 1. The recommended project purpose, objectives and other details are attached.

ATTACHMENTS

1. Water Services Sustainability Fund Presentation

2. Water Services Sustainability Fund Application

REFERENCES

<https://metrovancover.org/about-us/sustainability-innovation-fund>

64756808

Attachment 1



Capilano Reservoir

Water Services SIF Applications

PROPOSED PROJECTS FOR 2024

Amin Kassam
Division Manager, Shared Utilities Service, Water Services

COF Meeting – February 21, 2024
65736742

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WATER SERVICES APPLICATIONS

Housing	Years	Budget
Expansion of the Earthquake Early Warning (EEW) & Structural Health Monitoring (SHM) Systems	2024-2026	\$1,000,000

Total budget: \$1,000,000

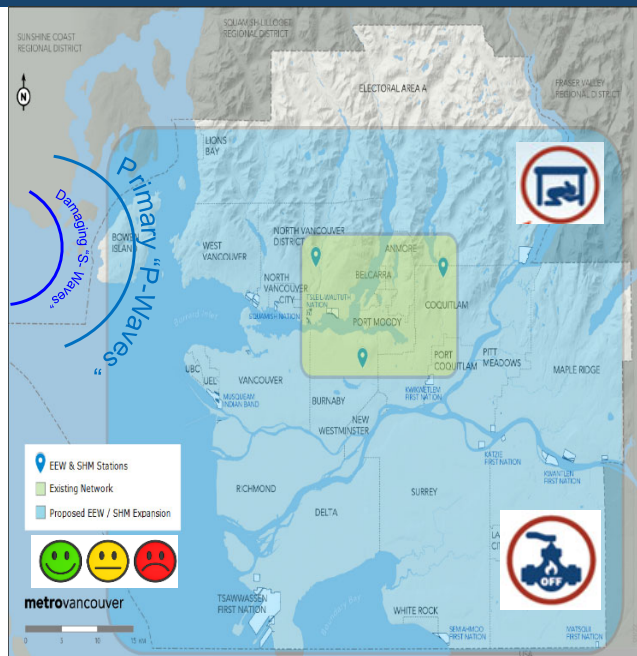
Projected fund balance at end of 2024: \$9.68 million

EXPANSION OF THE EARTHQUAKE EARLY WARNING & STRUCTURAL HEALTH MONITORING SYSTEMS

2024: \$1M over 2 years

Purpose:

Expansion of the EEW and SHM networks within critical MV water facilities to provide greater coverage, improve warning times, add water supply system robustness and resiliency, and enhance MV's pre- and post-earthquake response.



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Sustainability Innovation Fund: Water Services Executive Summary

Project title:

Expansion of the Earthquake Early Warning (EEW) & Structural Health Monitoring (SHM) Systems

Amount requested:

\$1,000,000

Purpose:

Following the successful implementation of the Earthquake Early Warning (EEW) and Structural Health Monitoring (SHM) Pilot Project in 2022 (Figure 1), an expansion of the EEW and SHM networks within critical Metro Vancouver (MV) water facilities is recommended. The EEW system is immediately increasing staff safety and will save water and mitigate damage once the signal is operationalized to take certain automatic actions (currently under investigation).

The expanded system (Figure 2), with learnings and new investigations applied, will provide greater EEW/SHM coverage, improve warning times, add water supply system robustness and resiliency, and enhance MV's pre- and post-earthquake response. The coverage, robustness and redundancy in the system will fully institutionalize the system for the GVWD and open the doors for its potential use for other critical operations at MV and for member jurisdictions to potentially apply similar approaches.

Project objectives:

EEW Expansion – Add up to 5 new EEW stations at MV facilities and potentially ingest EEW signals from Federal-Provincial networks (e.g. offshore Vancouver island). As connected to the 3-station existing EEW network, improve the coverage, detection times, warning times, accuracy/quality, redundancy and robustness of MV's EEW network.

A key metric to be achieved will be the ability to detect, analyze, verify and issue alerts to staff for any damaging earthquake within 3 seconds. Depending on the distance to the epicentre, warnings to staff will vary from a few seconds to tens of seconds. The EEW alarm will also permit automatic actions to be programmed so that vulnerable systems may be partially or wholly shut down.

SHM Expansion – Add up to 10 SHM systems at critical water facilities to provide structural health data to MV for monitoring key facilities that may have been impacted by a significant earthquake.

Contributions to regional sustainability:

The project aligns with the strategic priority of "Resilient Services and Infrastructure" as identified in the *Board Strategic Plan*. It also supports the guiding principles and draft goals of the *Drinking Water Management Plan* currently being updated by ensuring the resiliency of the water system and providing uninterrupted service. The expanded systems will enhance MV's emergency preparedness, coordination with the Province and regional public health and safety.

Innovation element:

The implementation of EEW systems is still at an early stage in Canada. MV WS' transition from an EEW pilot to an industrial-scale EEW system will be at the forefront of the industry and position MV as a leading utility user of the technology and processes.

The pilot system has been proven in detecting earthquakes during the testing and operations of the pilot EEW system; however, by expanding the EEW network and applying the learnings and new investigations, MV WS will be improving the detection speed and accuracy of earthquake warnings and eliminate any potential for false alarms.

By viewing web-based SHM dashboards, including red/yellow/green warning flags, staff can quickly assess facilities without the need for site visits following a major earthquake. MV can then plan and prioritize staff and resources to focus on critical facilities or recoverable facilities and establish recovery or diversion plans for severely damaged facilities. SHM will also improve safety by allowing staff to know the general structural integrity prior to re-entry into various facilities.

Tangible benefits and outcomes:

The EEW expansion will help identify the potential reduction in adverse environmental impacts (e.g. due to prevention of some water leaks), increase social and community resiliency and improve recovery (e.g. increased water availability for fire-fighting; prevention of some injuries due to early warning, and potential public health benefits), and enhance economic and financial benefits (e.g. potential for time and money saved due to focused repairs of damaged infrastructure).

Members and other partners:

This project will seek to exchange information with *Natural Resources Canada* (NRCan) and the provincial *Ministry of Emergency Management and Climate Readiness* (EMCR) as they continue their efforts toward building a public-facing national earthquake early warning system. Ingesting EEW signals from their network will be explored so as to further increase MV's response times and reliability.

As with the pilot, the MV system will be limited to internal institutional use only, optimized for protecting the water supply and other assets (for example, leveraged for MV LWS assets protection). However, there may be opportunities to share data to improve EEW detection on the west coast of Canada.

The project objectives and outcomes will be shared with member jurisdictions, the *Integrated Partnership for Regional Emergency Management* (IPREM) and other agencies and corporations that may be looking into the application of EEW and/or SHM within their operations.

Figure 1. Current Pilot System (Background)

EEW systems detect a precursor wave before a damaging wave from a large earthquake impacts a given location. To enable such a system, specialized sensors (accelerometers and geophones) have been placed at three critical water supply system locations. Working together as a network, these sensors sound off alarms, from a few seconds to tens of seconds ahead of a large incoming earthquake. The farther away an earthquake is, the greater the warning time.

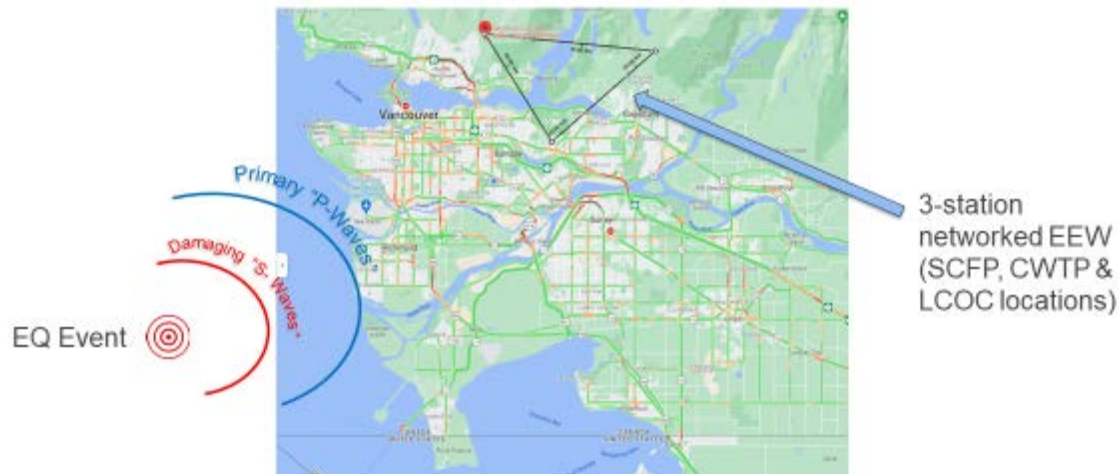


Figure 2. Conceptual Expansion Area for the EEW/SHM systems, providing more complete and reliable Metro Vancouver regional coverage.

