

**METRO VANCOUVER REGIONAL DISTRICT
CLIMATE ACTION COMMITTEE**

MEETING

Thursday, January 11, 2024

9:00 am

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

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

A G E N D A¹

A. ADOPTION OF THE AGENDA

1. January 11, 2024 Meeting Agenda

That the Climate Action Committee adopt the agenda for its meeting scheduled for January 11, 2024 as circulated.

B. ADOPTION OF THE MINUTES

1. November 2, 2023 Meeting Minutes

That the Climate Action Committee adopt the minutes of its meeting held November 2, 2023 as circulated.

pg. 3

C. DELEGATIONS

D. INVITED PRESENTATIONS

E. REPORTS FROM COMMITTEE OR CHIEF ADMINISTRATIVE OFFICER

1. 2024 Climate Action Committee Meeting Schedule and Work Plan

pg. 8

That the Climate Action Committee:

- a) receive for information the Climate Action Committee Terms of Reference and the 2024 Annual Meeting Schedule as presented in the report dated December 14, 2023, titled “2024 Climate Action Committee Meeting Schedule and Work Plan”; and
- b) endorse the 2024 Work Plan, as presented in the report dated December 14, 2023, titled “2024 Climate Action Committee Meeting Schedule and Work Plan”.

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

- 2. Climate 2050: Priority Actions to Accelerate Toward our Regional Targets** pg. 16
That the MVRD Board receive for information the report dated December 15, 2023, titled “Climate 2050: Priority Actions to Accelerate Toward our Regional Targets”.

- 3. Proposed Regulatory Approach to Reduce Greenhouse Gas Emissions from Existing Large Buildings: Phase 2 Engagement** pg. 23
That the MVRD Board endorse the proposed approach to develop a regulation to reduce greenhouse gas emissions from existing large buildings for the purposes of proceeding with a second phase of engagement as described in the report dated December 15, 2023, titled “Proposed Regulatory Approach to Reduce Greenhouse Gas Emissions from Existing Large Buildings: Phase 2 Engagement”.

- 4. Manager’s Report** pg. 59
That the Climate Action Committee receive for information the report dated December 14, 2023, titled “Manager’s Report”.

F. INFORMATION ITEMS

- 1. Correspondence dated January 2, 2024, addressed to Mayor George V. Harvie, Chair, Metro Vancouver Board of Directors and Councillor Lisa Dominato, Chair, Metro Vancouver Climate Action Committee, from Dr. Michael Schwandt, Medical Health Officer, Vancouver Coastal Health, re: Support for Transitioning Toward Zero Emissions from Existing Large Buildings in Metro Vancouver** pg. 64

G. OTHER BUSINESS

H. RESOLUTION TO CLOSE MEETING

I. ADJOURNMENT OR CONCLUSION

That the Climate Action Committee adjourn/conclude its meeting of January 11, 2024.

Membership:

Dominato, Lisa (C) – Vancouver

Johnstone, Patrick (VC) – New Westminster

Berry, Ken – Lions Bay

Bose, Mike – Surrey

Carr, Adriane – Vancouver

Gu, Alison – Burnaby

Lahti, Meghan – Port Moody

Marsden, Dennis – Coquitlam

McCutcheon, Jen – Electoral Area A

McNulty, Bill – Richmond

Pope, Catherine – North Vancouver District

Ross, Jamie – Belcarra

Ruimy, Dan – Maple Ridge

vanPopta, Misty – Langley Township

Wallace, Rosemary – Langley City

**METRO VANCOUVER REGIONAL DISTRICT
CLIMATE ACTION COMMITTEE**

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Climate Action Committee held at 9:00 am on Thursday, November 2, 2023 in the 28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:

Chair, Councillor Lisa Dominato*, Vancouver
 Vice Chair, Mayor Patrick Johnstone*, New Westminster
 Mayor Ken Berry*, Lions Bay
 Councillor Mike Bose*, Surrey
 Councillor Adriane Carr*, Vancouver
 Councillor Alison Gu*, Burnaby (arrived at 9:01 am)
 Mayor Meghan Lahti*‡, Port Moody
 Mayor Andrew Leonard*, Bowen Island (arrived at 9:01 am)
 Director Jen McCutcheon*, Electoral Area A
 Councillor Bill McNulty*, Richmond
 Councillor Catherine Pope*, North Vancouver District
 Mayor Jamie Ross*, Belcarra
 Mayor Dan Ruimy*, Maple Ridge (arrived at 9:06 am)

MEMBERS ABSENT:

Councillor Misty vanPopta, Langley Township
 Councillor Rosemary Wallace, Langley City

REGIONAL PLANNING COMMITTEE MEMBERS PRESENT:

Councillor Dylan Kruger*, Delta
 Councillor Paul Albrecht*, Langley
 Councillor Judy Dueck*, Maple Ridge
 Mayor Megan Knight*, White Rock
 Councillor Peter Lambur*, West Vancouver
 Mayor Brad West*, Port Coquitlam (arrived at 9:01 am)

STAFF PRESENT:

Conor Reynolds, Director, Air Quality and Climate Action Services
 Heather McNell, Deputy Chief Administrative Officer, Policy and Planning
 Catherine Grosson, Legislative Services Coordinator, Board and Information Services

*denotes electronic meeting participation as authorized by section 3.6.2 of the *Procedure Bylaw*
 ‡also a member of the Regional Planning Committee

OPENING REMARKS

Councillor Lisa Dominato, Climate Action Committee Chair, welcomed the Regional Planning Committee members who were invited to attend and participate in discussion regarding Item 5.1 of the November 2, 2023 agenda.

9:01 am Councillor Gu, Mayor Leonard, and Mayor West arrived at the meeting.

1. ADOPTION OF THE AGENDA

1.1 November 2, 2023 Meeting Agenda

It was MOVED and SECONDED

That the Climate Action Committee adopt the agenda for its meeting scheduled for November 2, 2023 as circulated.

CARRIED

2. ADOPTION OF THE MINUTES

2.1 October 5, 2023 Meeting Minutes

It was MOVED and SECONDED

That the Climate Action Committee adopt the minutes of its meeting held October 5, 2023 as circulated.

CARRIED

3. DELEGATIONS

No items presented.

4. INVITED PRESENTATIONS

No items presented.

5. REPORTS FROM COMMITTEE OR STAFF

5.1 Climate Action Committee and Regional Planning Committee Joint Discussion on the Metro 2050 Climate Policy Enhancement Study

Report dated October 16, 2023, from Jonathan Coté, Deputy General Manager, Regional Planning & Housing Development, providing background information to support the joint discussion of the Climate Action Committee and Regional Planning Committee on the results of the Metro 2050 Climate Policy Enhancement Study initiated in May 2022, in response to the MVRD Board resolution.

9:06 am Mayor Ruimy arrived at the meeting.

Members were provided with a presentation on the Metro 2050 Climate Policy Enhancement Study.

Presentation material titled “Metro 2050 Climate Policy Enhancement Study” is retained with the November 2, 2023 Climate Action Committee Agenda.

Members of the Climate Action and the Regional Planning Committees provided input on the *Metro 2050* Climate Policy Enhancement Study by participating in a Mentimeter polling session.

10:05 am Mayor West departed the meeting.

10:12 am Councillors Albrecht, Dueck and Kruger, and Mayor Knight departed the meeting.

10:13 am Councillor Lambur departed the meeting.

5.2 MVRD Air Quality Management Fees Regulation Amendment Bylaw No. 1373, 2023

Report dated October 13, 2023, from Marina Richter, Air Quality Planner II, and Esther Bérubé, Division Manager, Bylaw Development, Air Quality and Climate Action Services, seeking MVRD Board adoption of the *Metro Vancouver Regional District Air Quality Management Fees Regulation Amendment Bylaw No. 1373, 2023* to clarify definitions in Bylaw 1330, which will clarify and confirm the chargeable fee rate for methane emissions.

It was MOVED and SECONDED

That the MVRD Board:

- a) give first, second, and third reading to *Metro Vancouver Regional District Air Quality Management Fees Regulation Amendment Bylaw No. 1373, 2023*; and
- b) pass and finally adopt *Metro Vancouver Regional District Air Quality Management Fees Regulation Amendment Bylaw No. 1373, 2023*.

CARRIED

5.3 Air Quality Advisories during the Summer of 2023

Report dated October 12, 2023, from Geoff Doerksen, Air Quality Planner, and Ken Reid, Superintendent, Environmental Sampling and Monitoring, Air Quality and Climate Action Services, providing the Climate Action Committee with information about air quality advisories issued by Metro Vancouver during the summer of 2023, historical trends, and implications for future air quality.

It was MOVED and SECONDED

That the MVRD Board receive for information the report dated October 12, 2023, titled “Air Quality Advisories during the Summer of 2023”.

CARRIED

5.4 Manager’s Report

Report dated October 19, 2023, from Conor Reynolds, Director, Air Quality and Climate Action Services, providing the Climate Action Committee with an update on Climate Action Committee 2023 Work Plan, Metro Vancouver 2022 Corporate Energy and Greenhouse Gas Emissions Report, a new report from Canadian Climate Institute titled “Heat Pumps Pay Off,” a recent study titled “Abrupt, Climate-Induced Increase in Wildfires in British Columbia Since the Mid-2000s”, and on a project to assess carbon dioxide sequestration potential for the lower mainland. Updates were also provided on engagement activities related to the *Climate 2050* Human Health and Wellbeing Draft Roadmap, preliminary feedback and next steps for electrification of lawn and garden equipment, and ongoing engagement with large building owners.

It was MOVED and SECONDED

That the Climate Action Committee receive for information the report dated October 19, 2023, titled “Manager’s Report”.

CARRIED

6. INFORMATION ITEMS

6.1 Waste-to-Energy Facility District Energy System Stage Gate

It was MOVED and SECONDED

That the Climate Action Committee receive for information item 6.1 Waste-to-Energy Facility District Energy System Stage Gate

CARRIED

7. OTHER BUSINESS

No items presented.

8. BUSINESS ARISING FROM DELEGATIONS

No items presented.

9. RESOLUTION TO CLOSE MEETING

It was MOVED and SECONDED

That the Climate Action Committee close its meeting scheduled for November 2, 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:
- (h) an administrative tribunal hearing or potential administrative tribunal hearing affecting the municipality, other than a hearing to be conducted by the council or a delegate of council;
 - (i) the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose;
- 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.

CARRIED

10. ADJOURNMENT/CONCLUSION

It was MOVED and SECONDED

That the Climate Action Committee adjourn its meeting of November 2, 2023.

CARRIED

(Time: 10:49 am)

Catherine Grosson,
Legislative Services Coordinator

Lisa Dominato,
Chair

63566472 FINAL

To: Climate Action Committee

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

Date: December 14, 2023 Meeting Date: January 11, 2024

Subject: **2024 Climate Action Committee Meeting Schedule and Work Plan**

RECOMMENDATION

That the Climate Action Committee:

- a) receive for information the Climate Action Committee Terms of Reference and the 2024 Annual Meeting Schedule, as presented in the report dated December 14, 2023, titled “2024 Climate Action Committee Meeting Schedule and Work Plan”; and
 - b) endorse the 2024 Work Plan, as presented in the report dated December 14, 2023, titled “2024 Climate Action Committee Meeting Schedule and Work Plan”.
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EXECUTIVE SUMMARY

The Terms of Reference for the Climate Action Committee sets out the Committee’s responsibilities in the areas of climate action, air quality, and clean energy, and provides guidance and oversight on the implementation of the annual work plan. Work plan priorities for 2024 include finalizing the remaining *Climate 2050* roadmaps and continued implementation of the Board-endorsed *Climate 2050* roadmaps and *Clean Air Plan*, with key actions to reduce emissions of greenhouse gases and health-harming air contaminants from buildings, transportation, industry and business, and energy use.

Staff will aim to improve air quality and reduce emissions by promoting compliance with air quality bylaws and permits, developing new bylaws and emission regulations, and implementing supporting policies and programs. Metro Vancouver operates the air quality monitoring network and the public air quality advisory program for Metro Vancouver and the Fraser Valley Regional District (FVRD). Regional air quality will continue to be impacted by climate change-related heat and wildfire events. Proposed policies and actions to significantly reduce emissions and improve resilience to the impacts of climate change will be consistent with the endorsed 2024 MVRD Budget. Pursuant to the Terms of Reference, the meeting schedule proposes 10 meetings in 2024.

PURPOSE

To provide the Climate Action Committee 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 Climate Action Committee’s work, this report brings forward the committee’s Work Plan and the Schedule of Meetings for 2024.

2024 WORK PLAN

The Annual Work Plan for the Air Quality and Climate Action function is based on the 2024 Budget approved by the MVRD Board on October 27, 2023, which include a list of key priorities that were used to develop the Climate Action Committee's Work Plan presented in this report (Attachment 1).

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

Residents in Metro Vancouver are already feeling the impacts of climate change, which are closely linked with air quality and health. For example, wildfire smoke advisories were issued in seven of the last nine summers, and in 2023, extreme heat in May caused the earliest ozone advisory since the air quality advisory program began in 1993. These climate impacts are presenting new challenges for the management of regional air quality. There is a need for urgent action to both reduce the greenhouse gas (GHG) emissions driving climate change and improve regional resilience to its impacts.

Metro Vancouver's *Clean Air Plan* (Reference 1) and *Climate 2050* (Reference 2) respond to these challenges by identifying the most impactful emission reduction and climate adaptation strategies and actions across all sectors. These plans describe the role that Metro Vancouver must play in order to meet the Board-adopted emissions reduction targets for 2030, and to achieve a carbon-neutral and climate-resilient region by 2050, targets that are aligned with current science from the Intergovernmental Panel on Climate Change. The Board has already endorsed six *Climate 2050* roadmaps, and another four are under development and will be brought to the Climate Action Committee for consideration and comment.

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

Air Quality and Climate Action

- Provide input on *Climate 2050* roadmaps for: land use and urban form; human health and well-being; water and wastewater; and waste, and bring these forward for Board endorsement.
- Implement or seek Committee and Board direction on air quality and climate action priority actions ("Big Moves") from the *Clean Air Plan* and *Climate 2050* roadmaps, in particular related to buildings, transportation, industry and energy (refer to report E.2 in this agenda package).
- Ensure compliance with Metro Vancouver permits and bylaws related to emissions from industry, businesses, equipment, activities, and residences.
- Develop new and amended air quality bylaws and emission regulations towards goals for climate action, protection of human health and the environment, and continuous improvement in air quality, for Board adoption, including for large existing buildings, boilers and process heaters, and small non-road engines.
- Continue to make improvements to the air quality monitoring network by expanding the regional air quality monitoring network, (including a new station located on Tsawwassen

First Nation Treaty Land), and increasing spatial coverage using small sensors, to support the evidence basis and performance measurement for the air quality program.

- Continue to provide air quality information to the public and issue air quality advisories during periods of degraded air quality.
- Implement corporate climate and energy actions, including emissions reduction and resilience for corporate fleet, buildings, facilities, and infrastructure.
- Continue to implement the *Climate 2050* Engagement and Public Education Strategy 2023 to 2025.

Clean, Renewable, and Resilient Energy

- Provide updates on relevant BC Utilities Commission engagement processes, including those in which Metro Vancouver was involved in 2023, in collaboration with member jurisdictions.
- Advocate to the Province for stronger energy policies that are aligned with both *Climate 2050* and *CleanBC* targets, to ensure that the energy transition is successful, fair, and equitable.
- Provide input on provincial engagement processes related to the BC Climate-Aligned Energy Framework and a proposed GHG emissions cap for gas utilities, which have the potential to support and accelerate the clean energy transition.
- Work with BC Hydro to document alignment of shared objectives and opportunities to collaborate in advancing energy efficiency and electrification.

Climate Change Adaptation and Resilience

- Advance planning and policies to increase regional resilience to the impacts of climate change, as outlined in the adaptation actions in the *Climate 2050* roadmaps.

The Committee will be updated on the status of the actions and projects in this Work Plan on a monthly basis 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, unless otherwise specified on the Metro Vancouver public notice board, the Metro Vancouver website, and the respective agenda.

ALTERNATIVES

1. That the Climate Action Committee:
 - a) receive for information the Climate Action Committee Terms of Reference and the 2024 Annual Meeting Schedule, as presented in the report dated December 14, 2023, titled "2024 Climate Action Committee Meeting Schedule and Work Plan"; and
 - b) endorse the 2024 Work Plan, as presented in the report dated December 14, 2023, titled "2024 Climate Action Committee Meeting Schedule and Work Plan".

2. That the Climate Action Committee:
 - a) receive for information the Climate Action Committee Terms of Reference and the 2024 Annual Meeting Schedule, as presented in the report dated December 14, 2023, titled “2024 Climate Action Committee Meeting Schedule and Work Plan”; and
 - b) endorse the 2024 Work Plan, as presented in the report dated December 14, 2023, titled “2024 Climate Action Committee Meeting Schedule and Work Plan”, incorporating the requested changes from the Climate Action Committee.

FINANCIAL IMPLICATIONS

The priorities in the 2024 Work Plan of the Climate Action Committee are consistent with the 2024 Budget approved by the MVRD Board on October 27, 2023, and with key actions included in the Annual Work Plans.

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 Climate Action Committee in 2024 and is consistent with its Terms of Reference and the 2024 Budget approved by the MVRD Board. 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.

REFERENCES

1. [Metro Vancouver’s Clean Air Plan \(2021\)](#)
2. [Metro Vancouver’s Climate 2050 Strategy](#)

ATTACHMENTS

1. Climate Action Committee 2024 Work Plan
2. Climate Action Committee Terms of Reference
3. Climate Action Committee 2024 Annual Meeting Schedule

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Climate Action Committee 2024 Work Plan

Report Date: December 14, 2023

Priorities

1st Quarter	Status
Climate Action Committee meeting schedule and work plan	Pending
Climate 2050 priority implementation actions for 2024 to 2026	Pending
Next phase of engagement on large buildings GHG emission regulation	Pending
Climate 2050 engagement and public education priorities	Pending
Draft Climate 2050 Land Use and Urban Form Roadmap	Pending
Metro 2050 climate policy enhancements project	Pending
2nd Quarter	Status
Draft Climate 2050 Human Health and Well Being Roadmap	Pending
Overview of air quality advisory program and preparedness for 2024 season	Pending
Update on heavy-duty vehicle emission reduction approaches	Pending
Initiate engagement on emission regulation for small non-road engines	Pending
Update on Driving Down Emissions project	Pending
Appointment of Assistant District Director and Enforcement Officers	Pending
Regional multi-hazard mapping project update	Pending
Agricultural Land Use Inventory	Pending
Update on Metro Vancouver Retrofit Accelerator	Pending
Update on outreach for Residential Indoor Wood Burning Bylaw	Pending
Outcome of BC Utilities Commission proceedings	Pending
3rd Quarter	Status
Climate 2050 Annual Progress Report	Pending
Update to Regional Ground Level Ozone Strategy	Pending
Annual Air Quality Report	Pending
Update to internal carbon price policy	Pending
Amendments to boilers and process heaters emission regulation	Pending
4th Quarter	Status
Draft Climate 2050 Water and Wastewater Infrastructure Roadmap	Pending
Draft Climate 2050 Waste Roadmap	Pending
Regional air quality objectives	Pending
Update on Corporate Energy and GHG management	Pending
Metro Vancouver workplace and public electric vehicle charging strategy	Pending
Report on 2024 air quality advisory season	Pending
Update on ecosystem services on agricultural lands	Pending
Ecological Health Framework progress report	Pending
Update on regulatory review for reducing emissions from industrial sources	Pending
Annual budget and five-year financial plan	Pending

Climate Action Committee

Terms of Reference

The Climate Action 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; 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.

Climate Action Committee 2024 Annual Meeting Schedule

- **Thursday, January 11, 2024 at 9:00 am**
- **Thursday, February 8, 2024 at 9:00 am**
- **Thursday, March 7, 2024 at 9:00 am**
- **Thursday, April 4, 2024 at 9:00 am**
- **Thursday, May 9, 2024 at 9:00 am**
- **Thursday, June 13, 2024 at 9:00 am**
- **Thursday, July 4, 2024 at 9:00 am**
- **Thursday, September 5, 2024 at 9:00 am**
- **Thursday, October 3, 2024 at 9:00 am**
- **Thursday, November 7, 2024 at 9:00 am**

** Committee Meetings are subject to change.*

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](#)

To: Climate Action Committee

From: Nav Hundle, Senior Policy & Planning Analyst, Air Quality & Climate Action Services
Laura Taylor, Senior Engagement Specialist, External Relations

Date: December 15, 2023 Meeting Date: January 11, 2024

Subject: **Proposed Regulatory Approach to Reduce Greenhouse Gas Emissions from Existing Large Buildings: Phase 2 Engagement**

RECOMMENDATION

That the MVRD Board endorse the proposed approach to develop a regulation to reduce greenhouse gas emissions from existing large buildings for the purposes of proceeding with a second phase of engagement as described in the report dated December 15, 2023, titled “Proposed Regulatory Approach to Reduce Greenhouse Gas Emissions from Existing Large Buildings: Phase 2 Engagement”.

EXECUTIVE SUMMARY

Developing greenhouse gas (GHG) reduction requirements for existing buildings is a Big Move or priority climate action in Metro Vancouver’s *Clean Air Plan* and *Climate 2050 Buildings Roadmap*. This report presents a regulatory proposal for reducing GHG emissions from existing large buildings over 2,322 m² (25,000 ft²) that responds to feedback from initial engagement. The report seeks direction to engage further with impacted and interested audiences on this regulatory proposal, which will cover about 9,000 buildings, representing less than 2% of the region’s overall building stock, yet which contribute 35% of building GHG emissions. The proposal includes annual GHG reporting for buildings over 2,322 m², initial GHG limits for office and retail buildings over 9,290 m² (100,000 ft²), and a final GHG limit of zero emissions for all buildings over 2,322 m² by 2045. Initial and final GHG limits would exclude GHG emissions from cooking and district energy. Staff and district energy providers will continue exploring the most appropriate instruments for decarbonizing district energy systems at the source.

The goals of engagement are to broaden awareness and seek input from those likely to be impacted, or have a role in implementation. A distinct stream of engagement will focus on equity and affordability considerations. After the engagement period, staff will provide the Board with a summary of the feedback and how it is considered.

PURPOSE

To seek Metro Vancouver Regional District (MVRD) Board direction to proceed with a second phase of engagement on developing a regulation to reduce GHG emissions from existing large buildings in the region in support of achieving Board-adopted climate action targets.

BACKGROUND

In September and November 2021 respectively, the MVRD Board approved the *Clean Air Plan* and endorsed the *Climate 2050 Buildings Roadmap*. Both policy documents commit to the action,

“Greenhouse Gas Performance Requirements for Existing Large Buildings”, which is identified as one of the key Big Moves that will be foundational to achieving the Board’s climate action targets. On May 27, 2022, the MVRD Board authorized staff to proceed with an initial phase of engagement to develop an approach for managing GHG emissions from large buildings. This report presents a regulatory proposal that responds to feedback from the initial engagement and seeks Board direction to proceed with a second phase of engagement.

CURRENT ACTION TO REDUCE GREENHOUSE GAS EMISSIONS FROM BUILDINGS

Buildings are the source of a quarter of Metro Vancouver’s regional GHG emissions. Building emissions have risen by almost 10% since 2010 (Reference 1). The 2022 Metro Vancouver GHG Emission Inventory estimates 4.9 million tonnes CO₂e of GHG emissions are produced from buildings annually, mostly from burning fossil natural gas for space heating and hot water.

Buildings last a long time, and decisions made today will impact building GHG emissions for decades. Equipment replacements for space and water heating usually take place every 15-30 years, and building envelope upgrades may only occur every 30-50 years. Given these long replacement cycles, it is critical to ensure that retrofits consider a long term view, and maximize GHG reductions and energy savings. The *Clean Air Plan* and *Climate 2050* respond to this urgency to reduce GHG emissions from the building sector through the Board-endorsed targets of reducing GHG emissions from buildings 35% below 2010 levels by 2030, and achieving zero-emission buildings by 2050. Both plans call for requirements to reduce GHG emissions from large existing buildings.

Current Support and Incentives for Building Retrofits

To be successful, requirements to reduce GHG emissions will need to be coupled with supportive programs and incentives since there are costs to building owners in transitioning to zero-emission buildings. This is a critical part of the proposed approach. Incentives are available to building owners through the *CleanBC* program. Financial institutions offer financing options for building owners that undertake low carbon equipment changes and retrofits. Metro Vancouver is launching a Retrofit Accelerator in partnership with the Zero Emissions Innovation Centre (ZEIC), to provide guidance around technical and financial challenges. The Retrofit Accelerator is described in the report dated January 10, 2022 (Reference 2).

Filling the Gap in Requirements for Existing Buildings

There is a gap in current policy aimed at reducing GHG emissions from buildings when it comes to existing buildings. At the provincial level, the *CleanBC Roadmap to 2030* commits to climate actions that focus on new buildings and on the energy efficiency of heating and cooling equipment sold and installed in BC. Recent federal announcements commit to developing a building alterations code by 2030, and providing financial support to building owners to reduce the cost of low carbon retrofits. However, there are no current requirements for GHG reduction from existing buildings at the federal or provincial levels.

With the exception of Metro Vancouver and the City of Vancouver, local governments in BC do not have access to policy tools that would allow them to limit GHG emissions from existing buildings.

In 2022, Vancouver City Council adopted the *Annual Greenhouse Gas and Energy Limits By-Law 13472*, which includes reporting and GHG reduction requirements for existing office and retail buildings over 9,290 m² (100,000 ft²). Metro Vancouver's regulatory proposal seeks to extend a similar approach to the region, which would support the climate targets in member jurisdictions. Metro Vancouver staff will continue working with member jurisdictions to develop a harmonized region-wide approach that addresses additional building types and sizes. Metro Vancouver and the City of Vancouver's harmonized approach would also complement pending provincial requirements that are expected to require all new and replacement space and water heating equipment in BC to be at least 100% energy efficient after 2030. Metro Vancouver and City of Vancouver's regulatory approach would go further and track the GHG emissions from the equipment at a building-level while encouraging a shift to zero-emission technology. Together, these requirements establish a comprehensive approach to transitioning buildings to zero emissions while also using energy efficiently.

REGULATORY PROPOSAL FOR EXISTING LARGE BUILDINGS IN METRO VANCOUVER

The regulatory proposal seeks to establish GHG reporting and reduction requirements for existing large buildings over 2,322 m² (25,000 ft²) in gross floor area. This scope will cover about 9,000 buildings, representing less than 2% of the region's overall building stock, yet which is responsible for 35% of building GHG emissions. The following regulatory proposal is presented in the intentions paper in Attachment 1. Prior to proceeding with engagement, the intentions paper will be formatted to match the look and feel of other Metro Vancouver regulatory proposal documents.

GHG Reporting and Reduction Requirements

Reporting requirements would be phased in, starting with larger buildings over 9,290 m² (100,000 ft²) in 2026, and expanding until 2028 to include more building types and sizes down to 2,322 m² (25,000 ft²)¹. Every year, building owners would submit information related to the building's GHG emissions. Many building owners of large buildings already use software to track this information. Others would gain a better understanding of their building's energy use and emissions to identify cost-saving, efficient retrofit strategies, and enhance their ability to plan and track performance improvements over time.

An initial GHG emission limit for space and water heating is proposed for office and retail buildings over 9,290 m² (100,000 ft²) starting in 2028. All large building types over 2,322 m² (25,000 ft²), including residential buildings, would have a final GHG limit of zero emissions starting in 2045 to prepare the region to meet the *Climate 2050* target of zero-emission buildings by 2050. Initial and final GHG limits would exclude GHG emissions from cooking, which are minor compared to space and water heating. Metro Vancouver would apply an emission fee to each tonne of GHG emissions over the applicable GHG emission limit. In response to Phase 1 engagement feedback on affordability (Reference 3), staff intend to develop proposals for initial requirements for other large building types (such as residential, arena, or warehouses) through engagement with impacted

¹ The gross floor area of a building depends on the street-level floor area and number of storeys. As illustrative examples, buildings above 25,000 ft² could be low-rise or three-storey buildings, buildings above 50,000 ft² could be mid-rise or five-storey buildings, and buildings over 100,000 ft² are typically high-rise towers or retail and office complexes.

audiences. This current proposal aligns with the reporting and performance limits in the City of Vancouver's *Annual Greenhouse Gas and Energy Limits By-Law 13472* (Reference 4).

Initial and final GHG limits for buildings would also exclude GHG emissions from district energy. District energy systems can often provide low-carbon heat energy, but their emissions are outside the control of individual building owners. Staff would continue discussions with district energy providers to explore the most appropriate instruments for decarbonizing these systems at the source, including site-specific permits and emission regulations.

Proposed Program Fees

Metro Vancouver establishes regulatory fees as part of its air emission management program to recover administrative costs and encourage emission reduction based on the potential health and environmental impacts of air emissions. Proposed regulatory fees, which are consistent with the City of Vancouver's *Annual Greenhouse Gas and Energy Limit Bylaw*, include two components:

1. Annual Registration and Reporting Fee: \$500 per building
2. Annual Emission Fee: \$350/tonne CO₂e from fossil natural gas combustion and \$0/tonne CO₂e from renewable natural gas (RNG) combustion. Emission fees would start in 2028 and would only apply to GHG emissions that exceed a building's GHG emission limit.

The GHG emission fee for combustion of RNG is initially proposed to be \$0/tonne CO₂e, in recognition that some buildings may need to use RNG as a transition fuel. In the future, Metro Vancouver may propose GHG emission fees for RNG use, since RNG is a scarce resource that may be needed in sectors that are harder to transition to zero-emission technology, in order for the overall region to achieve carbon neutrality by 2050. The intent would be to incentivize building owners to take advantage of supports and reduce building GHG emissions before the GHG limits and emission fees take effect.

Alternative Compliance Pathways and Equity and Affordability Considerations

Some buildings may face exceptional circumstances that make it infeasible to meet a GHG limit within the proposed timeframe. Through this proposed phase of engagement, Metro Vancouver intends to explore the development of alternative compliance pathways for a customized approach for these cases, which might include adjustments to timelines or GHG limits.

In addition to work underway to develop supports for building owners, staff are also considering equity implications of the proposal, including equitable access to benefits such as access to cooling and better air quality. Using best practices as a starting point, options for how to address potential impacts will be developed through this proposed second phase of engagement.

ENGAGEMENT APPROACH

Staff seek to engage on the development of a proposed regulation, based on the intentions paper, in 2024. Engagement will focus on those likely to comment, be impacted, or have a role in implementation. This will primarily be building owners and operators, agencies with a role in implementation, and community associations. A more detailed list of audiences is in Attachment 2.

During the initial engagement in 2022, some building owners raised concerns about equity and affordability (Reference 3). Specific considerations for equity will be the focus of a parallel stream of engagement. This stream will focus on representatives for audiences who may be inequitably impacted by implementation or climate change, including non-profit organizations and building owners and managers who work with these audiences.

Metro Vancouver, the City of Vancouver, and the Province, among others, are simultaneously considering emissions reduction initiatives for buildings. In order to reduce engagement fatigue and provide clarity on jurisdictional authority, Metro Vancouver and City of Vancouver are collaborating on engagement activities where relevant and will involve other members as needed.

Engagement opportunities will be promoted through email with individuals in the project database, and staff phone calls where needed. Staff will work with relevant associations to connect with their members, and increase reach through the project website and social media. Engagement tactics include individual meetings, sectoral roundtables, municipal advisory committee sessions, public webinars, and a feedback form.

After the engagement period, staff will present a summary of the feedback and how the feedback is being considered in an updated approach and proposed regulation.

ALTERNATIVES

1. That the MVRD Board endorse the proposed approach to develop a regulation to reduce greenhouse gas emissions from existing large buildings for the purposes of proceeding with a second phase of engagement as described in the report dated December 15, 2023, titled "Proposed Regulatory Approach to Reduce Greenhouse Gas Emissions from Existing Large Buildings: Phase 2 Engagement Proposal".
2. That the MVRD Board receive for information the report dated December 15, 2023, titled "Proposed Regulatory Approach to Reduce Greenhouse Gas Emissions from Existing Large Buildings: Phase 2 Engagement Proposal", and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

Under Alternative 1, staff will proceed with a second phase of engagement on the development of a regulation to reduce GHG emissions from existing large buildings. The resources needed for this engagement, including staff time and consulting costs, will be covered through approved program budgets for 2024. Anticipated Metro Vancouver resource needs for the implementation of a regulation, including communication, technical support, and compliance promotion, would be presented after engagement, alongside a cost recovery model and a proposed emission regulation for Board consideration.

CONCLUSION

This report presents a regulatory proposal and an engagement approach to reduce GHG emissions from large existing building over 2,322 m² (25,000 ft²) in gross floor area in the region, with a recommendation to proceed with a second phase of engagement. The regulatory proposal includes both GHG reporting and reduction requirements, which align with the City of Vancouver's *Annual Greenhouse Gas and Energy Limits By-Law 13472* and complement proposed provincial equipment

efficiency standards. Engagement will broaden awareness, seek feedback, and provide decision-makers with a summary of the feedback received and how it is considered in a proposed regulation. Developing requirements for existing buildings is a priority climate action referred to as a Big Move in Metro Vancouver's *Clean Air Plan* and *Climate 2050 Buildings Roadmap*.

ATTACHMENTS

1. Intentions Paper: "Proposed Regulatory Approach to Reduce Greenhouse Gas Emissions from Existing Large Buildings"
2. Phase 2 Engagement Approach: "Proposed Regulatory Approach to Reduce Greenhouse Gas Emissions from Existing Large Buildings"
3. Presentation re: Proposed Regulatory Approach to Reduce Greenhouse Gas Emissions from Existing Large Buildings - Phase 2 Engagement Proposal

REFERENCES

1. Metro Vancouver: ["Annual Regional Greenhouse Gas Emissions for On Road Transportation and Buildings", dated June 23, 2023](#)
2. Metro Vancouver: ["2022 Regional District Sustainability Innovation Fund Applications", dated January 10, 2022](#)
3. Metro Vancouver: ["Initial Engagement Outcomes on Developing GHG Emission Reduction Requirements for Existing Large Buildings", dated August 22, 2023](#)
4. [City of Vancouver, Annual Greenhouse Gas and Energy Limits By-law 13472](#)

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An aerial photograph of a city skyline at sunset. The sky is a mix of blue and orange, with soft clouds. In the background, a range of mountains is visible. The city features numerous high-rise buildings, some of which are illuminated. The foreground shows a large, modern building with a flat roof.

REGULATORY PROPOSAL TO REDUCE GREENHOUSE GAS EMISSIONS FROM EXISTING LARGE BUILDINGS

Intentions Paper

December 2023 **DRAFT**

Metro Vancouver acknowledges that the region’s residents live, work, and learn on the shared territories of many Indigenous peoples, including 10 local First Nations: ʔícə́y̓ (Katzie), ʔwɑ:ńłəń (Kwantlen), kʷikwə́łəm (Kwkwetlem), máthxwi (Matsqui), xʷməθkʷə́yəm (Musqueam), qíqéyt (Qayqayt), se'mya'me (Semiahmoo), Skwxwú7mesh Úxwumixw (Squamish), scə́wəθən məsteyəxʷ (Tsawwassen), and sə́lilwə́təł (Tseil-Waututh).

Metro Vancouver respects the diverse and distinct histories, languages, and cultures of First Nations, Métis, and Inuit, which collectively enrich our lives and the region.



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Executive Summary

Metro Vancouver is working toward introducing an emission regulation to significantly reduce greenhouse gas (GHG) emissions from existing, large buildings. This is an important step in achieving Metro Vancouver's climate targets, which include reducing GHG emissions from buildings 35% below 2010 levels by 2030 and reaching zero emissions by 2050. This intentions paper seeks input on a regulatory proposal to require existing buildings larger than 2,322 m² (25,000 ft²) to register and report on their GHG emissions and then reduce those emissions over time to meet a target of zero emissions by 2045, excluding GHG emissions from cooking and district energy.

Why We Need to Reduce GHG Emissions from Buildings

Buildings are the second-highest source of GHG emissions in Metro Vancouver, representing 25% of all GHG emissions. Large buildings represent just 2% of all buildings in Metro Vancouver, yet they account for approximately 35% of regional GHG emissions from buildings. Most of these GHG emissions are produced from burning fossil natural gas for heating and hot water systems. While new buildings are subject to requirements for energy efficiency and GHG emissions, there are currently no requirements that apply across the region to limit GHG emissions from existing buildings produced by burning natural gas for heating and hot water. The regulatory proposal offers a significant opportunity to reduce these emissions and meet our climate targets.

In addition to lowering GHG emissions over time, retrofits to existing buildings to meet the regulatory proposal would improve local air quality, improve the health and comfort of building occupants, and offer greater resilience to extreme heat events.

Supports coupled with requirements will increase the successful implementation of low carbon retrofits. Financial incentives and financing options are available to encourage building owners to carry out low-carbon retrofits. The Metro Vancouver Retrofit Accelerator being developed in partnership with the Zero Emissions Innovation Centre (ZEIC) will provide additional technical supports and guidance to building owners.

The Scope of the Regulatory proposal

The regulatory proposal would apply to buildings over 2,322 m² (25,000 ft²) in size, with final GHG limits in 2045 and GHG reporting and initial GHG limits that would be phased in over time. Some specific building occupancies would be excluded¹.

Phased-in Reporting Requirements

The regulatory proposal presents GHG emissions reporting timelines based on building size and occupancy category. Owners of large buildings (over 2,322 m²/25,000 ft²) would need to register their building, and provide information about the building and its energy use by fuel type. The reporting requirements would be phased in between the years 2026 to 2029, starting with the largest buildings (9,290 m² / 100,000 ft²) and then working down to the smallest threshold of 2,322 m² (25,000 ft²) over time.

Phased-in GHG Emission Intensity Limits

A performance requirement known as a GHG emission intensity limit would be set for each building category and phased in over time. This GHG emission intensity limit represents the maximum GHG emissions that a building of a particular type could emit per unit of floor area (expressed as kilograms of carbon dioxide equivalent per square metre per year, or kgCO₂e/m²/year) before emission fees apply. This intentions paper proposes initial GHG emission intensity limits for office and retail buildings over 9,290 m² (100,000 ft²) starting in 2028. Initial limits for other building occupancies and sizes will be developed over the course of 2024, informed by further analysis and input from engagement. A final GHG emission intensity limit of zero for all buildings over 2,322 m² (25,000 ft²) is also proposed to take effect in 2045. Initial and final GHG limits would exclude emissions from cooking and emissions generated from district energy. District energy systems can provide low-carbon heat energy, and Metro Vancouver will continue working with district energy providers to explore the most appropriate instruments for decarbonizing these systems at the source, including site-specific permits and emission regulations.

¹ Detention or correctional facilities, treatment facilities (i.e. hospitals), or heavy industrial facilities (including some facilities with existing permits from Metro Vancouver).

How Building Owners Can Meet the GHG Emission Intensity Limits

Building owners can meet the proposed GHG emission intensity limit by improving a building's performance through a range of available interventions, such as reducing energy use by replacing windows, upgrading insulation and installing smart controls, and switching out gas-fired heating and hot water systems with electric equivalents. Alternatively, if a building's annual reported emissions are above the GHG emission intensity limit, the building's owner would pay a GHG emission fee for each tonne of CO₂e over the limit. This annual fee would apply to the total gross floor area of a building and is calculated by converting a building's remaining GHG emissions that are above the limit (kgCO₂e/m²/year) into the absolute GHG emissions for the entire building (expressed as tonnes of carbon dioxide equivalent for the total gross floor area of the building per year, or tonnes/CO₂e per year).

Metro Vancouver is exploring the development of alternative compliance pathways for a customized approach to address building owners facing extenuating circumstances. This option will be further developed with affected audiences through the upcoming engagement program.

Cost Recovery and Fees

Metro Vancouver establishes regulatory fees as part of its air emissions management program to recover administrative costs and encourage emissions reduction based on the potential health and environmental impacts of air emissions.

Building owners would need to register their building with Metro Vancouver, which would involve a \$500 annual registration fee.

A GHG emission fee of \$350 per tonne of CO₂e would apply to each tonne of GHG emissions emitted from a building exceeding the GHG emission intensity limit. If a building's emissions are below the annual GHG emission intensity limit, the building owner would not need to pay a GHG emission fee.

Some building owners may use renewable natural gas (RNG) as a transition fuel in their progress toward zero-emission buildings. Metro Vancouver proposes initially waiving the GHG emission fee for GHG emissions from RNG use. In the future, Metro Vancouver may propose GHG emission fees for RNG use, recognizing that RNG is a scarce resource that should be prioritized for sectors that are harder to transition to zero-emission technology in order for the overall region to achieve carbon neutrality by 2050. Metro Vancouver applies emission fees for the discharge of health-harming air contaminants from the combustion of RNG in buildings that must register through the *MVRD Boilers and Process Heaters Emission Regulation Bylaw No. 1087, 2008*.

Exemptions and Flexibility

The GHG emission intensity limits would not apply for a specific year for new buildings that have been operating for less than one full year or for buildings approved for demolition.

Metro Vancouver also plans to consider equity implications of the proposal in engagement, to identify potential inadvertent negative impacts of the regulatory proposal and ways to address them, while considering the equitable distribution of benefits such as energy efficiency, cooling, and improved air quality.

We'd Like to Hear from You!

Metro Vancouver invites you to share your comments on this intentions paper in 2024.

Metro Vancouver staff and contractors will treat comments received with confidentiality; please note that comments you provide and information that identifies you as the source of those comments may be publicly available if a freedom of information (FOI) request is made under the *Freedom of Information and Protection of Privacy Act*.

If you have any questions or comments regarding this initiative, please call 604-432-6200 or email us at climate2050@metrovancover.org.

For more information, visit metrovancover.org and type "building emissions action" in the site search field. We encourage you to sign up for the project mailing list to receive updates and news about engagement opportunities.

Introduction

Metro Vancouver Regional District (MVRD) is a federation of 21 municipalities, one electoral area, and one treaty First Nation that collaboratively plans for and delivers regional-scale services for 2.6 million residents.

Metro Vancouver provides core utility services that include drinking water, sewage treatment, and solid waste management, as well as services like regional parks, affordable housing, regional land use planning, and air quality and climate action that help keep this one of the most livable regions in the world.

Taking action to achieve a **carbon-neutral region** by 2050 is an essential component of Metro Vancouver’s leadership and commitment to addressing climate change and ensuring the resiliency of our infrastructure, ecosystems, and communities.

Taking Action on Climate and Air Quality in the Building Sector

Metro Vancouver’s [Climate 2050](#) and its associated *Roadmaps* will guide climate change policy and action over the next three decades as the region works to achieve its carbon-neutral goals. *Climate 2050* addresses the need for both mitigation (reducing GHG emissions) and adaptation (responding to climate impacts). The board-endorsed [Climate 2050 Buildings Roadmap](#) outlines seven strategies and 37 actions that will help the region achieve a resilient and **zero-emission** building stock by 2050.

The [Clean Air Plan](#) describes how Metro Vancouver will manage air quality and **greenhouse gases** (GHG) over the next 10 years in support of the long term vision of *Climate 2050*. The *Clean Air Plan* includes key actions to reduce GHG emissions to meet 2030 emissions targets and also includes actions to improve day-to-day air quality by reducing health-harming air contaminants.

Combustion of fossil fuels, including fossil natural gas used for heating and hot water in buildings, produces GHG emissions. Combustion of both fossil and **renewable natural gas** also produces health-harming air contaminants, such as fine particulate matter and **nitrogen oxides** (NO_x), which contribute to the formation of harmful nitrogen dioxide (NO₂). While Metro Vancouver residents generally experience good air quality, health researchers have demonstrated that there are no known safe levels for fine particulate matter and NO₂.

To address climate change and improve air quality, the following targets have been set in *Climate 2050* and the *Clean Air Plan*:

- **By 2030**, a 35% reduction in GHG emissions and 15% reduction in NO_x emissions from buildings.
- **By 2050**, all buildings are **zero emissions** in their operation, deriving all energy needs from 100% clean and renewable sources.

Developing regulatory requirements to reduce GHG emissions from existing buildings is identified in both plans as a “big move” that will be critical if the region is to achieve its climate and air quality targets.

Metro Vancouver's Delegated Authority

The MVRD is authorized by British Columbia's *Environmental Management Act* to regulate or prohibit the discharge of **air contaminants**. GHG emissions are considered to be air contaminants because they are substances that are capable of harming public health or the environment.

Metro Vancouver protects air quality using a three-tiered approach to regulating the discharge of air contaminants. The three tiers are site-specific permits, sector emissions regulations, and the *Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008* (Bylaw 1082). Metro Vancouver's team of environmental professionals assess compliance with and enforce the requirements of all three tiers.



A three-tiered approach to regulating air contaminants in Metro Vancouver. A Large Building GHG Emission Regulation would fall into the "regulations and bylaws" category.

Engagement to Date

The proposed regulation builds on the initial engagement undertaken with key audiences in 2022 to gain input on a [discussion paper](#) and learn about the impacts and opportunities of a potential regulation. ([Read a summary of feedback.](#)) This intentions paper will guide discussion on a second phase of public engagement on a proposed GHG emission regulation that would apply to existing large buildings over 2,322 m² (25,000 ft²).

Purpose

The purpose of this intentions paper is to:

- Provide more information to the public on the regulatory proposal to reduce GHG emissions from buildings over 2,322 m² (25,000 ft²).
- Gather feedback that can be used to draft a proposed emissions regulation for adoption by the Metro Vancouver Regional District (MVRD) Board.

This intentions paper may be of interest to:

- Member jurisdictions
- Building owners, managers, and developers
- Multi-unit residential building owners, strata councils, and tenants
- Organizations and individuals involved in designing, manufacturing, selling, installing, and maintaining space heating and water heating systems in buildings
- Industry and business associations, including boards of trade and chambers of commerce
- Other orders of government
- First Nations
- District energy providers and planners
- Utility providers
- Financial institutions
- The general public

Interested parties are invited to provide feedback on the intentions paper in **2024**.

Terms in bold and underlined letters are defined in the glossary at the end of this intentions paper.

Defining the Opportunity

Buildings in Metro Vancouver produce the second-largest share of the region’s total GHG emissions (Figure 1), amounting to roughly four to five million tonnes of **carbon dioxide equivalent** (CO₂e) per year. Most of these GHG emissions – approximately 90% – come from burning fossil natural gas, predominantly for space heating and water heating.

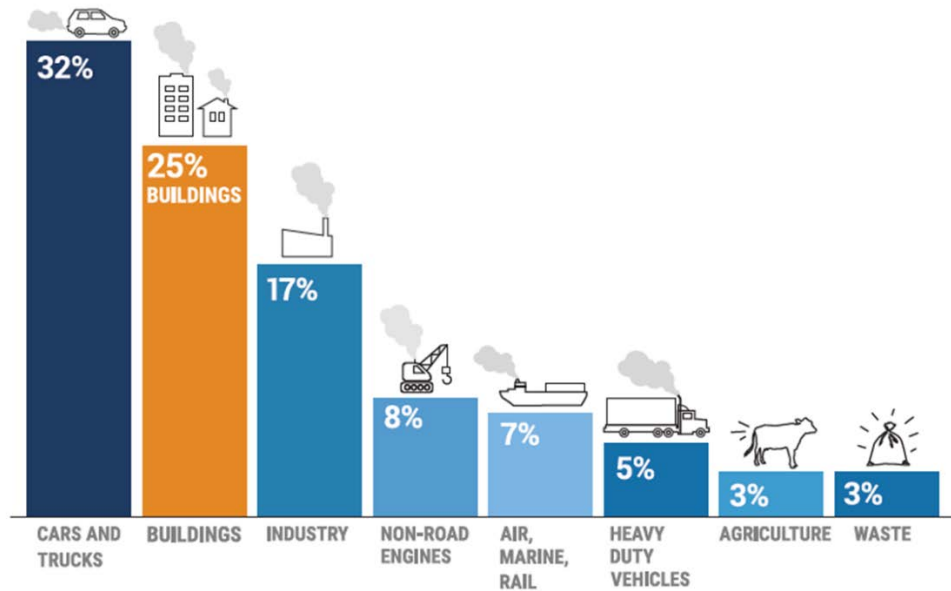
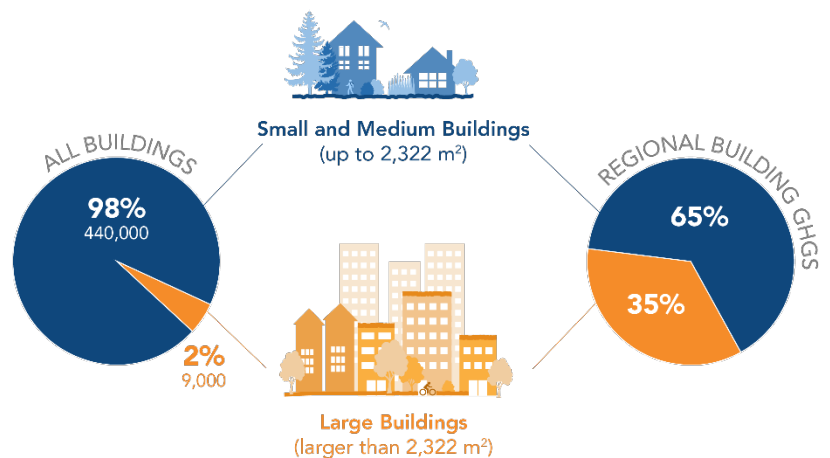


Figure 1: GHG emissions by sector in Metro Vancouver in 2015.

Large buildings, defined as those over 2,322 m² (25,000 ft²), account for about 9,000 of the approximately 440,000 buildings within the region. Although large buildings represent just 2% of the total building stock, they collectively account for almost 40% of the total floor space and contribute approximately 35% of all GHG emissions from buildings. These existing large buildings – with their combined floor space of 185 million m² (2 billion ft²) – are the focus of this proposed regulation.



In Metro Vancouver, GHG emissions from existing buildings have increased by 10% over the past decade. To significantly reduce GHGs emissions from the building sector and meet the region’s climate targets, regulations are needed to require buildings to transition away from fossil fuels. Given that space heating and hot water heating systems are typically replaced every 20 to 30 years, building owners need to know about future GHG emission limits so they can consider low- or **zero-emission** options when planning and budgeting for long-term building upgrades.

Co-Benefits of Reducing GHG Emissions in Buildings

Reducing a building’s GHG emissions generates a range of benefits. Some of the benefits of reducing GHG emissions in large buildings include:

- Improved health of building occupants, when building upgrades to achieve GHG emissions reduction include upgrades that improve ventilation and indoor air quality.
- Improved local air quality and a reduction in health-harming **air contaminants**.
- Increased resilience of building occupants to extreme heat events when low-carbon systems such as electric heat pumps (which provide both heating and cooling) are installed.
- Improved resilience to power outages and extreme weather events, when energy-efficiency upgrades are paired with on-site renewable energy systems and energy storage.

The devastating consequences of the 2021 heat dome in BC underline the importance of initiatives to both reduce GHG emissions and protect health through energy-efficient cooling and heating systems in buildings.

Jurisdictional Alignment

There is currently a gap in how emissions are regulated in the building sector. While municipalities can adopt provincial building codes to require *new* buildings to be built to low-carbon standards, there are no region-wide regulations that require *existing* buildings to reduce their operational GHG emissions.

Figure 2 below shows how the regulatory proposal will address this gap.

FILLING A REGULATORY GAP FOR OPERATIONAL EMISSIONS EXISTING LARGE BUILDINGS
NOT INCLUDING HEAVY INDUSTRIAL SOURCES

	New Building GHG Reductions	Existing Building GHG Reductions	Existing Building Energy Efficiency
Province of BC	Zero Carbon Step Code 2030		PROPOSED: BC Efficient Equipment Standards for Gas or Electric Heating & Hot Water by 2030
Metro Vancouver		PROPOSED: GHG Limits for Large Buildings	
City of Vancouver	Vancouver Building By-law (No.12511) – GHG requirements	Vancouver Annual Greenhouse Gas and Energy Limits By-law (No. 13472)	Vancouver Building By-law (No.12511) Vancouver Annual Greenhouse Gas and Energy Limits By-law (No. 13472)

Figure 2: Overview of requirements for energy and GHG emissions reduction

The *Building Act (2015)* gives the Province the primary authority to set technical building requirements. The Province recently enacted the *Zero Carbon Step Code*, which provides tools for local governments to encourage or require lower GHG emissions from new construction. In the *CleanBC Roadmap to 2030*, the Province has committed that the *BC Building Code* will require all new buildings to be **zero-carbon** by 2030.

While there are currently no provincial requirements for GHG emissions reduction from existing buildings, the Province is developing a requirement in the *CleanBC Roadmap* that all space heating and domestic hot water equipment sold in BC be 100% efficient by 2030. Appliances for space heating and domestic hot water that use electric resistance or heat pump technologies would meet this standard.

Metro Vancouver’s regulatory proposal complements this *Clean BC* equipment-efficiency standard. The regulatory proposal seeks to encourage building owners to plan ahead for a shift to zero-emissions technology when replacing equipment and the *CleanBC* requirement should increase the availability of energy-efficient equipment. The regulatory proposal also seeks to help measure the effectiveness of the equipment-efficiency standard by tracking a building’s GHG emissions reduction.

The City of Vancouver has a target to cut building GHG emissions in half by 2030 from 2007 levels, and a key strategy for meeting this target is its recently adopted [Annual Greenhouse Gas and Energy Limits By-law \(No. 13472\)](#). This 2022 by-law includes GHG reporting requirements for some building types over 4,645 m² (50,000 ft²), as well as performance-based emission limits for office and retail buildings over 9,290 m² (100,000 ft²). Metro Vancouver’s regulatory proposal complements the City of Vancouver’s approach and allows for the scaling-up of GHG emissions reduction across the region.

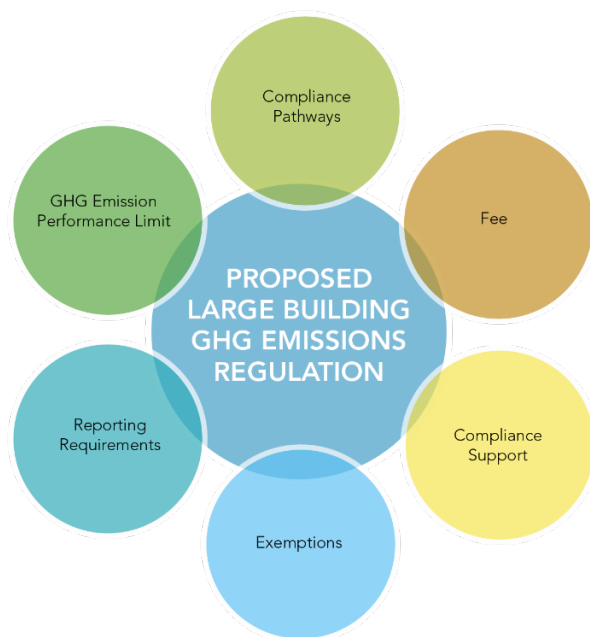
Apart from the City of Vancouver, member jurisdictions of Metro Vancouver comply with the *BC Building Code* and do not establish their own GHG performance limits for existing buildings. Metro Vancouver’s regulatory proposal seeks to reduce GHG emissions from the building sector and help these jurisdictions meet their climate targets. The regulatory proposal would also establish regionally consistent emission requirements for industry and building owners when planning building renewals, major renovations, or heating/cooling equipment replacements.

Metro Vancouver has a number of initiatives to protect air quality, including the *Greater Vancouver Regional District Boilers and Process Heaters Emission Regulation Bylaw No. 1087, 2008* (Bylaw 1087), which regulates the discharge of health-harming air contaminants like nitrogen dioxide from buildings and industrial facilities that use **boilers** or process heaters. Large buildings that use natural gas, propane, or biomass-powered boilers for space heating and water heating would need to comply with Bylaw 1087 while transitioning to zero-emission technology. More information on the complementary initiative to further reduce health-harming air contaminants through Bylaw 1087 can be found [here](#).



Regulatory Proposal for GHG Emissions Reduction from Large Existing Buildings

This section outlines the regulatory proposal to reduce GHG emissions from existing large buildings through annual reporting and GHG reduction requirements.



Regulatory Scope

The regulatory proposal to reduce GHG emissions from existing large buildings would apply to commercial, residential, and other buildings over 2,322 m² (25,000 ft²). There is a separate action and commitment in the *Climate 2050 Buildings Roadmap* to establish future GHG requirements for buildings below this size threshold.

The regulatory proposal focuses on GHG emissions from on-site space heating and domestic hot water systems. Metro Vancouver would seek to manage district energy emissions at the source (at the district energy facility). **Light industrial facilities** defined as storage or warehouse facilities are within the scope of the regulatory proposal, however, the regulatory proposal does not apply to buildings having the following major occupancies classified under the BC Building Code: detention or correctional facilities, treatment facilities (e.g., hospitals), or **heavy industrial facilities** (including some permitted by Metro Vancouver), where there are high process loads warranting additional energy use. There are separate actions and policies in the *Climate 2050 Industry Roadmap* that address industrial facilities.

Reporting Requirements

Building owners would need to collect and share building-level GHG emissions data to establish a building's baseline GHG emissions and track progress towards meeting zero-emission targets. Currently, many building owners voluntarily collect and report data through [Energy Star Portfolio Manager](#) (ESPM), which is an industry standard for GHG emissions reporting.

The table below shows the proposed reporting timeline for different building occupancies and size categories.







The following five principles have guided the development of the regulatory proposal:

1. **Minimize risk:** Minimize risk to air quality, the local environment, and the global climate from GHG emissions and other air contaminants.
2. **Communicate in advance:** Inform building owners of proposed requirements ahead of their effective date so owners can prepare for upgrades and ensure large investments are in alignment with GHG emissions-reduction targets.
3. **Ensure fairness:** Develop fair requirements and compliance pathways that consider the particular challenges faced by owners of various building occupancy types and by individual buildings.
4. **Develop supports:** Collaborate with affected parties and organizations to create coordinated, streamlined, efficient, and well-resourced support programs.
5. **Recover costs through fair fees:** Recover regulatory program costs efficiently and ensure fees promote continuous improvement, in a fair and effective manner that reflects the harmful impacts of GHG emissions.

GHG reporting would be completed annually, with a **June 1 reporting deadline**. The submitted data would cover the previous full calendar year (for example, building owners would need to report January 1 to December 31, 2025 data by June 1, 2026).

[Please see the appendices](#) for more information on the types of buildings that fall within each major occupancy category and the type of data that would be reported.

Table 1: Proposed reporting requirement timeline categorized by building occupancy² and size

		FIRST REPORTING YEAR					
		2026	2027	2028	2029	2030	2045
BUILDING OCCUPANCY	 Office & Retail	>9,290 m ²	>4,645 m ²	>2,322 m ²			
	 Assembly Occupancies (i.e. theatres, arenas, stadiums, schools, and meeting places)						
	 Light Industrial						
	 Hotels						
	 Multi-Unit Residential						
	 Care Occupancies		>9,290 m ²	>4,645 m ²	>2,322 m ²		

Setting and Phasing-in Greenhouse Gas Emission Intensity Limits

Metro Vancouver proposes to set phased-in **GHG emission intensity limits** so that owners of large buildings can take steps to reduce GHG emissions in support of the region’s commitment to zero-emission buildings by 2050.

The proposed GHG emission intensity limits represent the maximum GHG emissions that a building of a particular type could emit per unit of floor area (expressed as kilograms of CO₂e per m²) before emission fees apply. The limits would initially be set at a modest level for the largest buildings, to capture the highest-emitting buildings first. The limits would eventually become more stringent to encourage building owners to take the steps needed to transition to zero-emission buildings.

Initial and Final GHG Emission Intensity Limits

An initial GHG emission intensity limit is proposed for 2028 for office and retail buildings over 9,290 m² (100,000 ft²). Office buildings would have a GHG emission intensity limit of **25 kg CO₂e/m²** and retail buildings would have a GHG emission intensity limit of **14 kg CO₂e/m²**.







These initial limits have been proposed based on modelling to meet at least a 35% GHG reduction of emissions from office and retail buildings by 2030, which aligns with Metro Vancouver’s *Climate 2050* and *Clean Air Plan* GHG emissions reduction target for all buildings by 2030. The proposed GHG emission intensity limits also align with those in the City of Vancouver’s *Annual Greenhouse Gas & Energy Limits By-Law*. This alignment is important to ensure fairness and consistency across the Metro Vancouver region.

In addition to these initial GHG emission intensity limits, Metro Vancouver is also proposing a final GHG emission intensity limit of **0 kg CO₂e/m² for all regulated building types over 2,322 m² (25,000 ft²) by 2045**. This final GHG limit is set five years before 2050 so that building owners have time to take action and for the GHG reductions to occur in time for the region’s zero-emission buildings target for 2050.

² A description of each building occupancy can be found in the appendices.

Metro Vancouver would **exclude GHG emissions from cooking and district energy use** from initial and final GHG limits for buildings. Metro Vancouver will work with district energy providers to explore instruments for managing GHG emissions at the district energy facilities.

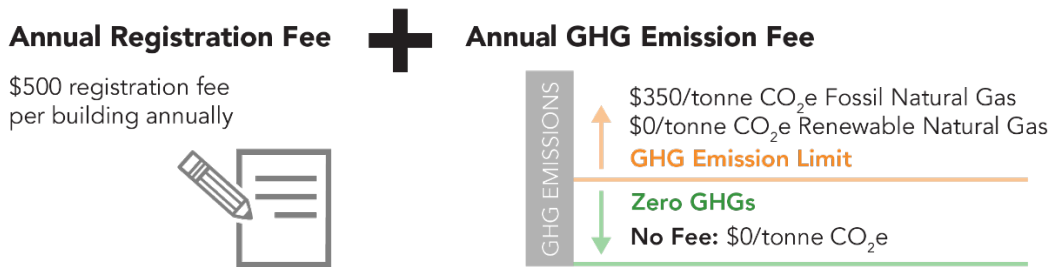
Table 2: The following table shows the proposed GHG emission intensity limits depending on the building occupancy and size. An initial GHG emissions intensity limit is proposed for office and retail above 9,290 m², and a final GHG emission intensity limit is proposed for all building occupancies over 2,322 m².

		GHG EMISSION INTENSITY LIMITS					
		2026	2027	2028	2029	2030	2045
BUILDING OCCUPANCY	 Office & Retail			>9,290 m ²			
	 Assembly Occupancies (i.e. theatres, arenas, stadiums, schools, and meeting places)			Initial GHG limit Retail: 14 kg CO ₂ e/m ² /year Office: 25 kg CO ₂ e/m ² /year			
	 Light Industrial						
	 Hotels						
	 Multi-Unit Residential						
	 Care Occupancies						
							Final GHG limit All buildings over >2,322 m ² : 0 CO ₂ e/m ² /year

Building owners can implement numerous interventions to reduce a building’s GHG emissions and meet the proposed GHG emission intensity limits, including the final limit of zero emissions by 2045. These interventions are not a requirement under the proposed regulation but demonstrate some common opportunities to reduce a building’s GHG emissions. Some interventions include, reducing energy use by replacing windows, upgrading insulation and installing smart controls, and switching out gas-fired heating and hot water systems with electric equivalents. A decarbonization plan is recommended as a good first step for understanding the most effective options for a specific building. Alternatively, buildings owners could pay a GHG emission fee.

Proposed Fees

Metro Vancouver establishes regulatory fees as part of its air emission management program to recover administrative costs and encourage emissions reduction based on the potential health and environmental impacts of air emissions. This intentions paper proposes the following fees:



Annual Registration Fee

The fee of **\$500** per building would be charged annually to all buildings registered with Metro Vancouver. This fee would support cost recovery for resources to administer the program.

GHG Emission Fees

A building's GHG emission intensity (expressed as kilograms of CO₂e per m²) is subtracted from the proposed GHG emission intensity limit, and the remaining emissions that are above the limit are converted to GHG emissions for the entire building (expressed as tonnes of carbon dioxide equivalent for the total gross floor area of the building per year, or tonnes/CO₂e per year). The annual GHG emission fee would apply to the total gross floor area of the building.

If a building is under its specified GHG emission intensity limit, there are no applicable GHG emission fees. If a building exceeds the limit, the building owner would pay a fee that is currently proposed at \$350/tonne CO₂e for GHG emissions that result from the combustion of fossil natural gas.

Some building owners may use renewable natural gas (RNG) as a transition fuel in their progress toward zero-emission buildings. Metro Vancouver proposes initially applying a GHG emission fee of \$0/tonne CO₂e for GHG emissions from RNG use. Metro Vancouver applies emission fees for the discharge of health-harming air contaminants from the combustion of RNG in buildings that must register through the *MVRD Boilers and Process Heaters Emission Regulation Bylaw No. 1087, 2008*. In the future, Metro Vancouver may propose GHG emission fees for RNG use, recognizing that RNG is a scarce resource that should be prioritized for sectors that are harder to transition to zero-emission technology in order for the overall region to achieve carbon neutrality by 2050.

Alternative Compliance Pathways

All buildings are proposed to be subject to a GHG emission intensity limit of zero by 2045. However, some buildings may face exceptional barriers to comply with a GHG emission intensity limit for a given year due to financial, structural, or technological constraints. During engagement, Metro Vancouver will consider opportunities for alternative compliance options for buildings that require more flexibility in their decarbonization process.

Exemptions

A building owner would be exempt from the proposed regulation in a given year if:

- The building received preliminary approval for an application for demolition but is waiting for all occupants to move out.
- The building received an occupancy permit during the reporting year, and the building was not in operation for the full calendar year.

Equity Considerations

Metro Vancouver is also proposing a parallel stream of engagement that responds to equity. This engagement process will be developed to ensure that compliance with emissions regulation based on the regulatory proposal does not create more inequity for communities already facing the impacts of climate change. There are many equity-related benefits to reducing GHG emissions in buildings such as access to cooling, improved thermal comfort, and better air quality. Other

jurisdictions with regulations for GHG emissions reduction from large existing buildings, such as Denver, Colorado, have implemented measures to identify, support, and offer alternative compliance pathways to address equity. These considerations will be further explored during the public engagement process.

Resources for Implementation

Metro Vancouver would be responsible for establishing the resources for implementation of an emissions regulation, including communication, technical support, and compliance promotion, based on a cost recovery model similar to its broader air quality regulatory program. The specific resources for labour, professional services, and information management systems will be outlined for the MVRD Board's consideration along with reporting on the results of engagement and a proposed regulation.

Additional Requirements Developed through Engagement

Metro Vancouver will explore additional requirements through this proposed engagement as listed below.

- Prescriptive time-of-replacement requirements for heating equipment, aligned with the proposed provincial standard
- Alternative compliance considering equity
- Interim GHG emission intensity limits for office and retail occupancies over 9,290 m²
- Initial and interim GHG emission intensity limits for office and retail occupancies between 2,322 m² and 4,645 m²
- Initial and interim GHG emission intensity limits for other building types, such as multi-unit residential, light industrial, hotels and care occupancies over 2,322m²

Incentives and Support

Metro Vancouver recognizes that, for some buildings, the cost and complexity of transitioning to zero-emission buildings underlines the importance of ensuring that building owners are well supported. Metro Vancouver would offer technical support to building owners as part of compliance promotion funded by program fees.

Building owners can access existing incentives to improve a building's GHG performance through the [Clean BC Better Buildings](#) program. Low interest financing programs are also offered through the Canada Infrastructure Bank, and financing options are available through financial institutions. Buildings might also consider working with energy service companies to explore financing options for projects that achieve energy and GHG emissions reduction.

Metro Vancouver is also advocating to other orders of government to expand low-carbon incentives in the region.

Future Supports

Metro Vancouver is developing a Retrofit Accelerator support hub for building owners in partnership with the [Metro Vancouver Zero Emissions Innovation Centre](#). The Retrofit Accelerator will provide building owners, including commercial and residential, with technical services and supports to meet their decarbonization targets. Program offerings could include assisting with set-up on Energy Star Portfolio Manager, identifying available incentives and financing opportunities, and providing guidance on decarbonization plans. The program will also seek partnerships with organizations that have existing supports in place to streamline program offerings to building owners.

Providing Feedback and Comments

Interested parties are invited to provide feedback in 2024. Metro Vancouver will consider input until the MVRD Board decides on an emissions regulation.

Metro Vancouver staff and contractors will treat all comments received with confidentiality; however, please note that the comments you provide and any information that identifies you as the source of those comments may be publicly available if a freedom of information request is made under the *Freedom of Information and Protection of Privacy Act*.

If you have any questions or comments regarding this initiative, please call 604-432-6200 or email us at climate2050@metrovancover.org.

For more information, visit metrovancover.org and type “[building emissions action](#)” into the site’s search field. You can also sign up for the project mailing list to receive updates and notifications about engagement opportunities.



Glossary

The following definitions are for clarification and discussion purposes only and are not intended to be used as legal definitions. The draft regulation will include legal definitions.

Air contaminant means any substance that is emitted into the air and that (a) injures or is capable of injuring the health or safety of a person; (b) injures or is capable of injuring property or any life form; (c) interferes or is capable of interfering with visibility; (d) interferes or is capable of interfering with the normal conduct of business; (e) causes or is capable of causing material physical discomfort to a person; or (f) damages or is capable of damaging the environment (*Metro Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008*).

Boiler means any combustion equipment fuelled solely by natural gas, propane, or biomass that produces hot water or steam, but does not include: (a) waste heat boilers; (b) sulphur plant reaction furnaces, steam reformer heaters and steam cracking heaters in the refined petroleum products industry as identified in the North American Industry Classification System (NAICS) code 324110; and (c) process heaters (*Metro Vancouver Regional District Boilers and Process Heaters Emission Regulation Bylaw No. 1343, 2022*).

Carbon dioxide (CO₂) is a greenhouse gas that is the primary driver of climate change. Carbon dioxide is produced both naturally and through human activity, primarily by burning fossil fuels.

Carbon dioxide equivalent (CO₂e) is a unit of measurement that standardizes the impact of emissions from different greenhouse gases – like methane or nitrous oxide – on climate based on the equivalent global warming potential of carbon dioxide.

Carbon-neutral region means a region that has achieved the deepest greenhouse gas emissions reduction possible across all economic sectors, and any remaining emissions are balanced out by the carbon dioxide removed from the atmosphere by the plants, trees, and soil in the region, as well as by potential carbon capture technologies that are available or under development.

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

Greenhouse Gas Emission Intensity Limit is a measure of a building's greenhouse gas performance calculated using fuel type emissions factors, reported in kilograms carbon dioxide equivalent per square metre per year (kgCO₂e/m²).

Heavy industrial facilities: This is defined as buildings that fall under the *BC Building Code* definition of industrial occupancy. It is defined as the occupancy or use of a building or part thereof for the assembling, fabricating, manufacturing, processing, repairing or storing of goods and materials (*BC Building Code, Section 1.4, 2024*).

Light Industrial facilities: For the purposes of this intentions paper, light industrial facilities are defined as storage and warehouse facilities and are in scope of the regulatory proposal.

Nitrogen oxides (NO_x) are a group of gases, including nitrogen dioxide, that are produced during high-temperature fuel combustion, and that can contribute to the formation of ground-level ozone and fine particulate matter.

Renewable natural gas is a renewable form of natural gas with a low carbon intensity. Sources of renewable natural gas include landfill gas and organic waste.

Zero-carbon or **zero-carbon emissions** refers to technologies or practices that generate no net greenhouse gas emissions at the point of use. A zero carbon fuel source either produces no greenhouse gas emissions or any greenhouse gas emissions produced are offset by renewable energy (either generated on-site or purchased).

Zero-emission means no greenhouse gases or other air contaminants are generated at the point of use. Zero emission includes zero carbon (see above) and also eliminates emissions of health-harming air contaminants (e.g., fine particulate matter and nitrogen oxides).

Appendices

Appendix 1: Sample description of buildings as classified in Energy Star Portfolio Manager that fall within a given building category and that are based on BC Building Code occupancy types

Building Occupancies	BC Code Occupancy Types	Building Types (Aligned with Energy Star Portfolio Manager)
Office & Retail	<ul style="list-style-type: none"> • Business and personal services occupancies (D) • Mercantile occupancies (E) 	Medical office, office, bank branch, financial office, veterinary office, personal services (health/beauty, dry cleaning, etc.), repair services (vehicle, shoe, locksmith, etc.), data centre, convenience store (with gas station), convenience store (without gas station), food sales, food service, supermarket/grocery store, mailing centre/post office, automobile dealership, enclosed mall, lifestyle centre, retail store, strip mall, wholesale club/super centre.
Assembly Occupancies (i.e., theatres, arenas, stadiums, schools, and meeting places)	<ul style="list-style-type: none"> • Assembly occupancies intended for the production and viewing of the performing arts (A1) • Assembly occupancies not elsewhere classified in Group A (A2) • Assembly occupancies of the arena type (A3) • Assembly occupancies in which occupants are gathered in the open air (A4) 	Movie theatre, performing arts, restaurant, adult education, college/university, K-12 school, pre-school/daycare, vocational school, aquarium, bar/night club, bowling alley, casino, convention centre, fitness centre/health club/gym, museum, race track, roller rink, social/meeting hall, stadium (enclosed), zoo, fast food restaurant, courthouse, fire station, library, transportation terminal/station, worship facility, ice/curling rink, indoor arena, swimming pool, stadium (open air).
Light Industrial (Storage and warehouse facilities)	<ul style="list-style-type: none"> • Industrial occupancies (F 1-3) 	Self-storage facility, non-refrigerated warehouse, refrigerated warehouse
Hotels/Multi-Unit Residential	<ul style="list-style-type: none"> • Residential occupancy (C) 	Multifamily housing, hotel, residence, hall/dormitory, barracks
Care Occupancies	<ul style="list-style-type: none"> • Care occupancy (B3) 	Residential care facilities (without treatment facility), senior living community

Appendix 2: Proposed reporting details to be submitted to Metro Vancouver

Metro Vancouver Data Declaration	
Descriptive Information	<ul style="list-style-type: none"> • Building address • Building primary occupancy type • Other occupancies types • Total gross floor area • Percentage of building occupied • Name of contact submitting report • Owner(s) of the building • Year of construction • Number of storeys • Number of active energy meters by fuel type for whole building • List of central heating or hot water equipment (i.e., boiler)
Building Performance Information	<ul style="list-style-type: none"> • Annual site energy use by fuel type and proof of energy use by fuel type (i.e. utility billing) • Annual GHG emissions directly attributed to the energy use for space and hot water systems • Greenhouse gas emission intensity (annual GHG emissions in kg CO₂e/gross floor area in m²)

Phase 2 Engagement Approach: Proposed Regulatory Approach to Reduce Greenhouse Gas Emissions from Existing Large Buildings

The second phase of engagement for the *Regulatory Proposal to Reduce Greenhouse Gas Emissions from Existing Large Buildings* will be based on the contents of the *Regulatory Proposal to Reduce Greenhouse Gas Emissions from Existing Large Buildings Intentions Paper* which describes both regulatory requirements and a timeline for implementation. The intentions paper, drafted in 2023, reflects input from participants in the initial engagement phase in 2022. This next (second) phase of engagement is planned for 2024.

The goals of engagement are:

- to broaden awareness of the proposed regulation, and
- to obtain feedback from priority audiences for consideration in the development of a proposed regulation.

Specifically, staff are seeking feedback on perceived opportunities and barriers to meeting the requirements and the timelines for both implementation and compliance as described in the intentions paper.

Throughout this project, the priority audience for engagement is those likely to comment, be impacted or have a role in implementation. A parallel stream of the engagement is designated to hear from audiences responding in an equity context.

Staff will provide decision-makers with a summary of the feedback and how it is considered.

Engagement objectives

1. Engage with priority audiences (e.g., owner/operators of buildings including institutional buildings, commercial buildings, office towers, residential buildings, etc.) on the proposed:
 - requirements that could be part of an emission regulation,
 - timeline for implementation of emission regulation requirements, and
 - timeline for achieving emissions reduction).
2. Implement a parallel stream of engagement to specifically hear the interests of audiences considered in an equity context, such as community housing providers.

Audiences

Metro Vancouver is committed to engaging with interested and impacted groups, member jurisdictions, and other governments, including First Nations, with a focus on those likely to comment, be impacted, or have a role in implementation. Database categories include:

- Building owners, managers, and developers
- HVAC and plumbing manufacturers, suppliers, trades, and mechanical contractors
- Public institutions, school districts, and municipal facility managers and operators
- Health facility managers and health authorities
- Building engineers, architects, and consultants
- Storage facilities
- NGO/NPO/Academics with focus on building sector policy development
- Community housing providers
- First Nations
- Member jurisdictions
- Provincial government agencies
- Hotels
- Multi-unit residential associations
- Care occupancies
- Grocery stores
- Warehouses

Aligned Initiatives

Metro Vancouver is aware that both the City of Vancouver are working on aligned initiatives. In some instances, for example in the City of Vancouver, a building owner may be contacted by or hear information about both the City and Metro Vancouver initiatives. To avoid confusion, it is essential for regulatory requirements *and engagement* to be aligned.

An objective of the engagement is to broaden the awareness of the Metro Vancouver initiative. The City has already communicated with many individuals, and likely beyond those reached by Metro Vancouver in phase 1 engagement. Therefore, engagement staff at both organizations will collaborate on engagement for audiences within the City of Vancouver. This will reduce engagement fatigue and provide clarity on alignment. Examples of this collaboration may include: meetings, workshops, communication materials, advisory groups and more. It is also noted that staff are exploring alignment on regulatory requirements, where a key example is building emissions reporting.

Staff are also working with Provincial staff, and communication during the engagement period will include how Metro Vancouver's proposed regulation aligns with, and supports, the Provincial Highest Efficiency Equipment Standard (HEES).

Methods and Timing

Engagement tactics will vary according to audience, where specific activities are described in Table 1.

Engagement opportunities will be promoted through the project database, project website, social media, direct phone calls, and through association communications to members.

Table 1: Engagement Tactics and Anticipated Outcomes

Tactic	Outcome
<ul style="list-style-type: none"> Individual meetings One on one phone calls 	For specific, core audiences, staff expect to hear detailed insights into the barriers and opportunities to meeting the proposed regulation; build understanding and support for the approach.
<ul style="list-style-type: none"> Small group roundtables organized by sector or audience Presentations to relevant pre-existing municipal advisory committees 	Staff will build relationships to further engage on this initiative, and understand specific considerations to each building category that may challenge compliance.
<ul style="list-style-type: none"> Public webinars Climate Action Dialogues Online feedback form 	For a broader public, or those not available to participate in activities above, this is an opportunity to provide comments, or raise issues that other audiences may not have.
<ul style="list-style-type: none"> Public Survey 	A survey to gauge public support, and understand public concerns, for the regulation.

Table 2: General Project Timeline

Action adopted in Metro Vancouver's Clean Air Plan	Initial engagement on approach: 'Listen and Learn'	Engagement on regulatory proposals	Implementation through 2030
2021	May to November, 2022	2024	Mid 2020s through 2030.



We are here

Equity Considerations

Equity considerations will be addressed in a parallel stream of engagement, which will focus on hearing from associations and building owners and managers. Community Housing providers are an example for this engagement stream. In addition to meeting with individual representatives, staff will connect with relevant advisory groups in member municipalities.

Through this engagement stream staff will seek input to support developing a regulatory approach that considers inequity. Here, inequity considers that some individuals and communities are affected by climate change at higher rates than others, often due to systemic barriers. These same individual and communities often have the least available resources to respond.

This engagement stream will provide context for staff to consider alternative compliance pathways, incentives, alternative timelines, administration support, or other options. It will also identify resources community providers need to reduce building emissions and comply with any regulations. As an added benefit, this may also support an equitable distribution of benefits such as access to cooling, improved thermal comfort, and better air quality.

This approach to the second phase of engagement will meet the engagement objective to hear the interests of audiences considered in an equity context.



Proposed Regulatory Approach to Reduce Greenhouse Gas Emissions from Existing Large Buildings: Phase 2 Engagement

Nav Hundle
Senior Policy & Planning Analyst,
Air Quality & Climate Action Services

Laura Taylor
Senior Engagement Specialist,
External Relations

Climate Action Committee – January 11, 2024
64345721



CLEAN AIR PLAN & CLIMATE 2050 BUILDINGS ROADMAP

Delegated authority under
BC *Environmental Management Act* to
regulate discharge of air contaminants
including GHGs

By 2030

- 35% reduction in GHG emissions
- 15% reduction in NOx emissions

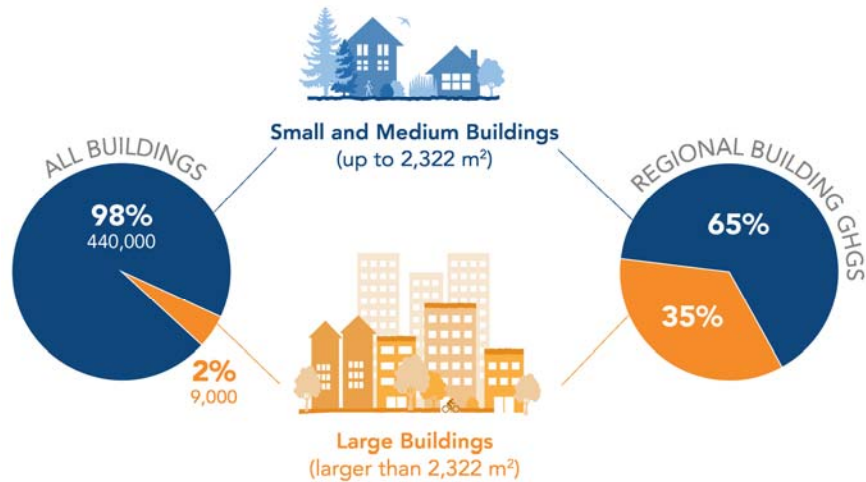
By 2050

- All buildings are zero emissions in their operation, deriving all energy needs from 100% clean and renewable sources.



CONTRIBUTION TO REGIONAL GHG EMISSIONS

Large buildings over 2,322 m² relative to all existing buildings in Metro Vancouver



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FILLING A REGULATORY GAP FOR OPERATIONAL EMISSIONS

EXISTING LARGE BUILDINGS - NOT INCLUDING HEAVY INDUSTRIAL SOURCES

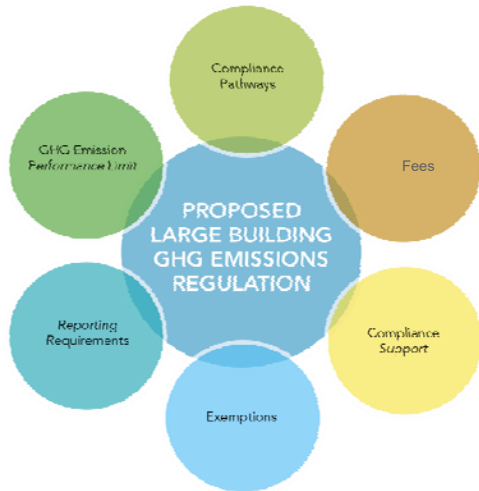
	New Building GHG Reductions	Existing Building GHG Reductions	Existing Building Energy Efficiency*
Province of BC	Zero Carbon Step Code 2030		PROPOSED: BC Efficient Equipment Standards for Gas or Electric Heating & Hot Water by 2030
Metro Vancouver		PROPOSED: GHG Limits for Large Buildings	
City of Vancouver	Vancouver Building By-law (No. 12511) – GHG requirements	Vancouver Annual Greenhouse Gas and Energy Limits By-law (No. 13472)	Vancouver Building By-law (No. 12511) Vancouver Annual Green- house Gas and Energy Limits By-law (No. 13472)

*Energy efficiency will also achieve
GHG reductions

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COMPONENTS OF REGULATORY PROPOSAL



Phase in GHG Emissions Reporting

- All buildings over 2,322 m² (25,000 ft²)
- **Initial reporting years (2026-2028):** All buildings
- Start with buildings over 9,290m² (100,000 ft²) in 2026

Phase in GHG Performance Limits

- **Initial limit (2028):** office & retail buildings over 9,290m² (100,000 ft²)
- **Final limit (2045):** zero emissions for all buildings over 2,322m² (25,000 ft²)
- Excludes GHG emissions from cooking and district energy use

Requirements for additional building sizes and types to be considered through engagement.

SUPPORTS FOR BUILDING RETROFITS

Incentives and Financing

- Clean BC incentives
- Utility incentives
- Federal tax rebates and incentives
- Canada Infrastructure Bank – low-interest financing
- Retrofit financing programs offered through financial institutions

Coaching and Support

- BC Hydro Energy Manager program
- Landlord BC Rental Apartment Retrofit Accelerator (RARA) pilot
- Clean BC small building energy coach
- ReFramed Initiative
- **Metro Vancouver Regional District Retrofit Accelerator**



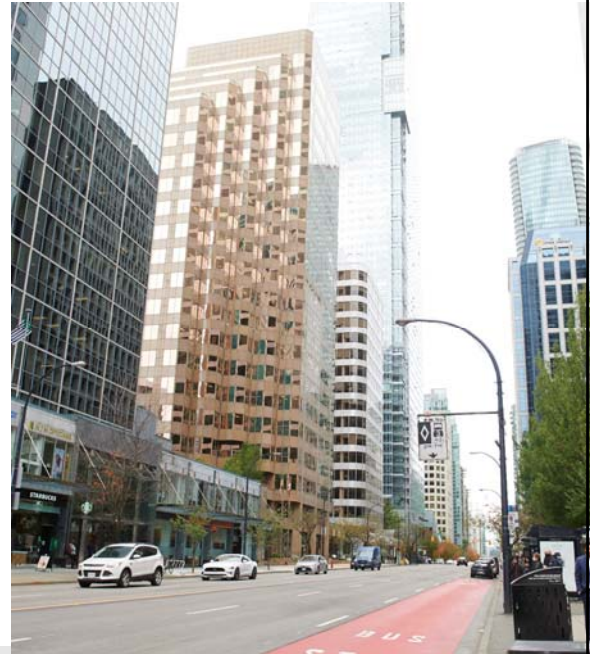
PHASE 2 ENGAGEMENT APPROACH

Goals

- Broaden awareness of regulatory proposal
- Seek feedback from key audiences for consideration in the development of a proposed emission regulation

Major Considerations

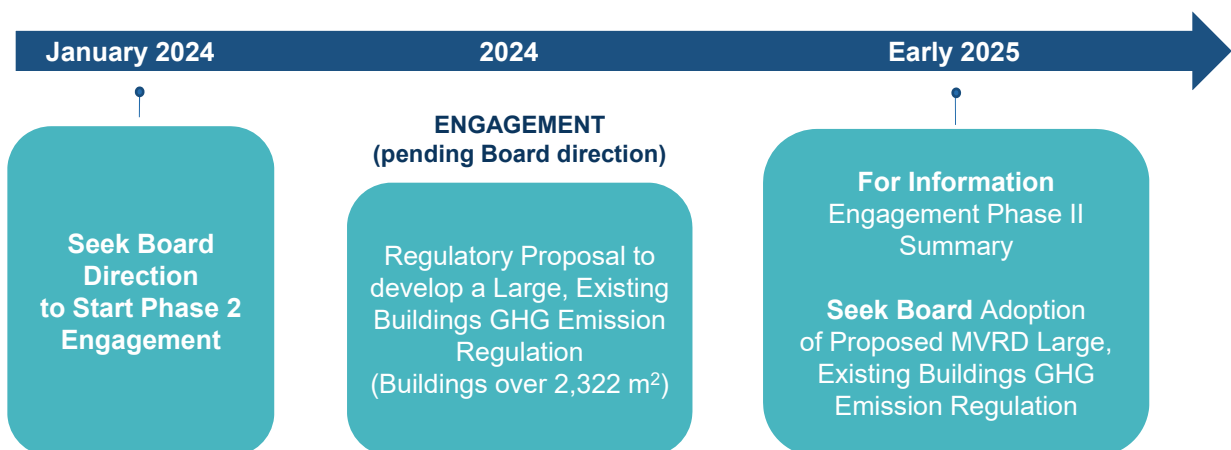
- Alignment with City of Vancouver and Province
- Parallel stream of engagement to hear interests of audiences considered in an equity context



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TIMELINE AND ENGAGEMENT OPPORTUNITIES



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Committed to a carbon neutral region by 2050.



Thank you

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9

To: Climate Action Committee

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

Date: December 14, 2023 Meeting Date: January 11, 2024

Subject: **Manager's Report**

RECOMMENDATION

That the Climate Action Committee receive for information the report dated December 14, 2023, titled "Manager's Report".

Sharing Data for Zero Emissions Buildings

The objective of the Sharing Data for Zero Emissions Buildings (SDZEB) project is to create a regional database and tool that estimates energy attributes of detached homes, row homes and townhomes that contribute to greenhouse gas (GHG) emissions, to support Metro Vancouver to develop and advocate for data-driven, equitable policies and programs to reduce greenhouse gases and increase resiliency in small buildings, in accordance with Actions of the *Buildings Roadmap* and *Clean Air Plan*. This project has two phases:

1. Modeling GHG emissions from detached homes, row homes, and townhomes at the building level; and
2. Developing program and policy recommendations that consider a range of equitable outcomes alongside GHG emission reductions.

The first phase, which is now complete, produced a database of homes with the modelled results of virtual energy audits on each home, including the cost, energy, and GHG impacts of various retrofit measures. The tool allows users to examine the potential of various retrofit measures to achieve near-zero or zero emissions at the lowest cost, to inform developing data-based policies and programs.

In 2024, staff will proceed with the project's second phase, which is to identify particular types of homes or groups of homes that are occupied by people who are most vulnerable to heat events thus would benefit from cooling or in need of support to undertake retrofits. Together, phases one and two are expected to provide a more comprehensive dataset to enable creating policies and programs, such as the creation of replicable retrofit packages, that achieve optimized outcomes for GHG reduction, cost savings, and equity. These results can be used to inform data-driven and equity-focused program and policy recommendations for homes.

Staff will also share best practices with the Province for methodologies to inform related provincial initiatives such as a province-wide home energy labelling program that similarly models energy use and emissions from homes. Due to data-sharing constraints, staff are unable to publish address-level results publicly, but intend to report high-level insights and results to the Climate Action

Committee. Staff intend to provide these high-level results and an update on Phase 2 of SDZEB in 2024 to the Climate Action Committee.

Zero Carbon Step Code Adoption by Metro Vancouver Member Jurisdictions

The Zero Carbon Step Code (ZCSC) was enacted by the Province in May 2023, providing municipalities with the authority to limit the GHG emissions produced by heating equipment in new buildings. The ZCSC has four emissions levels ranging from EL-1 (measuring only), to EL-4, which would nearly eliminate on-site GHG emissions, most commonly by using electric space heating and domestic hot water systems such as heat pumps. Electric heat pumps are the lowest-cost way to provide heating and cooling in most households, both for retrofits and new builds (Reference 5). As noted in Report E.2 on this Climate Action Committee agenda, adoption of ZCSC is a high-impact Big Move for reducing emissions that also improves air quality and protects residents from extreme heat. To date, the following Metro Vancouver member jurisdictions have adopted ZCSC (Table 1).

Table 1. Metro Vancouver member jurisdictions' Zero Carbon Step Code adoption status¹

Municipality (Reference #)	Effective date	Part 9 (small) ² residential	Part 3 (large) ³
City of Burnaby (6)	Jan. 1, 2024	EL-3	EL-4
Township of Langley (7)	Apr. 1, 2024 Apr. 1, 2025	EL-2 EL-3	
City of New Westminster (8)	Jan. 1, 2024 Jan. 1, 2025	EL-4*	EL-1 EL-4*
City of Richmond (9)	Oct. 2023	EL-4*	EL-2*
District of West Vancouver (10)	Nov. 1, 2023	EL-3*	EL-3*
City of North Vancouver (11)	Nov. 1, 2023	EL-3*	
District of North Vancouver (12)	Nov. 1, 2023	EL-3*	EL-3*
City of Vancouver ⁴	Jan. 2022 Jan. 2025	EL-3	EL-2 EL-4

Table Notes:

- Status reflects the best information available to Metro Vancouver staff at the time of report publication.
- Part 9 buildings have a footprint less than 600m² (6500 ft²) and are three storeys or less.
- Part 3 buildings exceed 600m² in footprint or three storeys in height; applicable occupancies for the ZCSC (and Energy Step Code) are residential, business, personal services and mercantile.
- (*) denotes one or more alternative compliance path(s) with lower EL level and higher energy efficiency.
- The City of Vancouver has its own City Charter authority and is not subject to the BC Building Code; however, its Building By-law includes GHG limits that are equivalent to ZCSC.

Metro Vancouver staff are exploring opportunities to support additional member jurisdictions in adoption of ZCSC.

BC's 2023 Climate Change Accountability Report

The Province has released its Annual Climate Change Accountability Report (Reference 1), or CCAR, which provides an update on implementation of the *CleanBC Roadmap* to 2030 and the Climate Preparedness and Adaptation Strategy. The report includes the latest provincial emissions data, details the Province's spending on climate action, and assesses progress towards BC's emissions reduction targets. The report highlights that BC's total GHG emissions were down four per cent

from a 2007 baseline, and that implementation of all *CleanBC* policies and programs could achieve 96 per cent of the target of a 40 per cent reduction in GHG emissions by 2030. It also provides progress updates on a wide range of programs and actions to reduce emissions, build a cleaner economy, and prepare for the impacts of climate change.

Other highlights of the report include:

- **Supporting Local Climate Action:** Investing \$249 million in 59 infrastructure projects through the provincial *CleanBC Communities Fund* for renewable energy, clean transportation and energy efficient buildings. In 2022/2023, BC also provided over \$24 million to local governments and modern treaty nations through the *Local Government Climate Action Program (LGCAP)*.
- **Supporting Climate Preparedness, Resilience and Adaptation:** Enhancing the resiliency of local governments, First Nations and communities in responding to emergencies through the *Community Emergency Preparedness Fund*. BC is also helping communities, professionals, and others identify and manage disaster and climate risks by launching the *ClimateReadyBC* platform, and conducting a provincial Disaster and Climate Risk and Resilience Assessment.
- **Supporting Electric Vehicles and Charging:** Providing 9,693 Go Electric Passenger Vehicle rebates in 2022 and increasing the maximum amount from \$3,000 to \$4,000. The Go Electric EV Charger rebates funded charging stations for 2,318 homes, 547 multi-unit residential buildings, and 249 workplaces.
- **Public and Active Transportation Initiatives:** “Significant” investments in public transit and active transportation to ensure people have reliable and affordable service. This includes providing e-bike rebates, and programs to make public transit more affordable.
- **Residential Building Retrofits:** More than 13,000 *CleanBC* rebates for residential retrofits were provided, including 6,000 incentives to make heat pumps more affordable, for an 84 per cent increase from the previous year.

The full report includes detailed reporting on a number of *CleanBC* policies and programs and climate action indicators. Metro Vancouver and its member jurisdictions support the *CleanBC* reporting process through their reporting to the LGCAP program, and Metro Vancouver provides regional GHG emissions data to support BC’s GHG emissions reporting.

Roberts Bank Terminal 2 (RBT2) Project – Provincial Approval

On September 28, 2023, the Province announced its approval of the RBT2 Project. An Environmental Assessment Certificate, subject to 16 conditions, was issued to the Vancouver Fraser Port Authority (Reference 2). This provincial approval follows federal approval of the project on April 20, 2023, subject to 370 conditions to protect the environment, local wildlife and land-use activities of Indigenous Peoples. The RBT2 Project will see a new three-berth marine container terminal constructed at Roberts Bank in the City of Delta, next to the existing Deltaport and Westshore Terminals. Once complete, this Vancouver Fraser Port Authority project will add 2.4 million twenty-foot equivalent units of container capacity per year.

Metro Vancouver staff participated in the environmental assessment process for the RBT2 Project and provided input regarding Metro Vancouver’s plans, assets, infrastructure and legislated

responsibilities. Based on this input, the provincial approval conditions include explicit requirements for the Port to consult with Metro Vancouver on environmental management and greenhouse gas emissions, summarized below. The process and timeline for consultation are to be determined. For more detailed information, see Reference 3.

- Condition 8 - Construction Environmental Management Plan:
 - 8.1: Develop, in consultation with Metro Vancouver and others, a Construction Environmental Management Plan (CEMP). The Holder must retain one or more Qualified Professionals to develop a CEMP.
 - 8.2: The CEMP must address how mitigation measures will be implemented including erosion and sediment control, waste management, emergency response and spill prevention, noise and vibration management, health and safety management, human health effects, traffic management for land and marine traffic and how Indigenous Knowledge has been considered in the CEMP.
- Condition 9 - Operations Environmental Management Plan:
 - 9.1: Develop, in consultation with Metro Vancouver and others, an Operations Environmental Management Plan (OEMP).
 - 9.2: The OEMP must address how mitigation measures will be implemented including erosion and sediment control, waste management, emergency response and spill prevention, noise management, environmental monitoring, storm water management and wastewater management, health and safety management and how Indigenous Knowledge has been considered in the OEMP.
- Condition 16 – Greenhouse Gas Reduction Plan:
 - 16.1: Develop, in consultation with Metro Vancouver and others, a Greenhouse Gas Reduction Plan (GGRP).
 - 16.2: The GGRP must include an estimation of project greenhouse gas (GHG) emissions, consideration of emission reduction targets and schedules, an analysis of best available technologies to minimize GHG emissions and a GHG reduction potential analysis and a summary of how net-zero GHG emissions will be achieved by 2050.

More Stringent Volatile Organic Compound Limits Now in Effect in Canada

Volatile organic compounds (VOC) are found in most consumer and industrial products sold in the Metro Vancouver region. Some common consumer products that emit VOC include personal care products such as air fresheners and household cleaners. During and after product use, VOC evaporate into the air, where they can contribute to the formation of ground-level ozone and fine particulate matter, the two air contaminants with the most significant health impacts in the region. Use of consumer and industrial products is the largest anthropogenic source of VOC in the region, accounting for approximately 40 per cent of total regional VOC emissions. Transportation is the second largest source of anthropogenic VOC in the region.

On January 1, 2024, new federal requirements came into effect to reduce the amount of VOC released from many consumer and industrial products sold in Canada (Reference 4). The requirements set a maximum concentration of VOC that each product type can contain. The requirements apply to products such as cleaners, personal care products, adhesives, and sealants. The Government of Canada estimates that these requirements will help improve air quality by

reducing the levels of ground-level ozone and fine particulate matter. These improvements are expected to provide public health benefits across Canada of \$886 million over the next 10 years. Metro Vancouver staff provided feedback on the requirements during public consultation, as directed by Action 3.1.9 of the *Clean Air Plan* (“Improve Volatile Organic Compound Content Limits”).

Metro Vancouver staff will continue to advocate to the Government of Canada to set more stringent VOC limits for additional types of consumer and industrial products. Staff are also updating the 2014 *Regional Ground-Level Ozone Strategy*, which will identify policies and strategies to further reduce emissions of ozone precursors like VOC. Other initiatives that could reduce VOC emissions include enabling more sustainable transportation modes, and accelerating the transition to electric vehicles and electric lawn and garden equipment.

REFERENCES

1. [2023 Climate Action Accountability Report](#)
2. Roberts Bank Terminal 2 Project [Environmental Assessment Certificate – Table of Conditions](#)
3. [Minister’s Reasons for Decisions Report](#) – Robert’s Bank Terminal 2 Project, proposed by Vancouver Fraser Port Authority
4. [New Federal Requirements for Certain Products and Volatile Organic Compounds](#)
5. [Canadian Climate Institute \(2023\) Heat Pumps Pay Off: Unlocking Lower-Cost Heating and Cooling in Canada](#)
6. [City of Burnaby - Zero Carbon Step Code \(Council Report\)](#)
7. [Township of Langley – Zero Carbon Step Code \(website\)](#)
8. [City of New Westminster – Zero Carbon Step Code \(Council Report\)](#)
9. [City of Richmond – Zero Carbon Step Code \(Committee Report\)](#)
10. [District of West Vancouver – Zero Carbon Step Code \(website\)](#)
11. [City of North Vancouver – Building Permit Requirements \(website\)](#)
12. [District of North Vancouver – Zero Carbon Step Code \(website\)](#)

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Dr. Michael Schwandt, Medical Health Officer
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January 2, 2024

Lisa Dominato
Chair, Metro Vancouver Climate Action Committee

George V Harvie
Chair, Metro Vancouver Board of Directors

Delivered electronically: clrdominato@vancouver.ca; mayorharvie@delta.ca

Re: Support for transitioning toward zero emissions from existing large buildings in Metro Vancouver

Dear Chair Dominato and Chair Harvie:

I am writing in my role as a Medical Health Officer in support of additional engagement and regulation development to reduce greenhouse gas (GHG) emissions from existing large buildings in Metro Vancouver. Efforts to move toward zero-emission technology in existing buildings will not only mitigate greenhouse gas emissions, but can also have multiple benefits for the health of our region's population.

I was pleased to provide public health input into Metro Vancouver's first phase of engagement on this topic in 2022, and have since received with interest recent updates on this work through active participation in the Lower Fraser Valley Air Quality Coordinating Committee. I understand that in early 2024 Metro Vancouver will make decisions with respect to continuing this work through a new phase of stakeholder engagement and regulation development. In this letter I am sharing information on the anticipated public health benefits of proceeding with this important work, as well as health-related areas for consideration as Metro Vancouver moves forward. I hope that this is useful for your deliberations.

Transitioning buildings to zero-emissions technology can bring multiple health co-benefits

Improvements to local air quality will have significant benefits for the health of the population:

Transitioning toward zero-emissions systems for space heating and hot water can lead to improvements to local air quality by reducing nitrogen oxide emissions from fuel burning. There is strong evidence that nitrogen oxides (including nitrogen dioxide, NO₂) cause negative health effects, such as respiratory impacts. NO₂ is understood to be a 'non-threshold' contaminant, meaning that exposure even at low concentrations, which is common in our region, can lead to health impacts. Reductions in nitrogen oxide emissions from buildings across the region has the potential to have significant benefits for the health of the population. Health Canada has estimated that acute exposure to NO₂ air pollution contributes to 1,300 deaths per year in Canada.

Heat pumps can protect health by maintaining safe indoor temperatures during extreme heat events:

The accelerated installation of electric heat pumps, which can provide both heating and cooling in existing residential buildings that previously did not have air conditioning, could lead to substantial improvements in occupant safety during extreme heat events. Cooling of indoor spaces with heat pumps can maintain safe indoor temperatures that protect occupants from health impacts of high heat, such as heat exhaustion, heat stroke, and mortality.

Heat pumps can protect clean indoor air during wildfire smoke events:

Heat pumps can reduce community members' exposure to particulate matter from wildfire smoke by allowing for windows to be kept closed during hot days with wildfire smoke, leading to less smoke getting indoors and more effective air filtration with portable air filters. Depending on the setup of the system, heat pumps can also directly filter particulate matter in indoor air as they run. Air filtration is very important for reducing community health impacts of wildfire smoke as the smoke contains very small particles that travel deep into the lungs, causing irritation and inflammation, leading to respiratory and cardiovascular health impacts.

Vancouver Coastal Health has been working with multiple partners to identify and evaluate technical options for providing safer indoor temperatures and safer indoor air quality in existing residential buildings during extreme weather events. Public health benefits are anticipated to flow from regulations and programs that accelerate heat pump installation in large buildings.

Greenhouse gas emission reductions can reduce significant future health risks:

The extent of the impacts of climate change on health is expected to grow in the coming years as our climate warms, which is projected to create unmanageable impacts on communities and health systems if GHG emissions are not reduced. Across the province of BC, extreme heat, wildfires, drought, storms, flooding, and landslides have already contributed to illness, deaths, harmful interruptions in access to essential goods, and damage to critical infrastructure. British Columbia's 2021 heat dome was the deadliest disaster in provincial history with 619 lives lost due to heat exposure. These events and others will only become more common and more severe as our climate warms. Immediate greenhouse gas emission reductions are necessary to reduce the amount of warming and resulting extreme weather events, minimizing further negative health impacts.

Resources and supports will need to be in place to ensure an equitable transition toward zero-emission buildings

The Metro Vancouver Large Building Retrofit Accelerator is a positive initiative to create a regional resource hub that provides technical support and resources to building owners and managers to implement low and zero-emission retrofits. This will be a valuable resource for the region as we move toward zero-emissions from existing buildings.

Measures can be taken to ensure that the health benefits of building energy transitions apply to low-income, social, and affordable market housing. To support equitable access, the following pathways can be considered as Metro Vancouver moves forward with engagement and regulation development:

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- Explore and implement requirements for different types of existing homes to use highly efficient electric space and water heating, and to use heat pumps for space cooling.
- Support existing and future heat pump retrofit programs to include installation and operation for those living in social, low-income, and affordable market housing, and work across orders of government to protect housing security and affordability for tenants (with attention to potential for evictions and rent increases).
- Advocate for improved accessibility to federal and provincial grant and loan programs while ensuring equity is a key pillar of these programs (e.g. facilitate easy access to funds for low-income, social and affordable market housing).
- Reduce or eliminate fuel combustion options (e.g. renewable natural gas) as low or zero carbon compliance pathways, to prevent emissions of health-harming air contaminants.
- Explore options to accelerate the installation of on-site renewable energy systems with energy storage to provide community resilience during power outages and reduce the potential negative health consequences of power outages (e.g. heat-related illness, inability to use electricity dependent medical equipment, carbon monoxide poisoning from the use of alternative sources of fuel for heating or cooking).
- Work with BC Hydro on options to ensure the resilience of BC's overall power system as our climate changes, such as during extreme weather events or years with significant drought, and to reduce the need to import fossil-fuel based electricity generation.
- Advocate for strengthened support and funding for Indigenous housing providers and communities to retrofit homes, within a broader effort to increase housing security and quality.

As identified in Metro Vancouver's *Climate 2050 Buildings Roadmap* and *Climate 2050 Strategic Framework*, bold and prompt actions must be taken in order to significantly reduce greenhouse gas (GHG) emissions from buildings and achieve carbon neutrality in our region by 2050. Thank you for your efforts in support of the health and wellbeing of our communities, and for the opportunity to provide continued public health support for this important work.

Sincerely,



Dr. Michael Schwandt, MD, MPH, FRCPC
Medical Health Officer

Cc:

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