

**METRO VANCOUVER REGIONAL DISTRICT
CLIMATE ACTION COMMITTEE**

REGULAR MEETING

Friday, March 13, 2020

1:00 p.m.

28th Floor Committee Room, 4730 Kingsway, Burnaby, British Columbia

A G E N D A¹

1. ADOPTION OF THE AGENDA

1.1 March 13, 2020 Regular Meeting Agenda

That the Climate Action Committee adopt the agenda for its regular meeting scheduled for March 13, 2020 as circulated.

2. ADOPTION OF THE MINUTES

2.1 February 14, 2020 Regular Meeting Minutes

That the Climate Action Committee adopt the minutes of its regular meeting held February 14, 2020 as circulated.

3. DELEGATIONS

4. INVITED PRESENTATIONS

4.1 Steve Litke, Senior Program Manager, Fraser Basin Council

Subject: Lower Mainland Flood Management Strategy

4.2 Dr. Michael Brauer, Professor, School of Population and Public Health, UBC

Subject: Health Impacts of Residential Wood Smoke

5. REPORTS FROM COMMITTEE OR STAFF

5.1 MVRD Residential Indoor Wood Burning Emission Regulation Bylaw No. 1303, 2020

Designated Speakers:

Roger Quan, Director, Air Quality and Climate Change

Julie Saxton, Acting Division Manager, Bylaw and Regulation Development

Parks and Environment Department

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

That the MVRD Board:

- a) give first, second and third reading to Metro Vancouver Regional District Residential Indoor Wood Burning Emission Regulation Bylaw No. 1303, 2020; and
- b) pass and finally adopt Metro Vancouver Regional District Residential Indoor Wood Burning Emission Regulation Bylaw No. 1303, 2020.

5.2 Addressing Greenhouse Gas Emissions from New Buildings in the BC Building Code

Designated Speaker:

Erik Blair, Air Quality Planner

Parks and Environment Department

That the MVRD Board write a letter to the provincial Minister of Municipal Affairs and Housing and other appropriate provincial government ministries requesting that the Province include:

- a) opt-in greenhouse gas intensity performance requirements for new construction in the British Columbia Building Code;
- b) an option to require zero emissions space heating and hot water; and
- c) complementary requirements in the proposed provincial “Retrofit Code” for existing buildings.

5.3 Manager’s Report

Designated Speaker:

Roger Quan, Director, Air Quality and Climate Change

Parks and Environment Department

That the Climate Action Committee receive for information the report dated February 20, 2020, titled “Manager’s Report”.

6. INFORMATION ITEMS

- 6.1 Correspondence dated February 28, 2020 to Sav Dhaliwal, Chair and Directors Metro Vancouver Board re Alignment of Federal, Provincial, and Local Government Greenhouse Gas Targets from Minister George Heyman, Ministry of Environment and Climate Change Strategy.**
- 6.2 Report from Edward Nichol, Senior Policy & Planning Analyst, Regional Planning and Housing Services re: *Metro 2040* Climate and Natural Hazards Policy Review Scope of Work, dated January 15, 2020 to the Regional Planning Committee February 7, 2020 meeting.**
- 6.3 Report from Laurie Bates-Frymel, Senior Planner, Regional Planning and Housing Services re: *Metro 2040* Environment Policy Review – Update on Policy Option Development, dated January 20, 2020 to the Regional Planning Committee February 7, 2020 meeting.**

7. OTHER BUSINESS

8. BUSINESS ARISING FROM DELEGATIONS

9. RESOLUTION TO CLOSE MEETING

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

10. ADJOURNMENT/CONCLUSION

That the Climate Action Committee adjourn/conclude its regular meeting of March 13, 2020.

Membership:

Carr, Adriane (C) - Vancouver
Dhaliwal, Sav (VC) - Burnaby
Arnason, Petrina - Langley Township
Baird, Ken - Tsawwassen First Nation
Dupont, Laura - Port Coquitlam

Hocking, David - Bowen Island
Kruger, Dylan - Delta
McCutcheon, Jen - Electoral Area A
McIlroy, Jessica - North Vancouver City
McLaughlin, Ron - Lions Bay

Patton, Allison - Surrey
Steves, Harold - Richmond
van den Broek, Val - Langley City
Yousef, Ahmed - Maple Ridge

**METRO VANCOUVER REGIONAL DISTRICT
CLIMATE ACTION COMMITTEE**

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Climate Action Committee held at 1:00 p.m. on Friday, February 14, 2020 in the 28th Floor Committee Room, 4730 Kingsway, Burnaby, British Columbia.

MEMBERS PRESENT:

Chair, Councillor Adriane Carr, Vancouver
 Vice Chair, Councillor Sav Dhaliwal, Burnaby
 Councillor Petrina Arnason, Langley Township
 Chief Ken Baird, Tsawwassen
 Councillor Laura Dupont, Port Coquitlam
 Councillor David Hocking, Bowen Island
 Councillor Dylan Kruger, Delta
 Director Jen McCutcheon, Electoral Area A
 Mayor Ron McLaughlin, Lions Bay
 Councillor Allison Patton, Surrey
 Councillor Harold Steves, Richmond
 Mayor Val van den Broek, Langley City
 Councillor Ahmed Yousef, Maple Ridge

MEMBERS ABSENT:

Councillor Jessica McIlroy, North Vancouver City

STAFF PRESENT:

Roger Quan, Director, Air Quality and Climate Change, Parks and Environment
 Genevieve Lanz, Legislative Services Coordinator, Board and Information Services

1. ADOPTION OF THE AGENDA

1.1 February 14, 2020 Regular Meeting Agenda

It was MOVED and SECONDED

That the Climate Action Committee adopt the agenda for its regular meeting scheduled for February 14, 2020 as circulated.

CARRIED

2. ADOPTION OF THE MINUTES

2.1 January 17, 2020 Regular Meeting Minutes

It was MOVED and SECONDED

That the Climate Action Committee adopt the minutes of its regular meeting held January 17, 2020 as circulated.

CARRIED

3. DELEGATIONS

No items presented.

4. INVITED PRESENTATIONS

No items presented.

5. REPORTS FROM COMMITTEE OR STAFF

5.1 2020 Liquid Waste Sustainability Innovation Fund Application

Report dated January 16, 2020 from Paul Kadota, Program Manager, Policy, Planning and Analysis, Liquid Waste Services, seeking GVS&DD Board approval of the Handheld Wastewater Microbial DNA Monitor project and the allocation of \$330,000 over three years from the Liquid Waste Sustainability Innovation Fund.

Members were provided with a presentation on the 2020 Liquid Waste Sustainability Innovation Fund application for funding of a handheld wastewater microbial DNA monitor.

Presentation material titled “Liquid Waste Sustainability Innovation Fund – 2020 Applications” is retained with the February 14, 2020 Climate Action Committee agenda.

It was MOVED and SECONDED

That the GVS&DD Board approve the allocation from the Liquid Waste Sustainability Innovation Fund of \$330,000 over three years starting in 2020 for the Handheld Wastewater Microbial DNA Monitor project.

CARRIED

5.2 2020 Regional District Sustainability Innovation Fund Applications

Report dated January 30, 2020 from Roger Quan, Director, Air Quality and Climate Change, Parks and Environment, seeking MVRD Board approval of allocating Regional District Sustainability Innovation Funding for eight projects totaling \$1,108,000 over three years, which include three addressing affordable housing and climate change, two enhancing ecological health in regional parks and three related to air quality improvement.

Members were provided with a presentation on the 2020 Regional District Sustainability Innovation Fund applications, highlighting projects on renewable energy building infrastructure and net-zero housing developments, targeted invasive plant management and eDNA sampling in regional parks, and air quality monitoring and agricultural waste management.

Presentation material titled "Regional District Sustainability Innovation Fund – 2020 Applications" is retained with the February 14, 2020 Climate Action Committee agenda.

It was MOVED and SECONDED

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

- a) Building Resilience: Exploring the Potential of Renewable Energy Building Infrastructure: \$200,000 over two years starting in 2020;
- b) Net-Zero Feasibility Study for Welcher Affordable Housing Development: \$160,000 over two years starting in 2020;
- c) Step Code Implementation Impacts for Building Envelope Rehabilitation of Existing Buildings: \$90,000 over two years starting in 2020;
- d) Targeted Invasive Plant Grazing in Metro Vancouver: \$150,000 over three years starting in 2020;
- e) Using eDNA Sampling Technology in Regional Parks: \$68,000 over two years starting in 2020;
- f) Preventing Smoke Emissions from Agricultural Waste Management: \$140,000 over two years starting in 2020;
- g) Clean Air for Students and Schools (CLASS): \$200,000 over two years starting in 2020;
- h) Mobile Monitoring of Fugitive and Other Industrial Air Emissions with "Flying Labs": \$100,000 in 2020.

CARRIED

Members further discussed replanting following the removal of invasive species.

Request of Staff

Staff was requested to report back to a future meeting of the Climate Action Committee with information on the advisability and feasibility of developing a policy or best management practice related to the replanting of pollinator-friendly and native plants following the removal of invasive species.

5.3 2020 Water Sustainability Innovation Fund Applications

Report dated January 30, 2020 from Inder Singh, Director, Policy, Planning and Analysis, Water Services, seeking GVWD Board approval of allocating Water Sustainability Innovation Funding for three projects totalling \$950,000 over three years, which include advancing methods of monitoring water disinfection by-products, an earthquake early warning pilot project and enhancements to the water flow monitoring network.

Members were provided with a presentation on the 2020 Water Sustainability Innovation Fund applications, highlighting projects on disinfection by-products monitoring, earthquake early warning system, and water flow metering.

Presentation material titled “Water Sustainability Innovation Fund – 2020 Applications” is retained with the February 14, 2020 Climate Action Committee agenda.

It was MOVED and SECONDED

That the GVWD Board approve the allocation from the Water Sustainability Innovation Fund for the following projects:

- a) UV Transmittance Analyzers for Continuous Monitoring of Disinfection By-Products: \$500,000 over three years starting in 2020;
- b) Earthquake Early Warning and Strategic Response System Pilot: \$270,000 over two years starting in 2020;
- c) Enhancing the Data Processing of the Water Flow Metering Network: \$180,000 over two years starting in 2020.

CARRIED

5.4 Invasive Species Education and Outreach Materials

Report dated January 17, 2020 from Laurie Bates-Frymel, Senior Planner, Regional Planning and Housing Services, informing members of a new invasive species online course and public brochure, and seeking direction to forward these outreach materials to member jurisdictions for information.

Members were provided with a demonstration of the new invasive species online course.

It was MOVED and SECONDED

That the MVRD Board direct staff to forward the report dated January 17, 2020, titled “Invasive Species Education and Outreach Materials” to member jurisdictions for information.

CARRIED

5.5 Board Appointments and Rescindments of Enforcement Officers

Report dated January 3, 2020 from Kathy Preston, Lead Senior Engineer, Environmental Regulation and Enforcement, Parks and Environment, seeking MVRD Board appointment of Metro Vancouver employees as Board-designated officers under the *Greater Vancouver Regional District Air Quality Management Bylaw*, the *Environmental Management Act* and the *Offence Act*.

It was MOVED and SECONDED

That the MVRD Board:

- a) pursuant to the *Greater Vancouver Regional District Air Quality Management Bylaw* and the *Environmental Management Act*:
 - i. appoint Metro Vancouver employee Nicole Gatto as an officer; and

- ii. rescind the appointments of former Metro Vancouver employees Larry Avanthay, Kristen Beattie and Johanna Legge as officers; and
- b) pursuant to section 28 of the *Offence Act*:
 - i. appoint Metro Vancouver employee Nicole Gatto for the purpose of serving summons under section 28 of the *Offence Act* for alleged violations under the *Greater Vancouver Regional District Air Quality Management Bylaw*; and
 - ii. rescind the appointments for the purpose of serving summons of former Metro Vancouver employees Larry Avanthay, Kristen Beattie and Johanna Legge.

CARRIED

5.6 Manager's Report

Report dated January 27, 2020 from Roger Quan, Director, Air Quality and Climate Change, Parks and Environment, providing members with an update on the Climate Action Committee 2020 Work Plan, *Clean Air Plan* and *Climate 2050* engagement and open-air burning consultation.

It was MOVED and SECONDED

That the Climate Action Committee receive for information the report dated January 27, 2020, titled "Manager's Report".

CARRIED

6. INFORMATION ITEMS

- 6.1 Final Report by Director Adriane Carr, Chair, Climate Action Committee on Second World Congress on Climate Change, September 26-28, 2019, Berlin, Germany.**
- 6.2 Correspondence dated December 18, 2019 to Sav Dhaliwal, Chair, Metro Vancouver Board of Directors re BC Tweed Air Discharge Approval Application from George V. Harvie, Mayor, City of Delta.**

7. OTHER BUSINESS

No items presented.

8. BUSINESS ARISING FROM DELEGATIONS

No items presented.

9. RESOLUTION TO CLOSE MEETING

No items presented.

10. ADJOURNMENT/CONCLUSION

It was MOVED and SECONDED

That the Climate Action Committee conclude its regular meeting of February 14, 2020.

CARRIED

(Time: 3:17 p.m.)

Genevieve Lanz,
Legislative Services Coordinator

Adriane Carr, Chair



Lower Mainland Flood Management Strategy

Briefing for Metro Vancouver's Climate Action Committee

March 13, 2020

If a major Fraser River or coastal flood were to occur in British Columbia's Lower Mainland between now and 2100, it would trigger losses estimated at \$20-30 billion – and become the most costly natural disaster in Canadian history.

BC's Lower Mainland is under threat of a major flood

BC's Lower Mainland – Canada's third largest metropolitan area – faces a significant and growing risk of a large-magnitude flood. Climate change projections show that an increase in frequency and severity of both coastal and Fraser River flooding is expected by year 2100.

Dozens of communities and extensive critical infrastructure are located in the Lower Mainland floodplain areas. Vulnerabilities include risks to life, flood damage to buildings and critical infrastructure, business and service disruptions and estimated displacement of 250,000+ residents.

Direct economic losses and some indirect losses from a major Fraser River or coastal flood are estimated in the range of \$20-30 billion.

There have been two major Fraser River floods of which we have written records (in 1894 and 1948), followed by serious high water events in 1972, 2007 and 2012. The 1894 Fraser River flood of record (approximately 1-in-500 year event) is expected to have a return period of just 50 years by year 2100.

The Lower Mainland region needs to prepare – and soon. A majority of flood protection dikes in the region were built many decades ago and are not adequate. A recent evaluation shows that most would fail during a recurrence of the 1894 Fraser River flood of record.

A Plan is in Progress: The Lower Mainland Flood Management Strategy

A unique collaborative process is underway to develop a region-wide flood strategy for the Lower Mainland. The Government of Canada, Province of BC, local governments, First Nations and private and public sector organizations – over 50 agencies and organizations in all – are working in collaboration, in a process facilitated by the Fraser Basin Council.

The aim is to develop a comprehensive flood management strategy for the region and to avoid disaster.

Effective flood mitigation is a high priority for the Lower Mainland Local Government Association and for its member municipalities, which have flood management responsibilities.

A Lower Mainland Flood Management Strategy is a critical piece of the puzzle. While municipalities may develop flood plans for their communities (to extent possible within resource constraints), a significant investment is needed to implement flood plans and to ensure that flood risks are addressed comprehensively across the region.

The Fraser Basin Council is coordinating dialogue, input and advice from decision-makers, partners and stakeholders on the different components of the Strategy. This includes opportunities for First Nations participation to advise on First Nations values, issues and interests to inform the Strategy.

The Strategy is being developed in three phases:

- **Phase 1 (Completed 2016):** Focused on build a better understanding of flood hazards, vulnerabilities and the state of flood protection in the Lower Mainland: See summary report.
- **Phase 2 (Underway):** Focused on developing a regional flood strategy and action plan, including a secure, sustainable funding model.
- **Phase 3 (2021):** Implementation of the Strategy with funding commitments in place.

A draft Strategy is expected in spring 2020 and a final Strategy late in 2020.

The Strategy will consist of:

- Regional priorities to reduce flood risk
- Recommended management actions for diverse conditions across the region, and
- Recommended governance and cost-sharing arrangements.

For more information, contact:
Steve Litke, Senior Program Manager,
Fraser Basin Council
slitke@fraserbasin.bc.ca

To: Climate Action Committee

From: Roger Quan, Director, Air Quality and Climate Change
Parks and Environment Department

Date: February 26, 2020 Meeting Date: March 13, 2020

Subject: **MVRD Residential Indoor Wood Burning Emission Regulation Bylaw No. 1303, 2020**

RECOMMENDATION

That the MVRD Board:

- a) give first, second and third reading to *Metro Vancouver Regional District Residential Indoor Wood Burning Emission Regulation Bylaw No. 1303, 2020*; and
 - b) pass and finally adopt *Metro Vancouver Regional District Residential Indoor Wood Burning Emission Regulation Bylaw No. 1303, 2020*.
-

EXECUTIVE SUMMARY

In July 2018, the Metro Vancouver Regional District (MVRD) Board received a report on consultation on the development of a bylaw to regulate emissions from residential indoor wood burning, and directed staff to proceed with drafting a bylaw for Board consideration. Wood smoke is a major source of fine particulate matter (PM_{2.5}) emissions, including black carbon associated with climate change. The proposed bylaw is intended to reduce the health and environmental impacts of emissions from residential indoor wood burning while responding to needs identified during a comprehensive consultation process. The proposed bylaw introduces phased measures that promote cleaner wood-burning practices and technologies, with more stringent requirements in more densely populated areas. At the request of the Village of Lions Bay, the requirements will come into effect at a later date in that community, while an enhanced program to promote voluntary compliance with the bylaw is carried out.

PURPOSE

To seek Board adoption of *Metro Vancouver Regional District Residential Indoor Wood Burning Emission Regulation Bylaw No. 1303, 2020* (Bylaw 1303) (Attachment 1), concerning the phased introduction of regulatory requirements to reduce emissions from residential indoor wood burning.

BACKGROUND

On July 27, 2018, the MVRD Board received a report on the feedback from the second phase of engagement conducted between November 2017 and March 2018 on regulatory proposals to manage residential wood smoke emissions, summarized in Attachment 2, and passed the motion:

That the MVRD Board:

- a) *receive for information the report titled “Results of Consultation on Regulating Indoor Residential Wood Burning Emissions”, dated June 8, 2018; and*
- b) *direct staff to draft a bylaw to regulate emissions of wood smoke from indoor residential wood burning.*

In November 2019, the Climate Action Committee considered a staff report with an update on the development of the proposed bylaw, and provided direction about a request from the Village of Lions Bay for an exemption from the proposed regulatory measures. Between November 2019 and January 2020, there has been additional discussion with Lions Bay staff and elected officials, and that new information has been reflected in the current report.

IMPACTS OF EMISSIONS FROM RESIDENTIAL INDOOR WOOD BURNING

Wood smoke from residential indoor wood burning is the most significant source of PM_{2.5} emissions in the region, contributing more than a quarter of the total annual PM_{2.5} emissions, and is also the second top source of toxic air pollutants. Exposure to wood smoke is of particular concern in densely populated urban areas, due to the proximity of a single smoking chimney to multiple neighbours.

The total annual health-related economic benefits of reducing the impacts of PM_{2.5} from residential indoor wood burning, including mortality, were estimated to be between \$282 million and \$869 million. Wood smoke also contains black carbon, which is a short-lived climate forcer (a substance that has a shorter atmospheric lifetime than carbon dioxide but has a high global warming potential).

PROPOSED BYLAW

Attachment 3 summarizes the proposed bylaw requirements and applicability within urban and non-urban areas. The proposed bylaw requires the use of best burning practices and, in more densely populated areas, of cleaner wood-burning appliances and other low-emission technologies. The proposed bylaw does not require fireplaces or wood stoves to be removed, and any wood-burning appliance may be used during emergencies. Proposed requirements are most stringent for locations inside the Urban Containment Boundary (UCB), due to proximity to neighbours and the greater potential for harmful exposure to smoke in more densely populated areas.

Requirements are phased in as follows, and will be supported by outreach and awareness programs:

- Phase 1, effective May 2021 – restrictions on indoor wood burning during the warm season, unless it is the sole source of heat;
- Phase 2, beginning September 2022 – declaration of use of best burning practices in all areas, registration of clean wood burning appliances within urban areas;
- Phase 3, effective September 2025 – restrictions on use of non-registered devices within urban areas (except for low income households)

Changes to Proposed Requirements in Response to Feedback during Consultation

The proposed requirements address the issues identified during engagement and consultation while mitigating health and environmental impacts, by allowing the use of any wood-burning appliance:

- during emergencies;
- by households with low income;
- by households where a wood-burning appliance provides the only source of heat;
- between May 15 and September 15 for residents in remote, off-grid locations; and
- for special occasions, when the use of commercially available manufactured firelogs, a low-emission fuel, is demonstrated.

The proposed interval of three years between registration renewals responds to a stated preference for less frequent registration.

Village of Lions Bay

At its November 2019 meeting, the Climate Action Committee considered a staff report (Reference 1) about a request from the Village of Lions Bay for an exemption from the proposed regulatory measures, as they pertain to areas designated as urban within the region. Following discussion, the Committee directed staff to bring forward a proposed bylaw for Board consideration, to manage emissions from residential indoor wood burning that includes the same requirements for all areas within Metro Vancouver designated as urban.

Between November and January, Village of Lions Bay staff and Council identified new proposals (Reference 2) that were discussed with Metro Vancouver staff, and considered by Lions Bay Council on January 14, 2020. Lions Bay is now seeking an extension of seven years from the 2025 applicability date in the proposed bylaw. This is listed as option 3 in their Council report, “seek deferred applicability of the proposed bylaw for a period of 7 years”.

The Village of Lions Bay has expressed a commitment to collaborating with Metro Vancouver on a focused outreach and education program to reduce wood smoke emissions in Lions Bay, in response to broad concerns amongst their residents about the implications of restrictions on wood-burning appliances in a community without access to natural gas.

Staff recommend deferring Phase 3 requirements that restrict the use of un-registered wood burning appliances until 2032 in Lions Bay. A concentrated educational approach would be carried out in this community, focused on achieving full compliance with the bylaw requirements for urban areas by 2032. The program would be an expanded version of Metro Vancouver’s existing wood stove exchange program which promotes voluntary change out of older residential wood burning devices for cleaner alternatives, as well as awareness of best burning practices.

Metro Vancouver staff will work with Lions Bay staff to obtain information about the current state of readiness for the proposed bylaw, by assessing the number of lower emitting wood-burning appliances already in use in Lions Bay. This would support residents’ wood-burning appliance registrations proposed to start in 2022, at the same time as in other urban areas.

Costs of Cleaner Burning Appliances

The costs reported by participants in Metro Vancouver’s wood stove exchange program for replacing older, higher emitting wood burning fireplaces or stoves with lower emitting alternatives between 2017 and 2019, including installation, ranged from:

- \$1500 to \$6000 for a new, certified wood stove;
- \$3000 to \$4900 for a fireplace insert to burn wood more cleanly; and
- \$1300 to \$7000 for a fireplace insert to use natural gas instead of wood.

Metro Vancouver will continue to seek any provincial funding offered for wood stove exchange programs, and propose strategies to enhance incentives for communities and vulnerable populations that rely on wood-burning appliances for comfort heating.

Administration and Enforcement

No fees would be required for appliance registration or declaration of the use of best burning practices. Fines for contraventions of the proposed regulation would be up to \$10,000 per day.

Implications for Other Bylaws

If the MVRD Board adopts proposed Bylaw 1303, supporting amendments to *GVRD Air Quality Management Bylaw No. 1082, 2008* will be required, including revisions to definitions and references to Bylaw 1303. Staff will report back with those amendments. Future updates of the *Regional Growth Strategy* would mention the air quality implications for communities within the UCB.

ALTERNATIVES

1. That the MVRD Board:
 - a) give first, second and third reading to *Metro Vancouver Regional District Residential Indoor Wood Burning Emission Regulation Bylaw No. 1303, 2020*; and
 - b) pass and finally adopt *Metro Vancouver Regional District Residential Indoor Wood Burning Emission Regulation Bylaw No. 1303, 2020*.
2. That the MVRD Board receive for information the report dated February 26, 2020, titled “MVRD Residential Indoor Wood Burning Emission Regulation Bylaw No. 1303, 2020” and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

Under Alternative 1, resources for the design of a registration database have been included in the 2020 budget, and the following budget would be requested upon adoption of a proposed bylaw: about \$100,000 for development of a registration database in 2021 and \$80,000 per year to administer registration requirements starting in 2022. Staff resources to promote compliance with the bylaw after 2025 would be proposed as part of long term financial plans. The costs associated with support for enhanced outreach have been included in the 2020 budget and in long term financial plans. A portion of this enhanced outreach would be focused on the Village of Lions Bay, and Metro Vancouver would seek in-kind support for venues and promotion from the municipality.

CONCLUSION

The proposed *MVRD Residential Indoor Wood Burning Emission Regulation Bylaw No. 1303, 2020* (Bylaw 1303) would regulate emissions from indoor residential wood burning. The MVRD Board directed staff to draft a bylaw in July 2018 after comprehensive public engagement to receive feedback on a potential bylaw. Bylaw 1303 recognizes the need for a phased implementation approach, with more stringent requirements in urban areas, where there is a greater risk of exposure to smoke from homes in proximity to each other. The phased requirements would start with restrictions on the use of wood-burning appliances in the warm season and culminate in requiring the use of cleaner wood-burning appliances and other low-emission technologies in urban areas, except during emergencies and for low income households or where wood-burning appliances are the sole source of heat. At their request, requirements to use lower emitting appliances are proposed to take effect seven years later in the Village of Lions Bay, following enhanced educational outreach.

Staff recommend Alternative 1, that the MVRD Board adopt proposed Bylaw 1303.

Attachments

1. *Metro Vancouver Regional District Residential Indoor Wood Burning Emission Regulation Bylaw No. 1303, 2020*
2. A Phased Approach to Regulating Emissions from Indoor Residential Wood Burning Consultation Summary Report
3. Key Proposed Requirements and Phased Implementation

References

1. [Climate Action Committee Meeting – November 15, 2019, item 5.1, Proposed Bylaw for Residential Indoor Wood Burning](#)
2. [Village of Lions Bay Staff Report to Council, titled “MVRD’s Proposed Bylaw re. Residential Indoor Wood Burning”, dated January 9, 2020 \(pages 57-70\)](#)

34075842

METRO VANCOUVER REGIONAL DISTRICT
BYLAW NO. 1303, 2020
A Bylaw to Regulate the Discharge of Air Contaminants from Residential Indoor
Wood Burning Appliances

WHEREAS:

- A. The *Environmental Management Act* authorizes the Metro Vancouver Regional District to provide the service of air pollution control and air quality management and, for that purpose, the Board of Directors of the Metro Vancouver Regional District may, by bylaw, prohibit, regulate and otherwise control and prevent the discharge of air contaminants;
- B. The *Environmental Management Act* authorizes the Board of Directors of the Metro Vancouver Regional District to establish different prohibitions, regulations, rates or levels of fees, conditions, requirements and exemptions for different persons, operations, activities, industries, trades, businesses, air contaminants or works, and for different classes of persons, operations, activities, industries, trade, businesses, air contaminants or works;
- C. The Metro Vancouver Regional District has enacted the “Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008”, which contemplates that the Board of Directors of the Metro Vancouver Regional District may establish emission regulations; and
- D. The Board of Directors of the Metro Vancouver Regional District has determined it is desirable to regulate the discharge of air contaminants from residential indoor wood burning appliances;

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

General

- 1. The official citation of this bylaw is “Metro Vancouver Regional District Residential Indoor Wood Burning Emission Regulation Bylaw No. 1303, 2020” (this “Emission Regulation”).
- 2. This Emission Regulation is an emission regulation for the purposes of section 26 of the “Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008” (the “Bylaw”) and is deemed to be an integral part of the Bylaw.
- 3. Terms defined in the Bylaw, or incorporated by reference into the Bylaw, have the same meaning in this Emission Regulation.
- 4. Any person who complies with the Bylaw and this Emission Regulation is exempt from the application of section 6 of the Bylaw and from section 6 (3) of the *Environmental Management Act* in relation to the discharge of air contaminants from a residential wood burning appliance, provided that such person also complies with any further restrictions or conditions imposed by the Bylaw, the *Environmental Management Act*, or a regulation, permit, order or approved waste management plan under the *Environmental Management Act*.
- 5. References in this Emission Regulation to an enactment include the enactment as it may be amended or replaced from time to time.

Definitions

6. In this Emission Regulation:

“accessory building or structure” means a subordinate detached building or structure located on a lot where the use of such building or structure is incidental and ancillary to the principal permitted use of the land, and other buildings or structures located on the same lot;

“best burning practices” means the burning practices set out in Schedule B;

“Canadian standard” means the emissions standard described as "CSA B415.1-10 Performance testing of solid-fuel-burning heating appliances", published by the Canadian Standards Association, as amended from time to time;

“certified”, in relation to a residential indoor wood burning appliance, means that the appliance bears a certification mark certifying conformity with the Canadian standard or the US standard;

“clean”, in relation to wood and wood products, means material that is unpainted, unvarnished, unstained, untreated, and free of contaminants including salts, glue or coatings;

“declaration of compliance with best burning practices” means a declaration in a prescribed form provided by a person to the district director confirming that a residence’s residential indoor wood burning appliance will be operated only in compliance with the best burning practices set out in Schedule B of this Emission Regulation;

“emergency” means a present event or circumstance

- (a) which may be caused by accident, fire, explosion, technical failure, labour strike or the forces of nature, and which has caused an outage of electricity, natural gas, propane, heating oil or other energy sources for heating in the residence for a period of more than 3 hours, or
- (b) as determined by the district director;

“fireplace insert” means appliances that are designed to be installed within the firebox of an existing masonry or metal fireplace;

“low-income household” means a residence that has a residential wood burning appliance and whose residents qualify for the income criteria set forth in sub-paragraphs (a) or (b) of the definition for a “low-income household” as that term is defined in the *Demand-Side Measures Regulation*, B.C. Reg. 326/2008 made pursuant to the *Utilities Commissions Act*;

“manufactured firelog” means a commercially available manufactured log comprising wax and material of plant origin and which is constructed to be used as an alternative solid fuel to wood or wood products;

“masonry heater” means a free-standing appliance that is a site-built or site-assembled appliance consisting of a firebox, a large masonry mass, and a maze of heat exchange channels and

- (a) is constructed primarily of masonry,

- (b) has a mass of at least 800 kg, excluding the chimney and foundation, and
- (c) is designed
 - (i) to absorb the heat from a rapidly burned charge of solid fuel by routing hot exhaust gases through internal heat exchange channels that include at least one 180° change in flow direction, and
 - (ii) to heat spaces by radiating the absorbed heat;

"off-grid residence" means a residence that is not served by any public utility that could heat the home;

"operator" means a person who is responsible for, in possession of, or has control over the operation of a residential indoor wood burning appliance;

"owner" means a person who is the legal or beneficial owner of a residence in which a residential indoor wood burning appliance is installed;

"pellet stove" means a stove designed and used exclusively for the combustion of wood pellets that is used to heat the space in which it is located;

"person" includes an individual, firm, company, association, society, partnership, sole proprietorship, corporation, government body, land owner, owner, operator, resident and any director, officer, employee or agent of a person;

"prescribed" means prescribed by the district director;

"registered" means registered for use within Metro Vancouver Regional District in accordance with all of the requirements of Part 3 of this Emission Regulation;

"registration" means registration in accordance with all of the requirements of Part 3 of this Emission Regulation;

"registration information" means the information required for registration pursuant to Part 3 of this Emission Regulation, and in the form required;

"residence" means a private residential dwelling or unit;

"residential indoor wood burning appliance" means a fireplace or woodstove that burns or is capable of burning solid fuel to produce heat for heating indoor spaces or for aesthetic enjoyment for the occupants of a residence or an accessory building or structure, and from which combustion products are discharged to the air, and specifically includes a pellet stove, a masonry heater, a wood burning furnace and a fireplace insert;

"seasoned", in relation to wood or wood products, means containing not more than 20% moisture by weight;

“sole source of heat”, in relation to a residential indoor wood burning appliance, means the appliance is the only technology that has the primary purpose of heating the indoor space within a residence;

"solid fuel" means

- (a) clean, seasoned wood or wood products,
- (b) manufactured firelogs, and
- (c) wood pellets;

“unregistered”, in relation to an appliance, means not registered pursuant to Part 3 of this Emission Regulation;

"Urban Containment Boundary" means that boundary established and described in “Greater Vancouver Regional District Regional Growth Strategy Bylaw Number 1136, 2010”, as amended from time to time;

"US standard" means the emissions standard contained in the "Code of Federal Regulations, Title 40, Part 60, Subpart AAA – Standards of Performance for New Residential Wood Heaters", published by the United States Environmental Protection Agency:

“wood” means natural wood from a tree or shrub, including conventional firewood such as cordwood;

"wood burning furnace" means an appliance, designed to be located outside ordinary living areas, in which air is heated and from which the heated air is distributed through ducts for heating spaces other than the space in which the furnace is located;

"wood pellets" means processed fuel consisting of uniform, discrete pellets of compressed, clean wood material manufactured for use in a pellet stove;

“wood products” means wood waste including but not limited to woodchips, shavings, sawdust, sander dust and wood left over from cutting lumber to length.

Part 1 - Application and Scope of this Emission Regulation

7. Subject to section 8, no person may discharge, or cause, permit or allow the discharge of any air contaminant into the environment from a residential indoor wood burning appliance within the Metro Vancouver Regional District except in accordance with this Emission Regulation.
8. Nothing in this Emission Regulation prohibits the discharge of an air contaminant from a residential indoor wood burning appliance during an emergency.

Part 2 – Best Burning Practices Requirement

9. Effective immediately, every person who discharges, or causes, permits or allows the discharge of an air contaminant into the environment from a residential indoor wood burning appliance must comply with best burning practices.

Part 3 – Declaration, Registration and Other Requirements

- 10.** Effective September 15, 2022, every person who discharges, or causes, permits or allows the discharge of any air contaminant into the environment from a residential indoor wood burning appliance must provide to the district director a declaration of compliance with best burning practices.
- 11.** Effective September 15, 2022, every person who discharges, or causes, permits or allows the discharge of any air contaminant into the environment from a residential indoor wood burning appliance that is eligible for registration under Part 4 and is being operated within a residence that is located within the Urban Containment Boundary, must register such appliance for use by providing the following registration information in the prescribed form to the district director:
 - (a) owner and operator name(s) and contact information, and appliance address;
 - (b) appliance model; and
 - (c) information evidencing that the appliance meets the emissions standards set out in Schedule A or that the appliance is otherwise eligible for registration in accordance with Part 4.
- 12.** Effective September 15, 2025, every person who owns or operates a residential indoor wood burning appliance that is eligible for registration in accordance with Part 4 and is being operated within a residence that is located within the Urban Containment Boundary, must, at intervals of not more than three years following the date of the first registration of such appliance in accordance with section 11, or upon the replacement of such appliance, whichever occurs earlier, provide in the prescribed form to the district director:
 - (a) confirmation that the registration information is accurate and current; and
 - (b) a new declaration of compliance with best burning practices.
- 13.** Every owner or operator must, immediately upon the request of the district director or an officer, provide proof of identity, proof of purchase of manufactured firelog where applicable, and any other information the district director or an officer deems necessary to ensure compliance with this Emission Regulation.
- 14.** Every owner or operator who, on or after September 15, 2025 is the subject of an investigation into the discharge, or causing, permitting or allowing the discharge of an air contaminant from an unregistered residential indoor wood burning appliance being operated within a residence located within the Urban Containment Boundary, and who wishes to prove that the appliance is being operated from within a low-income household in accordance with section 19(a)(ii), must provide to the district director the following evidence that such appliance is being operated in a low-income household:
 - (a) an owner or operator signed statement in the prescribed form and satisfactory to the district director, declaring the total number of people residing in the household and the basis upon which the residence qualifies as a low-income household; and
 - (b) for so long as the residential wood burning appliance continues to be used in the household, a fresh declaration as described in section 14(a), to be provided at intervals of no more than every three years.

Part 4 – Eligibility for Registration

- 15.** Residential indoor wood burning appliances that are eligible for registration include:
- (a) appliances that meet the emissions standards prescribed in Schedule A;
 - (b) appliances that do not meet the emissions standards prescribed in Schedule A but the appliance is the sole source of heat; and
 - (c) appliances within a residence operated exclusively with manufactured firelogs and that produce no visible emissions.
- 16.** Every person registering a residential indoor wood burning appliance must provide to the district director in the prescribed form satisfactory evidence of the appliance's eligibility for registration. Such evidence includes but is not limited to:
- (a) for appliances that meet emissions standards in Schedule A, the name of the manufacturer and model of the appliance;
 - (b) for appliances that do not meet the emissions standards in Schedule A, but the appliance is the sole source of heat, a signed statement in the prescribed form stating that the household does not have any other technology that has the primary purpose of heating the indoor space within a residence including but not limited to baseboard heaters, a furnace, a natural gas or propane stove, or a heat pump; or
 - (c) for appliances that do not meet the emissions standards in Schedule A but the appliance is fueled exclusively with manufactured firelogs, a signed statement in the prescribed form stating that all operators use only manufactured firelogs in the appliance.

Part 5 – Seasonal and Unauthorized Discharge Prohibitions

- 17.** Effective May 15, 2021 and subject to section 18, during the period between May 15 and September 15 inclusive of every calendar year, no person may discharge or cause, permit or allow the discharge of any air contaminant into the environment from a residential indoor wood burning appliance.
- 18.** The prohibition in section 17 does not apply to the discharge of an air contaminant from a residential indoor wood burning appliance:
- (a) operated within an off-grid residence located outside of the Urban Containment Boundary; or
 - (b) from an appliance that is the sole source of heat.

19. Effective September 15, 2025 and subject to section 17, no person may discharge, or cause, permit or allow the discharge of any air contaminant into the environment from a residential wood burning appliance, unless:

(a) The appliance is being operated within a residence that is located within the Urban Containment Boundary and:

- (i) the appliance is eligible for registration under Part 4 and has been registered in compliance with Part 3; or
- (ii) the appliance is not eligible for registration under Part 4 and it is being operated within a low-income household;

or

(b) The appliance is being operated within a residence that is located outside of the Urban Containment Boundary and the owner or operator of the appliance has provided to the district director a declaration of compliance with best burning practices.

20. Notwithstanding section 19(a), section 19(a) does not apply to any person who discharges, or causes, permits or allows the discharge of an air contaminant into the environment from a residential wood burning appliance being operated within a residence located within the Village of Lions Bay, until September 15, 2032, upon which date section 19(a) will be effective in respect of all such discharges by such a person.

Part 6 - Offences

21. A person who contravenes sections 10, 11, 12, 27 and 28 of this Emission Regulation commits an offence punishable by a fine not exceeding \$5,000.

22. A person who contravenes sections 7, 9, 17 and 19 of this Emission Regulation commits an offence punishable by a fine not exceeding \$10,000.

23. Where there is an offence that continues for more than one day, separate fines each not exceeding the maximum fine for that offence may be imposed for each day or part thereof in respect of which the offence occurs or continues.

24. A person who provides false information in a registration application, other submission of information, or to an officer or the district director in response to a request for information related to provisions in this Emission Regulation commits an offence and is liable on conviction to a fine not exceeding \$10,000.

25. Nothing in this Emission Regulation limits the district director or the Metro Vancouver Regional District from utilizing any other remedy that would otherwise be available.

26. If a corporation commits an offence under this Emission Regulation, an employee, officer, director or agent of the corporation who authorized, permitted or acquiesced in the offence commits an offence whether or not the corporation is convicted.

Part 7 - Record Keeping

- 27.** Every owner or operator of a residential indoor wood burning appliance must, for a period of not less than two years, keep receipts, invoices, work orders, reports, photographs or other documents or materials evidencing to the satisfaction of the district director the owner or operator's compliance with Schedule B's required inspection and maintenance requirements.
- 28.** Every owner or operator of a residential indoor wood burning appliance that is operated exclusively with manufactured firelogs as fuel must, for as long as the fuel is available for use, keep receipts, invoices or other documents or materials evidencing to the satisfaction of the district director the purchase of manufactured firelog fuel.

Part 8 - Schedules

- 29.** Schedules A and B attached hereto form part of this Emission Regulation.

Part 9 - Commencement

- 30.** This Emission Regulation will come into effect on May 15, 2020.

Read a first time this _____ day of _____, _____

Read a second time this _____ day of _____, _____

Read a third time this _____ day of _____, _____

Passed and finally adopted this _____ day of _____, _____

Sav Dhaliwal, Chair

Chris Plagnol, Corporate Officer

Schedule A: Eligibility for Registration - Emissions Standards

In Schedule A, “**particulate matter**” means a mixture of solid particles and liquid droplets suspended in the air.

For the purposes of determining eligibility for registration of a residential indoor wood burning appliance under Part 4 of this Emission Regulation, the following emissions standards are prescribed:

Residential indoor wood burning appliance	Standard for eligibility:
Certified residential indoor wood burning appliance bearing a certification mark	Conformity with the Canadian standard or the US standard.
Previously certified residential indoor wood burning appliance bearing a certification mark	Conformity with a predecessor emissions standard of the Canadian standard or the US standard, that was in effect at the time the appliance was installed in the residence at the registered appliance address.
All other residential indoor wood burning appliances	<p>The owner or operator provides satisfactory evidence to the district director to prove the appliance meets or betters:</p> <ul style="list-style-type: none">• the current Canadian standard; or• the current US standard. <p>OR</p> <p>The owner or operator provides satisfactory evidence to the district director that the appliance:</p> <ul style="list-style-type: none">• has a particulate matter emission rate that does not exceed 4.5 grams per hour; or• is a masonry heater.




Schedule B: Best Burning Practices

Compliance with best burning practices means to:

- A. operate a residential indoor wood burning appliance and any attached emission control equipment in accordance with the manufacturer's recommended operating procedures;
- B. operate a residential indoor wood burning appliance in a manner that produces no visible emissions except during the starting of a new fire for a period not to exceed twenty minutes in any four hour period; and
- C. to apply the following practices to minimize smoke:
 - Only burn clean, seasoned wood or wood products, manufactured firelogs, or wood pellets and, for the purpose of starting a fire only, non-glossy, uncoated, uncoloured paper.
 - Do not burn garbage, including plastics, rubber, treated wood and painted wood.
 - Burn small, hot fires.
 - Prevent smouldering fires.
 - If your appliance is designed for extended burns to provide an overnight heat source, load the fuel to prevent the fire from smouldering:
 1. Rake the coals towards the air inlet and place large pieces of wood compactly in the firebox behind the coals so the heat and flame do not penetrate the new load.
 2. Open the air inlets fully for 15 to 30 minutes until the outer pieces of wood are charred.
 3. Once a thick layer of charcoal has formed on the outer pieces, reduce the air supply in stages to the desired level.
 - Inspect and maintain the appliance in accordance with the recommendations of a qualified person.



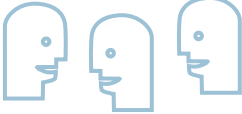



A Phased Approach to Regulating Emissions From Indoor Residential Wood Burning

CONSULTATION SUMMARY REPORT

	BACKGROUND <p>Fine particulate matter is associated with chronic and acute respiratory and health problems, particularly for children, the elderly, and people with existing heart and lung conditions. Indoor residential wood burning contributes more than a quarter of the emissions of fine particulate matter in the region. In October 2017 the MVRD Board directed staff to proceed with consultation on a residential wood smoke regulation for Metro Vancouver.</p>
	CHALLENGE <p>Provisions in Metro Vancouver's air quality management bylaw address the allowed fuels and operation of wood burning appliances. However, these restrictions have not fulfilled their intended purpose. Voluntary measures, such as the wood stove exchange program and wood heat workshops, have reduced fine particulate matter emissions but more robust initiatives are being considered to provide greater safeguards to public health.</p>
	REQUEST FOR INPUT <p>Metro Vancouver sought input on proposals for a phased approach to regulating indoor residential wood burning. The phases were:</p> <ul style="list-style-type: none"> • Seasonal restrictions on use between May 15 and September 15, from 2020. • Registration of appliances that meet particulate matter emissions levels or other criteria, from 2022. • Prohibition of smoke emissions from unregistered appliances, from 2025.

ENGAGEMENT ACTIVITIES

Metro Vancouver led a public consultation process between November 2017 and March 2018.

350 Email invitations to open houses, online webinars or meetings 	650,000 Estimated reach of advertising through newspapers, website and social media 	6 Open houses 	100 Attendees of open houses, webinars or other presentations 	200 Responses from BC Home + Garden Show questionnaire
		4 Online webinars 	300 Responses by email, letter, phone and online comment form 	1,100 Responses from public opinion poll 

ENGAGEMENT RESULTS

SUPPORT

NEUTRAL

OPPOSE

NUMBER OF RESPONDENTS

Public opinion poll = 1,100 | BC Home + Garden Show = 200 | Comments form = 200

Seasonal restrictions

Public opinion poll

54%

23%

19%

BC Home + Garden Show Questionnaire

62%

21%

16%

Comments form

44%

56%

Appliance registration

Public opinion poll

57%

20%

20%

BC Home + Garden Show Questionnaire

53%

23%

23%

Comments form

28%

72%

Emissions restrictions

Public opinion poll

53%

20%

24%

BC Home + Garden Show Questionnaire

64%

18%

16%

Comments form

25%

75%

Exemption for sole source of heat

Public opinion poll

58%

20%

18%

BC Home + Garden Show Questionnaire

64%

24%

10%

Comments form

77%

23%

Exemption for financial hardship

Public opinion poll

48%

24%

22%

BC Home + Garden Show Questionnaire

58%

27%

13%

Comments form

75%

25%

Exemption for rural residences

Public opinion poll

50%

26%

19%

BC Home + Garden Show Questionnaire

61%

23%

14%

Comments form

76%

24%

QUALITATIVE FEEDBACK

Other issues raised included concerns about:

- Insufficient protection from the impacts of wood smoke being offered in the regulatory proposals.
- Requirements being too onerous or invasive.
- Challenges with respect to verifying compliance and effective enforcement.
- Impacts for those who use wood burning appliances only occasionally.
- The soundness of scientific and technical justifications for introducing a regulation to reduce emissions from indoor residential wood burning.
- The affordability or lack of availability of heating alternatives.
- Compromised air quality in the region in the summer.
- The inappropriate timeline for each phase – too long or too short.
- The desire for enhanced financial support for upgrading or replacing appliances.
- The need for an alternative heat source available for emergency use as a neighbourhood resource.
- Impacts on property value.
- Definitions of financial hardship.
- 'Grandfathering' of existing indoor residential wood burning appliances.
- Losses to social occasions.
- The unintended consequence of increased use of wood burning appliances to offset the costs of upgrading equipment.

FUTURE CONSIDERATIONS

A proposed regulation would address the following issues:

- Impacts of a potential seasonal restriction on the use of indoor wood burning appliances for residents whose homes are in remote, off-grid locations;
- Concerns that there may be differences between the emission level that an appliance is certified to meet, and actual emissions when the device is used on an ongoing basis, and the need for ongoing education about clean burning practices;
- Inquiries about the effectiveness of manufactured fire logs in reducing emissions from wood burning appliances;
- Necessity of and costs associated with requiring annual renewals of registration;
- Inclusion of restrictions on wood burning during air quality advisories;
- Promoting compliance with regulatory requirements and maintaining appropriate levels of enforcement activities.



metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

Table 1: Key Proposed Requirements and Phased Implementation

Requirements	Inside UCB	Outside UCB	
		Access to some services	Remote, off-grid
Any appliance allowed during emergencies	✓	✓	✓
Phase 1 (starting on May 15, 2021)			
No indoor wood burning from May 15 to September 15, unless sole source of heat	✓	✓	✗
Phase 2 (starting on September 15, 2022)			
Use of best burning practices	✓	✓	✓
Declare compliance with best burning practices	✓	✓	✓
Confirm declaration every three years	✓	✓	✗
Registration of wood burning appliances	✓	✗	✗
Confirm registration every three years	✓	✗	
Registered appliances meet emissions standards OR are sole source of heat OR use only manufactured firelogs, resulting in no visible emissions	✓		
Phase 3 (starting on September 15, 2025)*			
Use of registered appliances only	✓	✗	✗
Low income households can use any wood-burning appliance	✓	✓	✓

* 2032 for Lions Bay

✓ = required ✗ = not required

To: Climate Action Committee

From: Erik Blair, Air Quality Planner
Parks and Environment Department

Date: February 26, 2020 Meeting Date: March 13, 2020

Subject: **Addressing the Greenhouse Gas Intensity of Buildings in the BC Building Code**

RECOMMENDATION

That the MVRD Board write a letter to the provincial Minister of Municipal Affairs and Housing and other appropriate provincial government ministries requesting that the Province include:

- a) opt-in greenhouse gas intensity performance requirements for new construction in the British Columbia Building Code;
 - b) an option to require zero emissions space heating and hot water; and
 - c) complementary requirements in the proposed provincial “Retrofit Code” for existing buildings.
-

EXECUTIVE SUMMARY

Buildings account for one quarter of regional GHG emissions, primarily through burning natural gas for space and water heating. The BC Energy Step Code, adopted by many jurisdictions in the region and across BC, establishes energy efficiency targets, but does not directly address GHG emissions reductions in new construction. This will lead to many new buildings that will require significant retrofits to become carbon neutral in the future, costing building owners time and money.

In the absence of provincial requirements, many local governments in Metro Vancouver have developed innovative approaches to reduce the GHG intensity (GHGI) of new buildings. These solutions are a departure from the consistency that the BC Energy Step Code aims to achieve. Incorporating GHGI limits into the BC Building Code can directly reduce GHG emissions at point of construction. Port Moody City Council will be submitting a UBCM resolution that calls on the Province to include GHGI for new construction in the BC Building Code.

PURPOSE

To provide the Climate Action Committee with an update on local government action to reduce greenhouse gas (GHG) emissions from new construction in the absence of a consistent provincial framework, and to propose that the MVRD Board advocate to the Province to enact GHGI requirements for new construction and retrofits to existing buildings.

BACKGROUND

Under *Climate 2050*, Metro Vancouver has identified the need to rapidly accelerate emission reductions from new and existing buildings across the region. Buildings account for 25% of the region’s GHG emissions, and 9% of all nitrogen oxide emissions (NOx). To meet the goal of becoming a carbon neutral region by 2050, all of our buildings must be net zero carbon in their operation. This can largely happen through the electrification of a building’s space heat and hot water systems, complemented by design and construction that achieves high standards of energy performance.

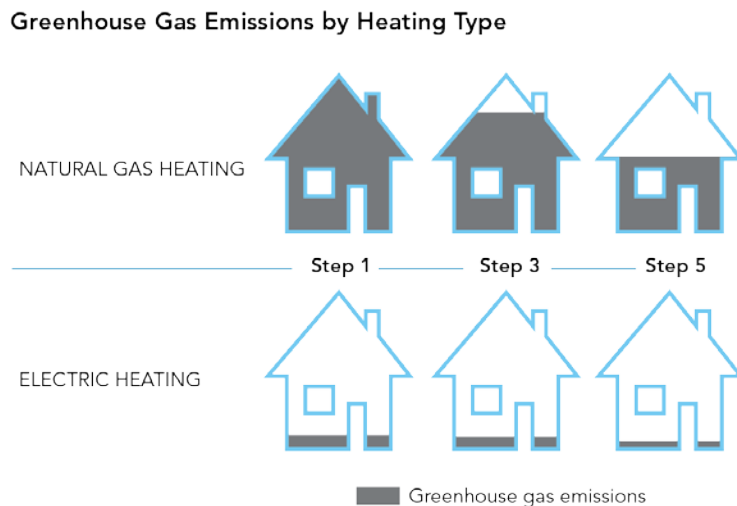
The BC Energy Step Code (ESC) is a voluntary energy efficiency standard in the BC Building Code (BCBC). While it establishes increasingly stringent energy-efficiency requirements, it does not directly address GHG emissions reductions. As a result, many new buildings under construction will require significant retrofits to become carbon neutral. The cost and burden of these future retrofits can be reduced by the introduction of greenhouse gas intensity (GHGI) requirements into the BCBC.

THE CLEANBC PLAN AND BUILDING EMISSIONS

The Province has committed to reducing GHG emissions by at least 40% below 2007 levels by 2030, 60% by 2040, and 80% by 2050. Released in 2018, the *CleanBC Plan* includes a target for GHG reduction for buildings of 40% by 2030, emphasizing the opportunity to transition buildings away from carbon-intensive fossil fuels. While the plan does not specifically outline a policy pathway to achieve the 40% target, the Province has, through its *Clean, Efficient Buildings Intentions Paper* signaled a willingness to explore “developing voluntary codes and standards, similar to the Energy Step Code, to regulate GHG emissions directly in the BC Building Code” [Reference 1]. To date, the Province has not explored this intent with additional stakeholder engagement, however it is clear that policies and programs that achieve GHG reductions and improve energy efficiency are consistent with commitments made by the Province and local governments.

THE BC ENERGY STEP CODE

The BC Energy Step Code was introduced in April 2017 as a voluntary energy efficiency standard that local governments can adopt over and above the minimum energy performance requirements set out in the BCBC. The ESC establishes targets for increasing energy efficiency of new construction, but does not explicitly address GHG emissions reductions.



In order to better understand the potential for GHG emissions reductions from the Step Code, the Provincial Ministry of Housing and Affairs commissioned a study to explore the range of possible GHG emission reductions levels in new buildings at each step of the Step Code [Reference 2]. As demonstrated in the image above, a single family home constructed to Step 5 – the highest level of

the Step Code – that uses natural gas for heating, would achieve approximately a 50% reduction in greenhouse gas emissions compared to a “baseline” Step 1 home heated by natural gas.

In contrast, by switching to electricity for heating, even a Step 1 home would achieve at least a 90% reduction in GHG emissions compared to the baseline, as well as eliminate common air contaminant emissions. Due to the broad availability of low carbon electricity in B.C., transitioning buildings to electric heating and hot water is a clear pathway to zero emissions homes that can be complemented by targeted incentive and rebate programs to lower any incremental costs to builders and consumers.

LOCAL GOVERNMENT APPROACHES TO REDUCE GHGs FROM BUILDINGS

In the absence of a provincial requirement or clear local government authority to set GHGI limits, many local governments in Metro Vancouver have put in place a variety of innovative approaches to reduce the GHGI of new buildings. Some have adopted a “two tiered” approach where builders may voluntarily build to a lower step of the Step Code provided that they install a low carbon energy system (LCES) for heating and hot water. Other local governments are exploring the use of Development Permit Areas (DPA) as a way to introduce a LCES pathway. It is likely that many other local governments will begin to explore innovative ways to reduce GHG emissions from new buildings in order to meet their community GHG targets. This patchwork of solutions is a departure from the work that the Province and many stakeholders have done with the Step Code to create a consistent and universal approach to energy efficiency requirements. Using the proven approach of GHGI performance requirements in buildings would address this issue.

In 2016, the City of Vancouver adopted the *Zero Emissions Building Plan* which sets GHGI limits for new buildings. Vancouver establishes its own design and construction requirements through the Vancouver Building Bylaw, a unique authority provided under the Vancouver Charter. In four years, these GHGI requirements have led to the completion of over 2,500 low-carbon housing units in Vancouver that have lower heating bills, increased comfort, and better indoor air quality. Vancouver Council has also adopted a target to reduce the embodied carbon from new buildings by 40% by 2030.

Port Moody UBCM Resolution Supports GHGI in Buildings

At its February 25, 2020, meeting, Port Moody Council adopted a UBCM resolution that calls on the Province to include GHG performance requirements for new construction in the BCBC, including a pathway to achieve carbon neutral buildings in a timeline commensurate with local and provincial government targets. In 2019, Port Moody Council submitted a similar resolution that was not endorsed by UBCM at that time due to concerns from some northern and rural communities in B.C. As a result, the revised 2020 resolution also asks the Province to liaise with communities in other regions of B.C. to ensure that the unique circumstances of northern and rural communities are understood. This resolution will be submitted to the Local Mainland Local Government Association to be included in the resolution session at their annual conference on May 6-8, 2020. The resolution, as passed by Port Moody Council, was not available at time of writing of this report, but will be provided to the Committee as an information item at a later date.

RETROFIT CODE FOR EXISTING BUILDINGS

Action is currently focused largely on addressing GHG emissions for new buildings, however the vast majority of emissions reductions in the buildings sector will be through low carbon retrofits to existing

buildings. In response to this, the Province has started a process to develop and implement a retrofit code for existing buildings, which is scheduled to be completed by 2024. Similar to the Step Code, the retrofit code is a critical opportunity to drive greenhouse gas emission reductions in existing buildings through increased electrification of space and water heating. The Ministry of Municipal Affairs and Housing has indicated that engagement on this new code will begin sometime in 2020.

ALTERNATIVES

1. That the MVRD Board write a letter to the provincial Minister of Municipal Affairs and Housing and other appropriate provincial government ministries requesting that the Province include:
 - a) opt in greenhouse gas intensity performance requirements for new construction in the British Columbia Building Code;
 - b) an option to require zero emissions space heating and hot water; and
 - c) complementary requirements in the proposed provincial “Retrofit Code” for existing buildings.
2. That the MVRD Board receive for information the report dated February 26, 2020, titled “Addressing the Greenhouse Gas Intensity of Buildings in the BC Building Code”.

FINANCIAL IMPLICATIONS

There are no financial implications associated with Alternative 1 in this report.

CONCLUSION

Metro Vancouver and a growing number of its member municipalities have committed to becoming carbon neutral by 2050, signaling the urgent need to drastically reduce emissions from new and existing buildings. While the Province has taken a leadership role in developing the BC Energy Step Code, it does not explicitly address GHG emissions. As buildings can last 50 years or more, and are the source of one quarter of our regional GHG emissions, failing to limit emissions from new construction will necessitate retrofits to those new buildings in the future at greater difficulty and cost for building owners, occupants, and taxpayers. Staff recommend Alternative 1, that the Board write to appropriate provincial ministries to request that an effective and consistent greenhouse gas intensity framework for new and existing buildings be put in place, in order for local and provincial governments to achieve our reduction targets.

References

1. [Province of British Columbia, “Clean, Efficient Buildings Intentions Paper”](#)
2. [Province of British Columbia, “Implications of the BC Energy Step Code on GHG Emissions”](#)

37455171

To: Climate Action Committee

From: Roger Quan, Director, Air Quality and Climate Change
Parks and Environment Department

Date: February 20, 2020 Meeting Date: March 13, 2020

Subject: **Manager's Report**

RECOMMENDATION

That the Climate Action Committee receive for information the report dated February 20, 2020, titled "Manager's Report".

Climate Action Committee 2020 Work Plan

The attachment to this report sets out the Committee's Work Plan for 2020. The status of work program elements is indicated as pending, in progress, or complete. The listing is updated as needed to include new issues that arise, items requested by the Committee, and changes to the schedule.

Air Quality Monitoring on Musqueam Reserve Lands in Vancouver

In March 2020, Metro Vancouver's mobile air monitoring unit (MAMU) will begin monitoring air quality on Musqueam's Indian Reserve No. 2 lands in Vancouver. In cooperation with Musqueam's public works department, MAMU will be located beside the Musqueam Cultural Pavilion, near the shore of the north arm of the Fraser River. Outreach materials have been developed to inform the community in the vicinity of the project.

MAMU is a state-of-the art mobile air quality station, equipped with scientific instruments for detecting and measuring a range of air contaminants. MAMU also collects data on wind direction, wind speed, temperature and relative humidity to help assess air quality. The unit electronically transmits this data to Metro Vancouver's Head Office in Burnaby in real time. MAMU will continue monitoring air quality at this location for up to one year. While MAMU is largely automated, Metro Vancouver air quality technicians will be visiting the unit for routine inspections.

The monitoring will provide information on air quality in the Musqueam community, and support Metro Vancouver's Iona Island Wastewater Treatment Plant Biosolids Dewatering Facility project. In February 2020, Metro Vancouver began construction of the new Biosolids Dewatering Facility within the existing Iona Island Wastewater Plant in the City of Richmond, which will be used to dewater ongoing production of biosolids. Data collected by MAMU will be used to track air quality during construction, help the new facility perform as intended, and compare air quality at Musqueam with nearby monitoring stations and other parts of the region.

MAMU is part of the Lower Fraser Valley network of air quality monitoring stations, located from Horseshoe Bay to Hope. The nearest permanent station to the Musqueam community is located near the east side of the Vancouver International Airport. The Vancouver Airport station is operated by Metro Vancouver with partial funding from the Vancouver Airport Authority.

Clean Air Plan and Climate 2050 Engagement Update

In September 2019, the MVRD Board directed staff to proceed with integrated engagement on the Clean Air Plan and the development of Climate 2050 Roadmaps. The Committee has received discussion papers on the largest emissions sources: buildings, industry and transportation, and staff continue to develop additional discussion papers on the remaining issue areas.

In February, staff presented to the White Rock Environmental Advisory Committee and held community information booths in Langley, New Westminster, and Vancouver. Also in February, Staff hosted three webinars on the buildings, industry and transportation issue areas, with an average attendance of 30 participants, representing industry, professionals and organizations with related responsibilities.

In March, staff will host a webinar for member jurisdiction and Provincial staff that will introduce the Clean Air Plan and will again focus on buildings, industry and transportation. Additional public outreach for March will focus on reaching people particularly vulnerable to air quality issues and climate change, such as people with pulmonary health conditions, elderly people, and people in vulnerable housing situations. Staff are also working with community leaders and advocacy groups to determine the most effective approach to engaging less typical audiences around potential policies and related impacts.

As reported to the Committee in February, online questionnaires posted on Buildings, Transportation and Industry remain open to April 30, and the project team email is available for correspondence. These online, accessible options are promoted through social media, newsletters, outreach to associations, and on the Clean Air Plan and Climate 2050 consultation webpages on Metro Vancouver's website. Member jurisdictions are invited to further promote these feedback options.

The Climate Literacy online learning modules continue to be developed and it is still anticipated that these will be launched by the end of this year. The next discussion papers in development include Nature & Ecosystems, and Agriculture. Staff will report back to the Committee with additional details as the engagement program proceeds.

Energy Improvements in Metro Vancouver Head Office

A number of energy improvements have been implemented at Metro Vancouver's head office location at Metro Tower 3 in Burnaby. These are summarized below:

- A high level review of the building controls was undertaken, primarily relating to setpoints, schedules and sequences. As a result of this, the chiller sequence was revised to achieve improved efficiencies. A tenant occupancy audit was undertaken and savings were achieved by aligning schedules more closely with occupancy.
- A review of lighting was undertaken and two major lighting retrofits (to LED) were identified for the parkade, loading bay and lobby areas. These projects were completed in 2018/19.
- An ASHRAE Level II energy audit was undertaken (with 50% funding from the utility), which identified additional controls optimizations and capital projects. Where low cost measures were identified, these have been implemented.

- A follow-on Low Carbon Electrification study was undertaken, again with 50% funding. The results of this are being reviewed and may form part of Metro Tower 3's low carbon strategy.
- The building achieved an Energy Star score of 94 (out of 100) and certification for the year ending August 2019.

As a result of these energy efficiency projects, the following savings have been achieved (when compared with 2018 consumption):

- 690,000 kWh energy avoided;
- \$37,000 avoided energy costs; and
- 80 tCO₂e greenhouse gas (GHG) emissions avoided.

In addition to the energy improvement projects, there have also been improvements related to water and waste. A water audit was completed in 2019 and subsequent adjustments to the water treatment system, combined with fountain and washroom optimizations has resulted in a 7% reduction in water consumption at the property (compared with 2018). A full waste audit was conducted in 2019, with results split by tenant. This has provided valuable baseline information that will enable future waste reduction and diversion initiatives to be accurately targeted.

Building optimization and improvements are ongoing and the next steps include a review of Low Carbon Electrification opportunities, and further lighting retrofits.

Attachment

Climate Action Committee 2020 Work Plan

37208379

Climate Action Committee 2020 Work Plan

Report Date: February 20, 2020

Priorities

1 st Quarter	Status
Climate 2050 and Clean Air Plan Discussion Papers: Nature and Ecosystems, Agriculture, and Waste	In progress
Climate 2050 - managing Metro Vancouver's corporate energy and GHG emissions	In progress
Air Quality – proposed bylaw for residential wood burning	In progress
Air Quality - initiate consultation on expansion of Non-Road Diesel Engine bylaw	In progress
SIF (Sustainability Innovation Fund) – 2020 proposals	Complete
SIF – results of Air Aware citizen science air quality monitoring	In progress
SIF – results of electric vehicle fast charger demonstration at Metro Tower III	In progress
Ecological Health – invasive species – outreach materials	Complete
Participate in environmental assessment processes as required	In progress
2 nd Quarter	
Climate 2050 – electric vehicle programs review and recommendations	Pending
Air Quality – 9 th annual Caring for the Air report	In progress
Air Quality - monitoring network review and upgrades	In progress
Air Quality - initiate consultation on review of air quality regulatory fees	In progress
Air Quality – second phase of consultation on proposals for managing cannabis production emissions	Pending
SIF – status report on previously approved projects	In progress
SIF – results of the Strata Energy Advisor pilot program and proposals for moving forward	In progress
SIF – design for public display of air quality monitoring data and outreach strategy	In progress
Ecological Health Framework – annual report	Pending
Ecological Health – invasive species – best management practices	Pending
Participate in environmental assessment processes as required	Pending
3 rd Quarter	
Climate 2050 Annual report – Metro Vancouver's climate actions and carbon neutral progress	In progress
Climate 2050 and Clean Air Plan – Phase I engagement results	Pending
Climate 2050 and Clean Air Plan – modelling to support a carbon neutral region	Pending
Air Quality - outreach on reducing residential wood-burning emissions	Pending
Air Quality – second phase of consultation on open-air burning bylaw	Pending
Participate in environmental assessment processes as required	Pending
4 th Quarter	
Climate 2050 Roadmaps – Buildings, Industry, and Transportation	In progress
Climate 2050 – regional building emissions benchmarking program	In progress
Metro Vancouver's Draft Clean Air Plan	Pending
Air Quality - initiate consultation on regulatory measures to meet ambient air quality objectives for nitrogen dioxide	Pending

SIF – Metro Vancouver’s Sustainable Infrastructure and Buildings Policy Design Guide	In progress
Annual budget and 5 year financial plan	Pending
Ecological Health – regional ecosystem connectivity	Pending
Participate in environmental assessment processes as required	Pending



Reference: 355771

February 28, 2020

Sav Dhaliwal, Chair
and Directors
Metro Vancouver Board
4730 Kingsway
Burnaby BC V5H 0C6

Sent via email: Maureen.Trainor@metrovancover.org

Dear Chair Dhaliwal and Directors:

Thank you for your letter of February 6, 2020, and your enclosed report, regarding alignment of federal, provincial and local government greenhouse gas (GHG) targets. I agree that it is essential for all levels of government to work together in addressing their shared climate action responsibilities.

As you note, the *Climate Change Accountability Act* (CCAA) includes legislated targets to reduce B.C.'s GHG emissions by at least 40 percent below 2007 levels by 2030, 60 percent by 2040, and 80 percent by 2050. These are ambitious targets and, if met, are consistent with the Paris Agreement commitment to keep global warming below 2°C by the end of the century.

We updated the CCAA last fall to require an interim target and sectoral targets to be set in addition to those above. The interim target, for a year prior to 2030, will help us ensure that we are on track to meet our 2030 target and that we are laying the groundwork for greater reductions in the following decades. The sectoral targets will work in synergy with our province-wide targets to ensure that we reduce our emissions in a way that works for all British Columbians and that no sector is left behind or overburdened.

We are continually monitoring and periodically reviewing our targets to ensure that they are in keeping with our climate goals. This includes a legally mandated review of the sectoral targets every five years starting in 2025. We are proud of B.C.'s world-leading climate action, so as several jurisdictions around the world adopt net GHG neutrality by 2050 as a target, we will continue to monitor our own targets to ensure they are achieving necessary outcomes. Our approach will naturally be informed by the Paris Agreement commitment to pursue actions to limit global warming to 1.5°C and the best available science on what this would require, as well as the targets of other orders of government.

...2

As part of our planning, it is important that we receive an independent review of the government's progress on reducing emissions and the effectiveness of our targets. Earlier this month I announced the Climate Solutions Council, made up of members from First Nations, environmental organizations, industry, academia, labour and local government. This Council will provide independent feedback and recommendations on our actions, which could include updating our emissions targets.

Of course, targets are meaningless without a credible plan to meet them. Our CleanBC plan describes specific reductions that we project will achieve 79 percent of our 2030 emissions target, and we are in the process of identifying additional reductions across more sectors of our economy to meet the remaining 21 percent. Many of the policies and initiatives in CleanBC that support achieving the 2030 target will also support achieving the more stringent 2040 and 2050 targets as they are further developed. CleanBC will lay the groundwork today that will be necessary for B.C. to achieve its 2050 targets, or indeed become GHG-neutral in the future.

It is important that the B.C. Government is accountable for the Province's emissions and the actions that we are taking to reduce them. Under the fall 2019 updates to the CCAA, I will present an annual, detailed climate change accountability report in the Legislature on the actions taken to reduce emissions and manage risks from climate change, as well as actions and supporting expenditures planned for each prospective three-year period. The first such report is due later in 2020, and earlier this month we released a one-year [CleanBC review report](#) covering 2019. This climate accountability framework puts us well ahead of most other jurisdictions in North America and will ensure that British Columbians can see we are working under a credible plan to meet our targets. We continue to work with the federal government to ensure that our respective climate plans are mutually supportive, inspire other provinces and jurisdiction, and meet the climate emergency we all face in a positive and transformative way that allows British Columbians and Canadians to succeed and live in economically and environmentally healthy communities.

B.C. is committed to taking strong action on climate change by changing how we power our province, manage our waste, and protect our air, land and water. With the CleanBC plan, the changes we need to make are already underway, as we move towards a cleaner, healthier and more sustainable future. I appreciate your proposal to revise B.C.'s GHG reduction targets to align with the best available science. As we develop more ways to reduce the province's emissions, we will certainly take your comments into serious consideration, and encourage you to liaise with local government representatives on the Climate Solutions Council, Mayors Lee Brain and Josie Osborne, and Vancouver climate policy manager Matt Horne.

Thank you again for taking the time to write, and for all the work Metro Vancouver does on climate policy, without which it would be harder for the Province to meet our targets.

Sincerely,



George Heyman
Minister

To: Regional Planning Committee

From: Edward Nichol, Senior Policy & Planning Analyst, Regional Planning and Housing Services

Date: January 15, 2020 Meeting Date: February 7, 2020

Subject: ***Metro 2040 Climate and Natural Hazards Policy Review Scope of Work***

RECOMMENDATION

That the Regional Planning Committee receive for information the report titled “*Metro 2040 Climate and Natural Hazards Policy Review Scope of Work*”, dated January 15, 2020.

EXECUTIVE SUMMARY

Goal 3 of *Metro Vancouver 2040: Shaping our Future (Metro 2040)*, the regional growth strategy, contains strategies to reduce greenhouse gas (GHG) emissions and to manage risks associated with climate change and other natural hazards. As part of a comprehensive update to *Metro 2040*, staff are conducting several thematic policy reviews. The purpose of the Climate and Natural Hazards Policy Review is to strengthen climate mitigation, climate adaptation and natural hazard policies throughout the regional growth strategy. The engagement opportunities and deliverables will be shared to support both *Metro 2050* (the update to *Metro 2040*), and *Climate 2050*. It is anticipated that the Climate and Natural Hazards Policy Review will take approximately 8 months to complete; the Regional Planning Committee will be updated at that time.

PURPOSE

This report provides the Regional Planning Committee with the scope of work for the *Metro 2040 Climate and Natural Hazards Policy Review*.

BACKGROUND

Metro 2040 is the region’s collective vision for how growth will be managed to support the creation of complete, connected and resilient communities, protect important lands and support the efficient provision of urban infrastructure like transit and utilities. As part of the development of *Metro 2050*, the comprehensive update to *Metro 2040*, staff are conducting several thematic policy reviews. As signatories to the regional growth strategy, member jurisdictions will be involved in each of the policy reviews through the Regional Planning Advisory Committee (RPAC) and its subcommittees, the *Metro 2050* Intergovernmental Advisory Committee, the Regional Planning Committee and the MVRD Board.

POLICY CONTEXT

Role of Land Use / Growth Management in Regional Climate Change Mitigation and Adaptation

The Metro Vancouver region is growing rapidly. The population is increasing by over 30,000 residents each year and it is anticipated that the regional population could reach 3.7 million people by the year 2050. The location of new homes, businesses and institutions strongly influences both GHG emissions and exposure to risks associated with climate change.

Land use decisions determine where residents live, work and play. Metro Vancouver and its member jurisdictions are working to reduce GHGs by focusing growth in a network of transit-oriented urban centres, and building compact, complete communities that offer amenities close to home. This focused growth has three key climate change benefits: first, it reduces development pressure in areas that naturally store and sequester carbon (such as conservation and recreation areas or agricultural areas); second, it reduces emissions by supporting sustainable transportation options such as walking, cycling and public transit and by reducing the distances people typically have to drive; and third, it tends to encourage multi-family development forms which are, on average, more energy efficient than detached homes.

Where and how the region accommodates growth also determines how much residents, businesses, and infrastructure are exposed to physical risks associated with climate change, such as flood risk from rising seas and rivers. Land use decisions that limit new growth or encourage “managed retreat” can limit the exposure to hazards, as can protecting natural areas that serve to buffer climate change impacts.

Metro 2040 Policy Context

Metro 2040’s Goal 3: Protect the Environment and Respond to Climate Change, contains strategies to reduce GHG emissions and to manage risks associated with climate change and other natural hazards.

Climate change mitigation and adaptation actions are also included in *Metro 2040*’s other goals. For example, Goal 1: Create a Compact Urban Area and Goal 5: Support Sustainable Transportation Choices are explicitly linked to reducing GHG emissions along with other benefits. While other policies of *Metro 2040* can also be considered significant, they generally do not explicitly identify their climate change-related benefits (see Attachment 1, Figure 3 for an example of how this was communicated in *Metro 2040*). For example, protecting the supply of agricultural land has arguably been the most important means of limiting development in the flood-prone areas of the region and has therefore helped to limit exposure to flood-related risks. There are therefore opportunities to more clearly communicate the relationship between regional growth strategy actions and their associated climate change mitigation and adaptation outcomes as part of the *Metro 2040* Climate and Natural Hazards Policy Review.

The Metro 2040 Climate and Natural Hazards Policy Review

The purpose of the *Metro 2040* Climate and Natural Hazards Policy Review is to strengthen climate mitigation, climate adaptation and natural hazard policies throughout the regional growth strategy. This work is supported by Metro Vancouver’s *Board Strategic Plan (2019-2022)* which provides direction to “Undertake a comprehensive update to *Metro 2040* to prioritize climate change...”. Since the release of the *Board Strategic Plan (2019-2022)*, Metro Vancouver has adopted a more stringent climate change mitigation target to pursue a carbon neutral region by 2050. This new target is currently the subject of a minor amendment to *Metro 2040* currently under consideration, and if adopted, will become part of *Metro 2050*.

Relationship to *Climate 2050*

There is significant alignment between the scope of the Climate 2050 Roadmaps and the scope of the *Metro 2040* Climate Change and Natural Hazards Policy Review; the engagement opportunities and deliverables from both processes are to be coordinated and shared. This is particularly important for the *Climate 2050* Land Use and Growth Management Roadmap, which will focus on the relationship between land use, climate mitigation and climate adaptation, and the *Climate 2050* Transportation Roadmap, given the strong linkages between land use and transportation planning.

Through the *Climate 2050* work, Metro Vancouver is also in the process of procuring a consultant to support modelling a pathway to achieving new regional GHG reduction targets. This deliverable will be valuable in testing the feasibility of the targets and contextualizing the magnitude of change possible through different policies and could inform the policy directions of *Metro 2050*.

SCOPE AND TIMELINE

Key assumptions about the scope of the Policy Review include:

- Climate change mitigation, climate change adaptation, and hazards that are driven by climate change will be considered;
- Hazards that are not directly tied to climate change, such as earthquake hazard, will also be considered as part of this process due to interdependencies between different hazards;
- Open discussions about the disconnects between climate change mitigation / adaptation objectives and the growth framework will be undertaken. These may be politically sensitive, for example, when reviewing and discussing maps of potential flood or earthquake scenarios and the inevitable geographic distribution of the resulting negative impacts;
- An exploration of the opportunity to reposition the GHG emissions reduction target and other climate-focused content more prominently in *Metro 2050*, as climate change is a cross-cutting issue that impacts many other issue areas;
- A close alignment with *Climate 2050* and with other policy reviews that are underway, especially the Urban Centres and FTDA Policy Review, Environment Policy Review, Housing Policy Review and Transportation Policy Review. Policies that provide substantive benefits for climate mitigation or adaptation will continue to be addressed through those respective policy reviews;
- While the Policy Review will focus on engagement with RPAC and its associate members, as well as those of the Intergovernmental Advisory Committee, there will be opportunities through the *Climate 2050* work for a broader range of municipal staff and other stakeholders to participate in meetings and workshops in early 2020; and
- The Policy Review will identify research gaps and priorities that would support future municipal climate adaptation efforts.

Deliverables will include:

- Reports associated with updating the region's GHG emissions reduction target in *Metro 2040*; a Type III Amendment process is already underway;
- A discussion paper focused on climate mitigation, climate adaptation, natural hazards and land use planning. The discussion paper will support the development of both *Metro 2050* and the *Climate 2050* Land Use and Growth Management Roadmap and will include a high-level review of best practices and policy ideas;

- A review and summary of results from a GHG emissions reduction modelling exercise being undertaken through *Climate 2050*;
- A report with recommended policy options; and
- A final report summarizing policies throughout *Metro 2050* that will have the most substantive impact on climate mitigation and adaptation objectives. The final report for the policy review will seek input on policy recommendations that will be presented to Regional Planning Committee and the MVRD Board for information, at which point the policy review will be complete. The second half of 2020 will be spent on detailing the specific policy content and wording for this and the other policy reviews, in close collaboration with RPAC and the Intergovernmental Advisory Committee.

It is anticipated that the Climate and Natural Hazards Policy Review will take approximately 8 months to complete. The *Metro 2040* Climate and Natural Hazards Policy Review Scope of Work report was provided to the Regional Planning Advisory Committee for information at its meeting on November 22, 2019.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The 2020 Board approved Regional Planning budget includes \$30,000 to support the *Metro 2040* Climate and Natural Hazards Policy Review and associated climate mitigation/adaptation work.

CONCLUSION

There is significant and growing interest in reducing GHG emissions and adapting to our changing climate. This interest is reflected in the *Metro Vancouver Board Strategic Plan (2019-2022)* and a recent Board decision to update the region's GHG emissions reduction targets. While climate change and natural hazards are already a key component of *Metro 2040*, the *Metro 2040* Climate Change and Natural Hazards Policy Review is intended to strengthen climate mitigation, climate adaptation and natural hazard policies throughout the regional growth strategy, and inform the development of *Metro 2050* and the *Climate 2050* Roadmaps.

Attachment

Strategies 3.3 and 3.4 of *Metro Vancouver 2040: Shaping our Future*

References

1. [Climate 2050 Strategic Framework](#)
2. [Lower Mainland Flood Management Strategy](#)
3. [Climate Projections for Metro Vancouver](#)



GOAL 3

Protect the Environment and Respond to Climate Change Impacts

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

The natural environment is important to livability and sustainability as well as our sense of place. The region's diverse open space in mountain, coastal and river areas offers recreation and healthy lifestyle opportunities for residents and visitors. The region's environment also provides essential ecosystem services such as clean drinking water. Protecting these natural features boosts the region's ecological health and resiliency in the face of climate change and natural hazard risks.

The Conservation and Recreation land use designation is intended to help protect the important environmental and recreation areas throughout the region. Strategies and actions recognize the importance of providing connectivity throughout the region linking important natural features, and emphasize the collaborative effort needed to protect and enhance natural assets.

A strategy in this section also addresses climate change, noting that to a large extent greenhouse gas reductions will be achieved by actions contained throughout the Regional Growth Strategy as well as by actions in other Metro Vancouver management plans. The most significant contributions of the Regional Growth Strategy to climate change mitigation will be made through a continued focus on urban containment and land use patterns that support sustainable transportation and reduce energy use. Policies on climate change adaptation, such as protection for at-risk coastal floodplain areas, are included. The strategy also addresses other natural hazards such as flooding, mudslides, interface fires, and earthquakes.

Strategies to achieve this goal are:

- 3.1 Protect Conservation and Recreation lands
- 3.2 Protect and enhance natural features and their connectivity
- 3.3 Encourage land use and transportation infrastructure that reduce energy consumption and greenhouse gas emissions, and improve air quality
- 3.4 Encourage land use and transportation infrastructure that improve the ability to withstand climate change impacts and natural hazard risks



STRATEGY 3.3

Encourage land use and transportation infrastructure that reduce energy consumption and greenhouse gas emissions, and improve air quality

Metro Vancouver's role is to:

3.3.1 Implement the strategies and actions of the Regional Growth Strategy which contribute to regional targets to reduce greenhouse gas emissions by 33 percent below 2007 levels by 2020 and 80 percent below 2007 levels by 2050. Figure 3 identifies examples of strategies and actions contained in the Regional Growth Strategy to address climate change.

3.3.2 Work with the federal government and the province, TransLink, municipalities, non-governmental organizations, and the private sector to:

- a) support the ongoing monitoring of energy consumption, greenhouse gas emissions, and air quality related to land use and transportation infrastructure;
- b) promote best practices and develop guidelines to support local government actions to reduce energy consumption and greenhouse gases, and improve air quality related to land use and transportation infrastructure (e.g. district heating systems and renewable energy opportunities).

3.3.3 Accept Regional Context Statements that encourage land use and transportation infrastructure that reduce energy consumption and greenhouse gas emissions, and improve air quality, and that meet or work towards Action 3.3.4.

The role of municipalities is to:

3.3.4 Adopt Regional Context Statements which:

- a) identify how municipalities will use their land development and transportation strategies to meet their greenhouse gas reduction targets and consider how these targets will contribute to the regional targets;
- b) identify policies and/or programs that reduce energy consumption and greenhouse gas emissions, and improve air quality from land use and transportation infrastructure, such as:
 - existing building retrofits and construction of new buildings to green performance guidelines or standards, district energy systems, and energy recovery and renewable energy generation technologies, such as solar panels and geexchange systems, and electric vehicle charging infrastructure;
 - community design and facility provision that encourages transit, cycling and walking (e.g. direct and safe pedestrian and cycling linkages to the transit system);
- c) focus infrastructure and amenity investments in Urban Centres and Frequent Transit Development Areas, and at appropriate locations along TransLink's Frequent Transit Network;
- d) implement land use policies and development control strategies which support integrated storm water management and water conservation objectives.

Actions Requested of Other Governments and Agencies

3.3.5 That TransLink, in collaboration with Metro Vancouver and municipalities, establish criteria for defining major development proposals, which are referenced in the *South Coast British Columbia Transportation Authority Act*, in order to help meet the objective of concentrating major trip-generating uses in areas well served by transit.

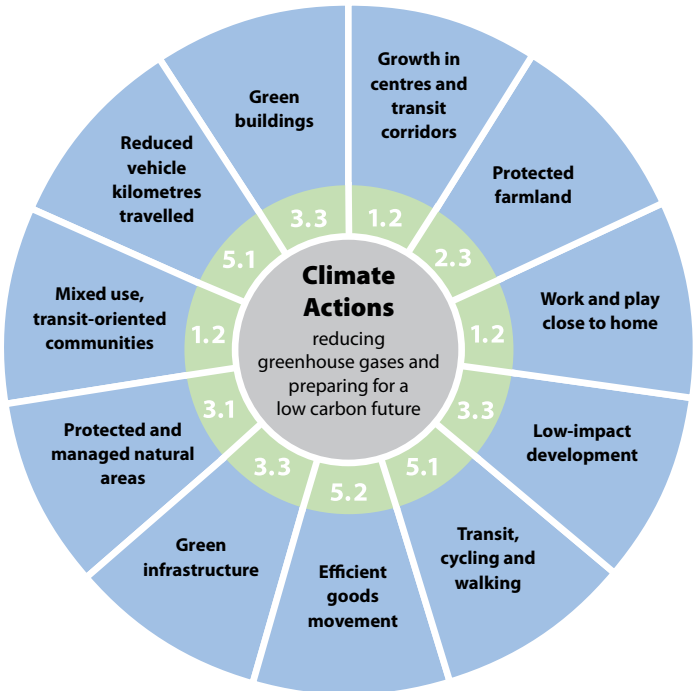
3.3.6 That TransLink pursue reductions of common air contaminants and greenhouse gas emissions from on-road transportation sources in support of regional air quality objectives and greenhouse gas reduction targets.

3.3.7 That TransLink manage its transit fleet and operations with the goal of increasing fuel efficiency and reducing common air contaminants and greenhouse gas emissions over time, in support of the Regional Growth Strategy and Air Quality Management Plan.

3.3.8 That the federal government and the province and their agencies establish further legislative and fiscal actions to help the public and private sectors to maximize reductions in energy consumption and greenhouse gas emissions, and improve air quality, such as:

- a) in the building sector,
 - accelerate the modernization of the BC Building Code
 - increase incentives for residential and commercial building retrofits
 - support, where feasible and appropriate, energy recovery, renewable energy generation and district energy systems and related transmission needs
- b) in the transportation sector,
 - enable the implementation of regional transportation demand management measures such as transportation user-based pricing
 - increase funding for sustainable transportation infrastructure
 - continue to advance stringent standards for on-road vehicle emissions and fuel carbon content.

FIGURE 3
How Land Use and Transportation Actions Address Climate Change



Note: Figure for reference only, see section 6.13.2
The numbers relate to the applicable strategy in the Regional Growth Strategy



STRATEGY 3.4

Encourage land use and transportation infrastructure that improve the ability to withstand climate change impacts and natural hazard risks

Metro Vancouver's role is to:

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

3.4.2 Work with the federal government and the province, TransLink and municipalities to:

- a) consider climate change impacts (e.g. sea level rise) and natural hazard risks (e.g. earthquake, flooding, erosion, subsidence, mudslides, interface fires) when extending utilities and transportation infrastructure that encourages land use development;
- b) research and promote best practices in adaptation to climate change as it relates to land use planning.

3.4.3 Accept Regional Context Statements that encourage land use, transportation and utility infrastructure which improve the ability to withstand climate change impacts and natural hazard risks and that meet or work towards Actions 3.4.4 and 3.4.5.

The role of municipalities is to:

3.4.4 Adopt Regional Context Statements that include policies to encourage settlement patterns that minimize risks associated with climate change and natural hazards (e.g. earthquake, flooding, erosion, subsidence, mudslides, interface fires).

3.4.5 Consider incorporating climate change and natural hazard risk assessments into the planning and location of municipal utilities, assets and operations.

Actions Requested of Other Governments and Agencies

3.4.6 That the Integrated Partnership for Regional Emergency Management, in collaboration with the federal government and the province, and other agencies:

- a) identify areas that are vulnerable from climate change and natural hazard risks, such as those listed in Actions 3.4.2 and 3.4.4;
- b) coordinate priority actions to address the vulnerabilities identified, including implementation and funding strategies.

3.4.7 That the federal government and the province, in collaboration with the Integrated Partnership for Regional Emergency Management and other agencies:

- a) provide financial assistance and timely data and information, such as flood hazard mapping, shoreline mapping, hydrological and hydraulic studies, to better enable local governments to fulfill their flood hazard management roles and responsibilities;
- b) provide a coordination role to address flood hazard issues and management decisions;
- c) implement appropriate preparatory actions to address the implications of long-term sea level rise on infrastructure planning, construction, and operations;
- d) review and improve the effectiveness of existing provincial legislation and guidelines regarding flood hazard management by municipalities.

To: Regional Planning Committee

From: Laurie Bates-Frymel, Senior Planner, Regional Planning and Housing Services

Date: January 20, 2020 Meeting Date: February 7, 2020

Subject: ***Metro 2040 Environment Policy Review – Update on Policy Option Development***

RECOMMENDATION

That the Regional Planning Committee receive for information the report titled “*Metro 2040 Environment Policy Review – Update on Policy Option Development*”, dated January 20, 2020.

EXECUTIVE SUMMARY

On October 21, 2019 staff circulated a survey to Regional Planning Advisory Committee (RPAC) members and associates via email and requested feedback on six high level environmental land use policy ideas. Staff received 11 responses expressing general support for consideration of all six policy ideas in the Environment Policy Review. Feedback will guide refinement of these ideas and the development of policy options over the next few months. The *Metro 2040* Climate Policy Review will also inform these policy options. Staff will provide the Committee with an update on the *Metro 2040* Environment Policy Review mid-2020 and *Metro 2050* policy recommendations for its consideration in the third quarter of this year.

PURPOSE

To provide the Regional Planning Committee with a summary of the feedback received on several high-level policy ideas under consideration as part of the *Metro 2040* Environment Policy Review.

BACKGROUND

At its meeting on September 13, 2019, the Regional Planning Committee received a report titled “*Update on Metro 2040 Environment Policy Review – Forum Results and Policies from Other Jurisdictions*” (Reference 1) that summarized the results of an Environmental Land Use Policy Forum involving staff from member jurisdictions, other levels of government, academics, consultants and non-government organizations hosted by Regional Planning on June 6, 2019. Staff analyzed input from Forum participants, developed high level policy ideas for consideration in the Environment Policy Review, and circulated a survey to RPAC members seeking feedback. Staff also encouraged RPAC members to work with their municipal representatives from their respective environment, parks, or sustainability departments who participate on the RPAC-Environment Subcommittee. This report summarizes the input received on the six environmental land use policy ideas under consideration as part of the *Metro 2040* Environment Policy Review.

ENVIRONMENTAL LAND USE POLICY IDEAS SURVEY

On October 21, 2019 staff circulated a survey to RPAC members and associates requesting feedback on six environmental land use policy ideas:

1. Capture current and emerging environmental planning priorities

2. Develop a regional vision for ecosystem protection, enhancement and restoration
3. A regional green infrastructure network
4. Improve alignment of the Conservation and Recreation regional land use designation with its intended purpose
5. Integrate the Sensitive Ecosystem Inventory
6. Support equitable access and proximity to green space in urban areas to maximize public health benefits.

Staff received 11 responses from the following organizations – the Cities of Maple Ridge, Pitt Meadows, Delta, Port Moody, Burnaby and New Westminster, the District of North Vancouver, Vancouver Park Board, UBC Campus and Community Planning, Vancouver Coastal Health, and the Agricultural Land Commission.

SUMMARY OF FEEDBACK ON ENVIRONMENTAL LAND USE POLICY IDEAS

Table 1 provides an overview of the policy ideas and comments received.

Table 1 – Summary of Feedback Received

Policy idea	Summary of Comments Submitted
1. Capture current and emerging environmental planning priorities	<p>Respondents generally agreed that <i>Metro 2050</i> should reflect priorities for member jurisdictions, including:</p> <ul style="list-style-type: none"> - sensitive ecosystems; - ecosystem services (including carbon storage) / natural capital valuation; - urban forests; - invasive species; and - green infrastructure. <p>They also confirmed that Metro Vancouver should continue to convene forums for cross-boundary collaboration and information sharing, and provide data and best practices on these priority areas.</p>
2. Develop a regional vision for ecosystem protection, enhancement and restoration.	<p>All respondents agreed that a regional vision would help to strengthen collaboration among member jurisdictions and other partners in protecting and enhancing ecosystems that span jurisdictions. Two respondents suggested that communities may see a regional vision as competing with other priorities or as a constraint on their decision-making independence. It was suggested that a vision must be inclusive, broad, and overarching to work. All respondents felt that the whole region, including urban and natural areas, should be included in a regional vision.</p>
3. A regional green infrastructure network	<p>All respondents expressed support for a regional green infrastructure network to support climate action plans, enhance climate resiliency (reduce flooding and urban heat</p>

	island effect), protect biodiversity and food security, and realize infrastructure costs savings and efficiencies. One respondent commented that a regional green infrastructure network plan and supporting strategies would align very well with a regional vision, and another suggested blue (water-based) infrastructure should also be included.
4. Improve alignment of the Conservation and Recreation Regional Land Use Designation with its intended purpose	All respondents agreed that it would be helpful to update the criteria and guidelines for the Conservation and Recreation regional land use designation to improve consistency and ensure that <i>Metro 2040</i> policies are applied to the same land uses across the region.
5. Integrate the Sensitive Ecosystem Inventory (SEI), a science-based analysis that provides consistent mapping of the region's most ecologically important areas.	Respondents supported the inclusion of the SEI in <i>Metro 2050</i> . One respondent suggested that the regional vision, a regional green infrastructure network, and the Conservation and Recreation regional land use designation should be informed by the SEI. Respondents did not comment on whether a reference map or connection to an online tool should be included in <i>Metro 2050</i> , but two respondents stated that it would be helpful to add more geographically directed policy actions. Another suggested that Metro Vancouver should consider how the SEI aligns with existing environmental protection Development Permit Areas.
6. Support equitable access and proximity to green space in urban areas to maximize health benefits	Respondents expressed support for applying a regional lens to the issue of equitable access to green space as it would help with coordination of efforts and resources, and enhance equitable distribution of health and wellbeing across the region, but also achieve co-benefits. Several respondents mentioned that they had already established local decision-making frameworks or standards, while others suggested the need for empirical data, performance targets, guidelines or best management practices, and funding to assist with implementation, evaluation, or monitoring of gains / losses over time.

NEXT STEPS

Feedback received from the Environmental Land Use Policy Forum and the RPAC survey will guide the refinement of these ideas and the development of policy options, in collaboration with RPAC and the RPAC-Environment Subcommittee over the coming months. The *Metro 2040* Climate Policy Review will also inform the policy options. Staff will provide the Regional Planning Committee with an update mid-year and *Metro 2050* policy recommendations for their consideration in the third

quarter of 2020. The Climate Action Committee will continue to receive Regional Planning Committee staff reports on *Metro 2040* Environment Policy Review for information.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

Work on the *Metro 2040* Environmental Land Use Policy Review has been completed within funding allocated by the 2019 and 2020 Regional Planning budgets. There are no other financial implications to this report.

CONCLUSION

Input from member jurisdictions, other levels of government, academics, consultants and non-government organizations collected during Regional Planning's Environmental Land Use Policy Forum in early June 2019 informed the development of six environmental land use policy ideas. On October 21, 2019 staff circulated a survey to RPAC members and associates via email and requested feedback these high level policy ideas:

1. Capture current and emerging environmental planning priorities;
2. Develop a regional vision for ecosystem protection, enhancement and restoration;
3. A regional green infrastructure network;
4. Improve alignment of the Conservation and Recreation regional land use designation with its intended purpose;
5. Integrate the Sensitive Ecosystem Inventory; and
6. Support equitable access and proximity to green space in urban areas to maximize public health benefits.

Staff received responses from 11 RPAC members and associates who expressed general support for all six policy ideas. The feedback received will guide development of policy options over the next few months and the *Metro 2040* Climate Policy Review will also inform these policy options. Staff will provide the Committee with an update on the *Metro 2040* Environment Policy Review mid-2020 and *Metro 2050* policy recommendations for consideration in the third quarter of this year.

References

1. Regional Planning Committee report titled "[Update on Metro 2040 Environment Policy Review – Forum Results and Policies from Other Jurisdictions](#)", dated August 12, 2019.
2. Regional Planning Committee report titled "[Metro 2040 Environment Policy Review – Scope and Process](#)", dated March 22, 2019.