

**METRO VANCOUVER REGIONAL DISTRICT
CLIMATE ACTION COMMITTEE**

REGULAR MEETING

Friday, June 10, 2022

1:00 p.m.

**Meeting conducted electronically pursuant to the Procedure Bylaw
28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia
Webstream available at <http://www.metrovancouver.org>**

A G E N D A¹

1. ADOPTION OF THE AGENDA

1.1 June 10, 2022 Regular Meeting Agenda

That the Climate Action Committee adopt the agenda for its regular meeting scheduled for June 10, 2022 as circulated.

2. ADOPTION OF THE MINUTES

2.1 May 13, 2022 Regular Meeting Minutes

pg. 4

That the Climate Action Committee adopt the minutes of its regular meeting held May 13, 2022 as circulated.

3. DELEGATIONS

3.1 Tasha Murray, Executive Director, Invasive Species Council of Metro Vancouver, and Kevin Li, Chair, Regional Invasive Species Working Group

pg. 11

Subject: Regional Invasive Species Management Support

4. INVITED PRESENTATIONS

4.1 Fern Stockman, Project Assessment Director (Oil, Gas, and Industrials Team) and Kimberly Walters, Executive Project Director, BC Environmental Assessment Office

Subject: Summary of EAO review process, overview of Tilbury Phase 2 LNG and Tilbury Marine Jetty projects

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

5. REPORTS FROM COMMITTEE OR STAFF

- 5.1 2022 Update on Regional District Sustainability Innovation Fund Projects** *pg. 13*
That the Climate Action Committee receive for information the report dated June 1, 2022, titled “2022 Update on Regional District Sustainability Innovation Fund Projects.”
- 5.2 BC Lung Foundation – Contribution Agreement 2023-2025** *pg. 27*
That the MVRD Board approve a three-year Contribution Agreement for Metro Vancouver to provide funding to the BC Lung Foundation in the amount of \$35,000 per year for the term January 1, 2023 to December 31, 2025, as presented in the report dated May 23, 2022, titled “BC Lung Foundation – Contribution Agreement 2023 – 2025.”
- 5.3 Air Quality Permitting Process**
Verbal Update
Designated Speaker: Kathy Preston, Director, Environmental Regulation and Enforcement
- 5.4 Best Management Practices for Invasive Species: Garlic Mustard, Poison Hemlock and Spurge Laurel** *pg. 40*
That the MVRD Board:
a) receive for information the report dated May 16, 2022, titled “Best Management Practices for Invasive Species: Garlic Mustard, Poison Hemlock and Spurge Laurel”; and
b) direct staff to forward these Best Management Practices and accompanying fact sheets to member jurisdictions for information.
- 5.5 Manager’s Report** *pg. 44*
That the Climate Action Committee receive for information the report dated May 30, 2022 titled “Manager’s Report”.

6. INFORMATION ITEMS

- 6.1 Report to Regional Planning Committee dated May 19, 2022, titled “Process to Consider Stronger Climate Action Language and Policy for Metro 2050”.** *pg. 49*
- 6.2 Media Release by BC Centre for Innovation and Clean Energy dated May 26, 2022 re Hydrogen Investment Blueprint to Stimulate BC’s Promising Hydrogen Sector Beginning with Metro Vancouver Region.** *pg. 65*

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 June 10, 2022.

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
Royer, Zoë – Port Moody
Steves, Harold – Richmond
Wilson, Chris – Coquitlam
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 1:02 p.m. on Friday, May 13, 2022 in the 28th Floor Boardroom, 4515 Central Boulevard, 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
 Councillor Jessica McIlroy*, North Vancouver City
 Mayor Ron McLaughlin*, Lions Bay
 Councillor Allison Patton*, Surrey
 Councillor Zoë Royer*, Port Moody (arrived at 1:08 p.m.)
 Councillor Harold Steves*, Richmond
 Councillor Chris Wilson*, Coquitlam
 Councillor Ahmed Yousef*, Maple Ridge

MEMBERS ABSENT:

None.

STAFF PRESENT:

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

1. ADOPTION OF THE AGENDA

1.1 May 13, 2022 Regular Meeting Agenda

It was MOVED and SECONDED

That the Climate Action Committee adopt the agenda for its regular meeting scheduled for May 13, 2022 as circulated.

CARRIED

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

2. ADOPTION OF THE MINUTES

2.1 April 8, 2022 Regular Meeting Minutes

It was MOVED and SECONDED

That the Climate Action Committee adopt the minutes of its regular meeting held April 8, 2022 as circulated.

CARRIED

1:08 p.m. Councillor Royer arrived at the meeting.

3. DELEGATIONS

3.1 Dr. Larry Barzelai, Chair of the BC Branch of the Canadian Association of the Physicians for the Environment

Dr. Larry Barzelai, Chair of the BC Branch of the Canadian Association of the Physicians for the Environment, spoke against the proposed Tilbury LNG Plant Expansion outlining health, climate change, and safety concerns associated with the proposed expansion, and unmet emission reduction targets set by the Provincial and Federal Governments.

In response to questions, members were informed about the need to develop alternative renewable fuels, including solar and wind energy.

Presentation material titled “Why Tilbury Should Not Proceed” is retained with May 13, 2022 Climate Action Committee agenda.

It was MOVED and SECONDED

That the Climate Action Committee request staff to consider the information from the May 13, 2022 delegation from the BC Branch of the Canadian Association of the Physicians for the Environment in the preparation of a staff report on the Tilbury LNG project for the June 2022 meeting.

CARRIED

4. INVITED PRESENTATIONS

4.1 Andrew Hamilton, Senior Project Manager, Tilbury Expansion Program, FortisBC

Andrew Hamilton, Senior Project Manager, Tilbury Expansion Program, FortisBC provided the Climate Action Committee with an overview of the Tilbury Expansion Project proposal, environmental impacts, and mitigation strategies, highlighting a growing demand for diversified energy sources, the Environmental Assessment timelines, and the expansion project phases and drivers.

Members were informed about the LNG benefits to the local airshed and how the Tilbury Expansion Program will meet the increasing demand for a low-carbon fuel for marine vessels and for global markets.

In response to questions, members were informed that the FortisBC environmental impact assessment will be conducted as part of Phase 2 of the Project and will be made available to the public.

Presentation material titled “FortisBC Tilbury LNG Expansion Overview” is retained with May 13, 2022 Climate Action Committee agenda.

4.2 Mel Cheesman, Director of Corporate Services, Mike Brotherston, Manager of Climate Action and Environment, City of Delta

Mel Cheesman, Director of Corporate Services, and Mike Brotherston, Manager of Climate Action and Environment, City of Delta, provided the Climate Action Committee with an overview of the project and the City of Delta’s staff and Council perspectives on the project, outlining the project phases, and potential impacts and strategies to mitigate the effects of the project on the region.

Members were informed about the environmental assessment and rezoning application requirements as part of the expansion project. In response to questions, members were informed about the impacts of the increased number of vessels and the increased demand for LNG energy.

Presentation material titled “Existing and Proposed FortisBC LNG Facilities in Delta” is retained with May 13, 2022 Climate Action Committee agenda.

4.3 Peter Russell, Director, Sustainability and District Energy, and Chad Paulin, Environment Manager, Engineering and Public Works, City of Richmond

Peter Russell, Director, Sustainability and District Energy, and Chad Paulin, Environment Manager, Engineering and Public Works, City of Richmond, provided an overview of the perspectives of the City of Richmond staff and Council on the Tilbury LNG Plant Expansion project, and potential impacts on the region.

Members were informed about the progress of the Technical Working Group, of which the City of Richmond is a member. In response to questions, members were informed about the environmental impact assessment, the terms of its evaluation, and application requirements.

Presentation material titled “Tilbury Island Environmental Assessments” is retained with May 13, 2022 Climate Action Committee agenda.

5. REPORTS FROM COMMITTEE OR STAFF

5.1 Initial Engagement to Develop an Approach for Managing Greenhouse Gas Emissions from Large Buildings in Metro Vancouver

Report dated April 20, 2022, from Erik Blair, Senior Planner, Parks and Environment and Julie Saxton, Air Quality Planner, Parks and Environment, providing the Climate Action Committee with an outline of the initial phase of engagement with key stakeholders to seek input on potential approaches for

managing greenhouse gas emissions from existing large building in the region, working towards achieving of Board-adopted climate action targets.

Members were provided a presentation on the Clean Air Plan and *Climate 2050* Buildings Roadmap, highlighting the emission reduction targets, Zero Emission requirements for existing buildings, a strategy to address the policy gap, the anticipated timeline, and engagement opportunities.

Sean Pander, Green Building Manager, City of Vancouver, informed members about the recommended requirements being considered by the City of Vancouver that set greenhouse emissions limits for commercial and multi-family buildings.

In response to questions, members were informed about the provincial partners working with the Metro Vancouver staff to analyze emissions from buildings in order to address the approach to manage emissions.

Presentation material titled “Initial Engagement to Develop an Approach for Managing Greenhouse Gas Emissions from Large Buildings in Metro Vancouver” is retained with May 13, 2022 Climate Action Committee agenda.

It was MOVED and SECONDED

That the MVRD Board authorize staff to proceed with an initial phase of engagement to develop an approach for managing greenhouse gas emissions from large buildings as described in the report dated April 20, 2022, titled “Initial Engagement to Develop an Approach for Managing Greenhouse Gas Emissions from Large Buildings in Metro Vancouver”.

CARRIED

5.2 Engagement on Proposed Amendments to GVRD Boilers and Process Heaters Emission Regulation Bylaw No. 1087, 2008

Report dated April 20, 2022, from Arvind Saraswat, Senior Project Engineer, Parks and Environment and Esther Berube, Division Manager, Air Quality Bylaw and Regulation Development, Parks and Environment, providing the Climate Action Committee with an outline of the initial engagement on proposed amendments to *GVRD Boilers and Process Heaters Emission Regulation Bylaw No. 1087, 2008* (Bylaw 1087), focused on reducing impacts of harmful emissions of nitrogen oxides(NOx), which include both nitrogen dioxide (NO₂) and nitric oxide (NO).

In response to questions, members were informed that households have been encouraged to use low emission and energy efficient boilers and heaters.

It was MOVED and SECONDED

That the MVRD Board direct staff to proceed with engagement on the proposed amendments to *Greater Vancouver Regional District Boilers and Process Heaters Emission Regulation Bylaw No. 1087, 2008* as described in the report titled “Engagement on Proposed Amendments to *GVRD Boilers and Process Heaters Emission Regulation Bylaw No. 1087, 2008*”, dated April 20, 2022.

CARRIED

5.3 2022 Update on Liquid Waste Sustainability Innovation Fund Projects

Report dated April 20, 2022, from Lillian Zaremba, Program Manager, Collaborative Innovation, Liquid Waste Services, providing the Climate Action Committee with an update on the projects funded under the Liquid Waste Sustainability Innovation Fund.

In response to questions, members were informed that staff are exploring opportunities for capitalizing on the Anaerobic Digestion Optimization project but there are more steps to complete before this can be implemented.

Presentation material titled “2022 Update on Sustainability Innovation Fund Projects” is retained with May 13, 2022 Climate Action Committee agenda.

It was MOVED and SECONDED

That the Climate Action Committee receive for information the report dated April 20, 2022, titled “2022 Update on Liquid Waste Sustainability Innovation Fund Projects.”

CARRIED

5.4 MVRD Concrete and Concrete Products Industries Emission Regulation Amending Bylaw No. 1341, 2022

Report dated May 3, 2022, from Cindy Onyejekwe, Senior Policy Analyst, Parks and Environment and Esther Berube, Division Manager, Air Quality Bylaw and Regulation Development, Parks and Environment, providing the Climate Action Committee with an overview of the *Metro Vancouver Concrete and Concrete Products Industries Emission Regulation Amending Bylaw No. 1341, 2022*, for the MVRD Board’s consideration.

It was MOVED and SECONDED

That the MVRD Board:

- a) give first, second and third reading to *Metro Vancouver Regional District Concrete and Concrete Products Industries Emission Regulation Amending Bylaw No. 1341, 2022*; and
- b) pass and finally adopt *Metro Vancouver Regional District Concrete and Concrete Products Industries Emission Regulation Amending Bylaw No. 1341, 2022*.

CARRIED

5.5 MVRD Gasoline Distribution Emission Regulation Amending Bylaw No. 1342, 2022

Report dated May 3, 2022, from Cindy Onyejekwe, Senior Policy Analyst, Parks and Environment and Esther Berube, Division Manager, Air Quality Bylaw and Regulation Development, Parks and Environment, providing the Climate Action Committee with an overview of the *Metro Vancouver Gasoline Distribution Emission Regulation Amending Bylaw No. 1342, 2022*.

It was MOVED and SECONDED

That the MVRD Board:

- a) give first, second and third reading to *Metro Vancouver Regional District Gasoline Distribution Emission Regulation Amending Bylaw No. 1342, 2022*; and
- b) pass and finally adopt *Metro Vancouver Regional District Gasoline Distribution Emission Regulation Amending Bylaw No. 1342, 2022*.

CARRIED

5.6 MVRD Boilers and Process Heaters Emission Regulation Amending Bylaw No. 1343, 2022

Report dated May 3, 2022, from Arvind Saraswat, Senior Project Engineer, Parks and Environment and Esther Berube, Division Manager, Air Quality Bylaw and Regulation Development, Parks and Environment, providing the Climate Action Committee with an overview of the *Metro Vancouver Boilers and Process Heaters Emission Regulation Amending Bylaw No. 1343, 2022*.

It was MOVED and SECONDED

That the MVRD Board:

- a) give first, second and third reading to *Metro Vancouver Regional District Boilers and Process Heaters Emission Regulation Amending Bylaw No. 1343, 2022*; and
- b) pass and finally adopt *Metro Vancouver Regional District Boilers and Process Heaters Emission Regulation Amending Bylaw No. 1343, 2022*.

CARRIED

5.7 Manager's Report

Report dated April 21, 2022, from Roger Quan, Director, Air Quality and Climate Change, Parks and Environment, providing the Climate Action Committee with an update on the Climate Action Committee 2022 Work Plan and IPCC Climate Change 2022: Mitigation of Climate Change report.

It was MOVED and SECONDED

That the Climate Action Committee receive for information the report dated April 21, 2022 titled "Manager's Report".

CARRIED

6. INFORMATION ITEMS

No items presented.

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 May 13, 2022.

CARRIED

(Time: 3:25 p.m.)

Natalia Melnikov,
Legislative Services Coordinator

Adriane Carr, Chair

52707744 FINAL

Delegation Request

To:	Board & Information Services (delegations@metrovanancouver.org)
From:	Tasha Murray, Executive Director, Invasive Species Council of Metro Vancouver ¹ Kevin Li, Chair, Regional Invasive Species Working Group
Date:	May 31, 2022
Re:	Request to speak at the June 10, 2022 Metro Vancouver Climate Action Committee Meeting

Please accept this delegation request. Proposed delegation details follow.

Presentation Subject: Regional Invasive Species Management Support

Designated Speakers: Kevin Li and Tasha Murray

Presentation Summary: Invasive species are plants and animals that have been introduced to an area without the predators and pathogens from their native habitats that would help keep them in check. They can threaten property and recreational values, infrastructure, agriculture, public health and safety, as well as the ecological health and diversity of our natural environment. Successful control of invasive species requires concerted, targeted and collaborative efforts by many players. Invasive species have many competitive advantages, and are often more adaptable than native species in a variety of ecosystems, suggesting that their impacts will increase with changing climate conditions.

In 2014, Metro Vancouver retained the Invasive Species Council of Metro Vancouver (ISCMV) to work collaboratively with Metro Vancouver member jurisdictions and other partners to develop the '[Invasive Species Management Strategy for Metro Vancouver](#)'. The Strategy's purpose was to:

"To enhance the ability of local, provincial, federal and First Nations governments, working with homeowners, industry and environmental stewards, to prevent new invasive species from establishing in the region, and to contain and control established invasive species."

The Strategy called for shared responsibility and a unified region-wide response, with Metro Vancouver providing a leadership role in regional coordination. In response, Metro Vancouver created the Regional Planning Advisory Committee-Invasive Species Subcommittee (RPAC-ISS), which was successful in bringing together representatives from local governments, other large land managers, non-profit organizations, and businesses. The development of the [regional best management practices series](#) for high priority invaders is one example of an immensely valuable resource that was possible through the collective efforts of RPAC-ISS members, and the financial and administrative support of Metro Vancouver.

In January 2021, Metro Vancouver's Regional Planning staff announced "the intent to transition the RPAC-ISS to an independent, self-organized group on the basis that its primary purpose had been met and a growing need to re-allocate staff resources to other emerging environmental priorities". Despite concern raised by its members, the RPAC-ISS was formally dissolved in December 2021. A new 'Regional Invasive Species Working Group' (RISWG) has met twice in 2022, and although Metro Vancouver staff continue to participate in the RISWG, the burden of region-wide coordination has now fallen on local government staff and the ISCMV. Without Metro Vancouver's support, participation has declined. We feel this change has compromised the progress made by the RPAC-ISS on this important conservation issue from 2016 to 2021.

¹ Corresponding speaker; contact information: tmurray@iscmv.ca, 778-681-8358

It is important for Metro Vancouver to play a leadership role in this issue for several reasons:

- Existing Metro Vancouver policies support a leadership role for Metro Vancouver on invasive species management:
 - [Ecological Health Framework](#) (Strategy 1.4 Manage Invasive species, page 32); Metro Vancouver will:
 - *“Continue to provide a forum for coordination and collaboration with member jurisdictions and other parties to develop best practices, ensure appropriate disposal options, and increase awareness of invasive species.”*
 - *“Develop and employ best practices in the management of invasive species on Metro Vancouver lands and promote their use region-wide.”*
 - [Regional Parks Natural Resource Management Framework](#) (Strategy 1.6 Manage invasive species, page 20)
 - [Draft Climate 2050 Nature and Ecosystems Roadmap](#) (mentioned throughout, Strategy 1.8 Manage Invasive Species, page 82)
 - [Draft Metro 2050](#) (Action 3.2.6c and 3.2.7c)iii) currently being considered by member jurisdictions
- Other regional districts in BC provide support for regional invasive species management; some examples include:
 - [Squamish-Lillooet Regional District](#) (SLRD) supports management and control of invasive species throughout that region with \$75,000 annually, with the cost borne by taxable properties within the service area. The SLRD has passed two bylaws designed to help manage and minimize the threat of invasive species in that region. [Bylaw No. 1541-2017](#) enables the SLRD to contribute annual funding to external organizations that provide a variety of services.²
 - At least 13 other regional districts in the BC fund invasive plant management activities, including field operations, private land programs, regional coordination, and education and outreach. At least 10 other regional districts have enacted invasive species-specific bylaws. Some regional districts provide other services such as free disposal of invasive species, enforcement of Provincial invasive plant legislation or aquatic invasive species prevention programs³.
- Leadership from a regional government, representing multiple municipalities, may be a stronger voice in spurring the Provincial government to create or amend regulations that can better limit the sale and transport of invasive species, compared to advocacy from individual local governments or other agencies.

Invasive species management is a complex, integrated issue and to be successful across a region with many jurisdictions and pathways for the introduction of new invasive species, we need a strong government entity to ensure continued progress. On behalf of staff who manage invasive species within member jurisdictions, other land managers, contractors, consultants, stewardship groups, residents and all who have a role in invasive species management, **we request that Metro Vancouver a) provide administrative support for the Regional Invasive Species Working Group (RISWG), and b) work with the RISWG to explore innovative ways to better support regional invasive species management.**

² Existing MVRD bylaws (Bylaws [1164](#) and [1320](#)) use a similar model to provide mosquito control services for several member municipalities.

³ Statistics compiled by Regional Invasive Species Organizations from across BC (2021).

To: Climate Action Committee

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

Date: June 1, 2022 Meeting Date: June 10, 2022

Subject: **2022 Update on Regional District Sustainability Innovation Fund Projects**

RECOMMENDATION

That the Climate Action Committee receive for information the report dated June 1, 2022, titled "2022 Update on Regional District Sustainability Innovation Fund Projects."

EXECUTIVE SUMMARY

This report provides an update on 21 projects that were approved for funding in 2018 through to 2021 under the Sustainability Innovation Fund. The projects cover a wide variety of sustainability topics from climate action, air quality monitoring, buildings emissions reduction, to environmental protection and natural asset management. Of the 21 projects, four are now complete, one has been discontinued, and the rest are in progress. Attachment 1 provides detailed updates on the projects.

PURPOSE

To provide an update on projects funded under the Regional District Sustainability Innovation Fund.

BACKGROUND

The Regional District Sustainability Innovation Fund (Fund) was created by the Board in 2004 to provide financial support to Regional District projects that contribute to the region's sustainability. The MVRD Board adopted the *Regional District Sustainability Innovation Fund Policy* on June 27, 2014, with further amendments in 2016 and 2021, to guide the use and management of the Fund. The policy requires that the Climate Action Committee be updated on an annual basis on the deliverables, outcomes and measurable benefits of the projects receiving funding.

This report presents an update on projects that have not yet been reported as complete to the Climate Action Committee, including status, amount spent, and project outcomes.

STATUS OF SUSTAINABILITY INNOVATION PROJECTS (APPROVAL YEARS: 2018 – 2021)

The table below provides summary information on the status of each project. Additional details are provided in the attachment. Updates on a number of the projects have been provided to the Climate Action Committee on an individual basis in previous meetings.

Project	Approval Year	Amount Approved	Status
LumiAir: Lighting your path to Clean Air	2018	\$140,000	Complete
Air Aware: Air Quality and Citizen Science	2018	\$95,000	Complete
Climate Literacy Modules	2019	\$160,000	In progress
Targeted Invasive Plant Grazing in Metro Vancouver	2020	\$150,000	Discontinued
Using eDNA Sampling Technology in Regional Parks	2020	\$68,000	Complete
Preventing Smoke Emissions from Agricultural Waste Management	2020	\$140,000	In progress
Clean Air for Students and Schools (CLASS)	2020	\$200,000	In progress
Mobile Monitoring of Fugitive and Other Industrial Air Emissions with "Flying Labs"	2020	\$100,000	In progress
Building Resilience: Exploring the Potential of Renewable Energy Building Infrastructure	2020	\$200,000	In progress
Net-Zero Feasibility Study for Welcher Affordable Housing Development	2020	\$160,000	Complete
Step Code Implementation Impacts for Building Envelope Rehabilitation of Existing Buildings	2020	\$90,000	In progress
Assessment of Carbon Capture Technology in the Metro Vancouver Region	2021	\$200,000	In progress
Lights, Camera, Climate Action!	2021	\$200,000	In progress
Sharing Data for Zero Emission Buildings (SDZEB)	2021	\$200,000	In progress
Responding to the Climate Emergency: Enhanced Stakeholder Engagement	2021	\$200,000	In progress
Social and Community Data Land Use Model	2021	\$60,000	In progress
Regional Land Use Assessment	2021	\$200,000	In progress
Housing Retrofit Evolution – Pembina Institute Reframed Initiative	2021	\$200,000	In progress
Managing Capacity and Reducing Emissions: Real-time Parking Availability in Regional Parks	2021	\$300,000	In progress
Natural Asset Management in Regional Parks	2021	\$160,000	In progress
Promoting Peatland Recovery in Areas Affected by Wildfire in Burns Bog Ecological Conservancy Area	2021	\$199,000	In progress

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The projects summarized in this report had funding approved by the MVRD Board from 2018-2021. The disbursements of funds were made in accordance with the applicable *Sustainability Innovation Fund Policy* that governs the use and management of the Funds.

The table below outlines the funding approved and the amount spent to date for each project. Any unspent funds for completed projects remain in the Sustainability Innovation Fund reserve.

Project	Total Amount of Funding Approved	Amount Spent (as of April 30, 2022)
2018 Approval Year		
LumiAir: Lighting your path to Clean Air	\$140,000	\$133,609
Air Aware: Air Quality and Citizen Science	\$95,000	\$70,000
2019 Approval Year		
Climate Literacy Modules	\$160,000	\$100,000
2020 Approval Year		
Targeted Invasive Plant Grazing in Metro Vancouver	\$150,000	\$27,000
Using eDNA Sampling Technology in Regional Parks	\$68,000	\$68,000
Preventing Smoke Emissions from Agricultural Waste Management	\$140,000	\$112,000
Clean Air for Students and Schools (CLASS)	\$200,000	\$0
Mobile Monitoring of Fugitive and Other Industrial Air Emissions with "Flying Labs"	\$100,000	\$19,260
Building Resilience: Exploring the Potential of Renewable Energy Building Infrastructure	\$200,000	\$0
Net-Zero Feasibility Study for Welcher Affordable Housing Development	\$160,000	\$160,000
Step Code Implementation Impacts for Building Envelope Rehabilitation of Existing Buildings	\$90,000	\$0
2021 Approval Year		
Assessment of Carbon Capture Technology in the Metro Vancouver Region	\$200,000	\$0
Lights, Camera, Climate Action!	\$200,000	\$18,396
Sharing Data for Zero Emission Buildings (SDZEB)	\$200,000	Est. \$20,000
Responding to the Climate Emergency: Enhanced Stakeholder Engagement	\$200,000	Est. \$20,000
Social and Community Data Land Use Model	\$60,000	\$55,452
Regional Land Use Assessment	\$200,000	Est \$25,000
Housing Retrofit Evolution – Pembina Institute Reframed Initiative	\$200,000	\$0
Managing Capacity and Reducing Emissions: Real-time Parking Availability in Regional Parks	\$300,000	\$38,315
Natural Asset Management in Regional Parks	\$160,000	\$5,000
Promoting Peatland Recovery in Areas Affected by Wildfire in Burns Bog Ecological Conservancy Area	\$199,000	\$30,081

The balance in the Regional District Sustainability Innovation Fund at December 31, 2021 was \$11.5 million.

CONCLUSION

This report has provided an update on twenty-one projects funded under the Regional District Sustainability Innovation Fund. The projects cover a wide range of topics including climate action, greenhouse gas emissions reduction, environmental monitoring and protection, and natural asset management. The Sustainability Innovation Funds were created by the Board in 2004 to provide financial support to utility or Regional District projects that contribute to the region's sustainability.

Attachment

Update on Regional District Sustainability Innovation Fund projects

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UPDATE ON REGIONAL DISTRICT SUSTAINABILITY INNOVATION FUND PROJECTS

LumiAir: Lighting your path to Clean Air: Complete

The LumiAir project aims to engage and educate the public through a thought-provoking and accessible visual display of air quality. The display allows the public to see a visual representation of air contaminant levels collected at Metro Vancouver air quality monitoring stations in their community.

In the first phase of the project, preliminary designs were developed, and focus groups were conducted to obtain public feedback that was incorporated into the final design. The second and final phase included the build and configuration of the display, which includes a touchscreen interface, kiosk display, computer, and Metro Vancouver branding.

The first deployment of LumiAir was at Metro Vancouver's PNE display during the summer of 2021, which gave the public the opportunity to interact with it. The display shows real-time air quality monitoring data, and comparisons to scenarios that represent community exposure during a wildfire smoke day, a hot summer day with elevated ground-level ozone concentrations, and regional air quality from decades ago. Based on feedback from the public and staff, final changes were made to the display and the project is now complete.

Air Aware: Air Quality and Citizen Science: Complete

Air Aware aims to understand the strengths and limitations of small, low-cost, air quality sensors; support the public in the appropriate use of these sensors; and examine the sensors' potential to augment Metro Vancouver's air monitoring network. Both phases are complete: staff co-located sensors at Metro Vancouver's air quality monitoring stations to compare their performance to standard instruments used in Metro Vancouver's air quality monitoring network and then lent sensors to a number of volunteer residents to learn about their experience with them. Staff then created and published a website to provide guidance to anyone interested in using small air sensors. In parallel with the website, staff completed a technical report to summarize Metro Vancouver's research and evaluation of selected small sensors. The report will be posted on the Air Aware website this summer (2022).

Key outcomes:

- Deployed air sensors with 12 volunteers and gathered feedback on their experience;
- Completed first and second co-location of air sensors at Metro Vancouver's air monitoring stations;
- Completed technical report, including all data analysis; and
- Published Air Aware webpages: <http://www.metrovancover.org/services/air-quality/action/air-aware/Pages/default.aspx>

Using eDNA Sampling Technology in Regional Parks: Complete

Environmental DNA (eDNA) sampling is a relatively new survey technique that relies on the detection of genetic materials collected from water or soil and analyzed in a laboratory. This emerging method uses less effort than traditional sampling, is more cost-effective, and is far less invasive to sensitive fish and wildlife species. This project aimed to help better understand the presence and distribution of key aquatic species to inform park management and help further the use of this new technology to support ecosystem resilience in the region.

Over the two years the project took place (2020-2021), a total of 8 parks were sampled for 9 different species of interest. Sensitive species such as coho salmon (*Oncorhynchus kisutch*) or species at risk such as coastal cutthroat trout (*O. clarkii calrkii*) were identified in many of the parks streams and waterways. Blue-listed red-legged frog (*Rana aurora*) DNA was found in two new ponds that were created or enhanced through restoration efforts and red-listed Salish sucker (*Catostomus sp. cf. catostomus*) DNA was identified at a previously unknown site. This project allowed for the development of two new primers for aquatic species of interest. These were developed with local experts and in cooperation with the Helbing Lab at the University of Victoria. These primers can now be used by anyone wanting to sample for these species in the region. The Salish sucker and Oregon fairy shrimp (*Branchinecta lynchi*) primers are complete and ready for public use.

The data collected through this project is already providing valuable information that will aid in park management decision-making and adaptive management strategies. It is informing future restoration projects and helping to enhance habitats for species at risk to support and boost populations in regional parks. This information has allowed for the better management of these species and their habits within parks, and this contributes to the ecological health of the region.

Climate Literacy Modules: In Progress

Improving climate literacy in this region will increase our collective ability to engage in climate action conversations. Research indicates high concern for climate change, but low knowledge and confidence in speaking about solutions. This project creates a toolkit to support increasing climate literacy, for use by Metro Vancouver and member jurisdiction staff, First Nations, youth, residents and other interested parties. The output is a building block for knowledge, in the form of online climate learning modules.

The project was delayed as staff resources were shifted during the pandemic response, but brought back on track in 2021, and phase 1 launched for Earth Day 2022. Phase 2 is in progress for launch fall 2022. This is a series of 5 climate action focused modules in including food scraps recycling, walkable communities, building impacts, managing stormwater, and consumer choices. Content is prepared and has been reviewed by technical staff for accuracy, and is now moving to instructional design (transfer to on-screen). Final funds are allocated to a promotion of the literacy tool.

Targeted Invasive Plant Growing in Metro Vancouver: Discontinued

During its meeting on April 16, 2021, the Climate Action Committee received an information report summarizing the results of a consulting study that assessed the feasibility of grazing as an herbicide-free invasive plant control option in Metro Vancouver. Informed by a literature review and interviews with fourteen practitioners from across Western Canada and the US, the consultant concluded that:

- Goats would be the most suitable livestock species (compared to sheep, pigs, and cattle);
- Targeted grazing could be as effective as hand pulling or mowing for Himalayan blackberry, giant hogweed, English and Irish ivies, Himalayan balsam, Himalayan blackberry, purple loosestrife, Scotch broom, and wild chervil;
- Similar to other control methods, repeated grazing would be required for long term control.

Compared to other control methods, targeted grazing would be:

- 2-4 times costlier (over \$718,000 for a 3-year pilot);
- More logistically complex (e.g. part-time coordinator, shelter, fencing, water, guardian dog management, penning livestock for 3-4 days prior to moving off site to prevent spread of viable seed through faeces, etc.); and

- 2-5 times more carbon-intensive (due a lack of local trained herds in the Lower Mainland and the need to transport herds from other areas of BC or Alberta).

In search of a local herd, staff contacted the BC Goat Association and the Fraser Valley Goat Breeders Association who shared Metro Vancouver's inquiry with their members. Two local hobby farmers reached out for more information, but neither were experienced shepherds with trained herds. Herd training and shepherding expertise are imperative to maintain animal welfare, manage site logistics, reduce off-target grazing, and minimize damage in sensitive ecosystems. Consequently, staff recommended discontinuing this SIF project and the remaining \$123,000 in the project budget was left unspent, remaining in the SIF reserve.

Preventing Smoke Emissions from Agricultural Waste Management: In Progress

Open-air burning of vegetative debris is a source of air contaminants harmful to human health and environment. This project was initiated in 2020 to study alternatives to open-air burning for managing agricultural vegetative debris in the Metro Vancouver region. The study findings identified barriers to using alternative methods of vegetative debris disposal for farmers in the region, which included cost, complexity, practical feasibility, biosecurity considerations, and equipment availability.

Work has continued for the second phase of the project in 2021 to develop a multi-language Best Practices Guide for farm operators in Metro Vancouver. The purpose of the Guide is to provide practical and easy-to-use information on alternatives to open-air burning practices of agricultural vegetative waste disposal in an effort to reduce air emissions. The Guide is tailored toward operators who are involved in crop pruning and removal, field renovations, and land or brush clearing on farmland in Metro Vancouver. The local agriculture sector, including farmers and representatives of farming associations, educational institutions, and BC Ministry of Agriculture, Food and Fisheries have been involved and provided input in the development of the Guide. This project is currently expected to be completed by the end of 2022.

Clean Air for Students and Schools (CLASS): In Progress

Clean Air for Students and Schools (CLASS) will pilot actions to reduce exposure to traffic-related air pollution in and around schools. Teachers, students, and parents will be involved in the project so they can learn more about their exposure to air pollution and how to measure it. The project has 3 parts:

1. Partnering with schools in the Metro Vancouver region to assess the area for sources of traffic-related air pollution and identify ways to reduce exposure to them.
2. Piloting actions to reduce exposure to traffic-related air pollution and involving teachers, students, and parents in measuring air quality using small, low-cost air sensors.
3. Creating a report and teaching tools for other schools on potential ways to reduce exposure to traffic-related air pollution.

Due to the COVID-19 pandemic, and limited access to schools and teachers' increased workload during this time, this project was put on hold in 2020 and 2021. While CLASS was on hold, staff researched other programs involving air quality at schools, such as TransLink's Youth Travel Strategy and Sonoma Technology's Kids Making Sense program, to learn about potential partnerships and existing programs' successes and challenges. Staff are also updating the scope of work to allow for more opportunities for schools to provide input on the project.

Mobile Monitoring of Fugitive and Other Industrial Air Emissions with "Flying Labs": In Progress

The purpose of the "Flying Labs" project was to assess the cost and feasibility of mobile monitoring using drone-mounted small sensors to measure air contaminants from emissions sources in the region that are difficult to access or located in hazardous environments. Drone flights were conducted carrying small sensors to measure air contaminant concentrations in three locations within the Metro Vancouver region in the summer of 2021. Results revealed challenges in collecting data of sufficient quality to effectively assess emissions using drone-based monitoring platforms equipped with the relatively new technology of small sensors. Findings of the test flights and proposed next steps were summarized in a report to the Climate Action Committee titled "Mobile Air Quality Monitoring Using Drone-Based Sensors", dated February 8, 2022. Staff are building on the findings of the first phase of this project and evaluating other types of mobile monitoring equipment to assess air emissions in 2022.

Building Resilience: Exploring the Potential of Renewable Energy Building Infrastructure: In Progress

The Renewable Energy Building Infrastructure – Cost Benefit Analysis & Pilot Project is investigating types of renewable energy infrastructure for domestic hot water in affordable housing. Domestic hot water accounts for approximately 30% of building greenhouse gas emissions and this study will help Metro Vancouver Housing to meet Metro Vancouver's *Climate 2050* strategy target of a 45% reduction in greenhouse gas emissions by 2030.

The study will be separated into two phases. The first phase is underway with a Request for Proposals (RFP) to retain a consultant for this study. The RFP process will be conducted over spring/summer 2022.

1. **Phase 1 – High Level Review:** This phase will investigate sustainable energy systems and complete a high level cost-benefit analysis. It will include a review of existing domestic hot water renewable energy options for new construction and existing multifamily buildings. For example, it will explore solar panels, solar thermal, geothermal and SHARC – recovering heat from waste water. The concluding analysis will consider embodied emissions and the end of life of the systems.
2. **Phase 2 – In-Depth Study and Pilot Project Planning:** In the second phase, the consultant will focus on mutually selected technologies from Phase 1 to study in greater depth. A business case will be created for their inclusion in cost sensitive affordable housing developments. The business case will explore the potential issues and tradeoffs of performance, energy conservation, greenhouse gas emissions, operational and embodied, life cycle, end of life. This report will also explore the technical considerations of what would be involved to add these technologies to a development project (e.g. mechanical, structural, electrical, architectural). As a part of the business case, the study will also consider a cost analysis, include revenue potential and state of the market (e.g. PV panel energy sold back to grid; dollars per kw hour, etc.). The final component of this work will be to plan a pilot project for a mutually selected technology from this study.

The business case will be shared with members, partners, and housing providers across the region to facilitate change in building energy infrastructure and reduce carbon emissions from housing.

Net-Zero Feasibility Study for Welcher Affordable Housing Development: Complete

The NetZero Feasibility Study for the Welcher Affordable Housing Development was to study design and construction strategies to reduce the operational energy consumption as well as provide on-site renewable energy generation capability for MVHC's Welcher Avenue housing development project. With a project baseline energy performance target of BC Energy Step Code 3, this results of this study revealed a pathway to reducing operational energy consumption of the building by 50% and reducing operational

greenhouse gas emissions by 87%. Ultimately, the project team decided to implement these strategies into the design drawings and specifications in support of an application for grant funding from the Federation of Canadian Municipalities' Green Municipal Fund (FCM – GMF). In addition to making a significant contribution towards Metro Vancouver's energy and greenhouse gas emission targets, it also increases tenant affordability through reduced energy consumption costs.

In 2021, staff delivered a presentation to a global audience through the Zero Emissions Building Exchange to discuss the feasibility study process, results and insights gained. Knowledge gained from this study will serve to guide future MVHC development projects, as well assist the multi-family construction community in energy and GHG performance decision making.

Step Code Implementation Impacts for Building Envelope Rehabilitation of Existing Buildings: In Progress

The purpose of this project is to better understand the levels of the BC Building Code Step Code and its cost and performance implications for major renewals of MVHC's existing housing stock. The current BC Building Code is written for implementation with new building construction, but does not strictly apply to existing building renewals. A large portion of MVHC's existing housing projects were constructed approximately 40 years ago and many major building components (roofing, windows, cladding, etc.) are reaching the end of their service lives. The near future requirement of major capital investment into the existing housing stock creates the opportunity for performance upgrades to align with Metro Vancouver's strategies, plans and policies and the current building Step Code. An in-depth understanding of the economic and performance implications of the step code is of great interest as an affordable housing provider in the region.

This study will:

- Create a guide for making informed decisions when designing and constructing upcoming major building renewals.
- Provide insight on performance metrics (energy consumption, greenhouse gas emission).
- Provide insight on marginal and long-term maintenance costs.

Housing's Capital Maintenance team have been working with Pembina on a related project, Reframed (deep retrofits). Pembina have been working with RDH and have produced a report that contains information that will overlap well with the SIF Step Code Implementation Impacts for Building Envelope Rehabilitation of Existing Buildings research and report. Metro Vancouver Housing are working with RDH Consultants to finalize a proposal to build on the Pembina report and conduct additional research to develop the specific requirements and cost implications to achieve the various Step Code levels in existing buildings. Learnings, with respect to Step Code implementation into existing buildings, are also underway with the Pembina Reframed Workshops that have been underway for the last six months and are due to wrap up in June 2022; the findings from these workshops will be included in the RDH report. A change to the BC Building Code is coming with respect to rehabilitation of existing buildings. Metro Vancouver Housing are making efforts to collaborate with RDH and the team working on the Code upgrade to ensure information and work efforts are being shared to enhance both projects.

Assessment of Carbon Capture Technology in the Metro Vancouver Region: In Progress

The "Assessment of Carbon Capture Technology in the Metro Vancouver Region" SIF project aims to support early identification of the most suitable technological approaches for capturing and removing carbon dioxide (CO₂) as the region transitions towards carbon neutrality by 2050. The project's long-term objectives include exploring ways to accelerate deployment of technological carbon capture approaches

at industrial facilities in the Metro Vancouver region to reduce CO₂ released to the atmosphere, as well as to encourage the development of technological carbon capture sector to support the regional cleantech economy.

In 2021, staff have coordinated with various potential partners who are actively involved in carbon capture, utilization, and storage (CCUS) pathways, such as the Government of BC, UBC Clean Energy Research Centre, the Pacific Institute for Climate Solutions (PICS), Natural Resources Canada, large industrial facilities in the region, and CCUS technology accelerators. This has confirmed that while no single carbon capture technology is a 'silver bullet', a suite of CCUS technologies can play a critical role in decarbonization. Technological readiness is one of the key considerations for deployment of these technologies but other factors such as economics, market potential, overall CO₂ reduction potential, facility and process-specific requirements, proximity to carbon sources and sinks, geological conditions, as well as policy and regulatory uncertainty, are also critical in understanding the CCUS landscape and CCUS deployment in the Metro Vancouver region.

As the knowledge base for carbon capture technologies continues to grow, there is a need to apply a systemic lens to CCUS deployment and to identify other associated challenges related to captured CO₂ utilization, transport and permanent storage, which will all add a layer of complexity for CCUS deployment and appear to pose a bigger challenge in the region. Many industries and businesses, including a number of large industrial facilities in the region, have initiated work in CCUS, connecting with researchers, technology accelerators, governments and funding sources to explore CCUS for potential deployment. Staff will build on these early learnings and continue to assess technological carbon capture approaches and their potential application at industrial sites in the Metro Vancouver region.

Lights, Camera, Climate Action!: In Progress

Lights, Camera, Climate Action is a SIF project that has been undertaken to recommend alternative clean and modular power sources for portable diesel generators currently used in the film industry. This project will explore cleaner technology alternatives to the diesel generators in order to reduce GHG emissions and improve air quality, while also ensuring the alternatives recommended are viable solutions in terms of user experience, fulfilling power requirements, and being a cost effective solution. It also explores the potential of these alternatives for other users of portable diesel generators such as construction sites, food trucks and events. The second phase of the SIF project will include the implementation of a clean power alternative at a Metro Vancouver Regional Park.

Staff have hired a consultant (Green Spark Group) to conduct technical feasibility assessment including profiling the current energy use of the film industry, a preliminary assessment of possible overlap with related user groups (i.e. food trucks, events, construction), film production energy use data collection and a compilation of high frequency film sites locations in Metro Vancouver.

The technical report will be completed in 2022 and will also include a recommendation for the next phase of the project, to install a clean power alternative at a Metro Vancouver regional park site.

Sharing Data for Zero Emission Buildings (SDZEB): In Progress

The purpose of the Sharing Data for Zero Emission Buildings (SDZEB) project is to create a database that estimates the attributes and GHG emissions of detached homes, row homes and townhomes at the building level. Such a database does not currently exist, but is a foundational tool needed to design effective GHG reduction policies and retrofit programs. In February 2022, staff began working with a consultant team, project partners and other agencies on the first phase of the project. This first phase

aims to identify and obtain available buildings data that will be used to develop a suite of low carbon retrofit packages tailored to specific homes, based on attributes such as year built, heating type, size and other key design attributes. In the second phase of this project, which is expected to begin in late 2022 and continue through 2023, Metro Vancouver will continue to develop and optimize the database into a dynamic and shareable resource for local governments and other key partners. Concurrently, partnering municipalities will use the retrofit packages from phase one to develop and pilot retrofit support and incentive programs in their communities. Project partners for phase one include the Township of Langley, City of Vancouver, Regional District of East Kootenays, and BC Hydro. Partners provided \$165,022 in addition to Metro Vancouver's \$50,000 contribution for the phase one work.

Responding to the Climate Emergency: Enhanced Stakeholder Engagement: In Progress

Given the climate emergency, a public and stakeholder engagement strategy is needed that builds a constituency who will champion *Climate 2050* and the actions in it. This requires an innovative strategy, over and beyond what a normal engagement strategy would entail. And it must include innovative ways to engage new audiences (e.g., youth) to build a larger engaged and vocal constituency. In April 2022 the project team brought a report to Climate Action Committee, proposing a small 'r' roadmap for engagement on climate action for Metro Vancouver. Components of the roadmap include; messaging, engagement, collaboration and convening, involving influencers and amplifiers, and public education. Staff are working to develop this roadmap.

Social and Community Data Land Use Model: In Progress

Regional Planning initiated this project to develop a behavioural model of residential housing and neighbourhood choices in order to support future regional land use, transportation, and hazard modelling. The project will form a foundation for the behavioural model. Deliverables for this work will include:

- 1) a final report that details all relevant research, information considered, risks, opportunities, and gaps in the data;
- 2) recommendations for an additional survey and/or engagement required to support modeling;
- 3) recommendations for the development of the behavioral model, if required; and
- 4) a geospatial database containing all organized, clean, and relevant information that can be used to construct the behavioral model.

So far, the first three tasks have been finalized with stated deliverables. The only outstanding item is the last task: producing a geospatial database.

In January 2022, Modus produced a Survey and Data Collection Companies report. The report explored companies suitable to support filling in existing data gaps for the Social and Community Land Use Model. The primary data gaps identified are related to people's values / stated preferences for housing and neighbourhood choice.

In March 2022, a progress report was received. The report provides an annotated bibliography outlining key findings from a selection of literature relevant to the Metro Vancouver Social and Community Land Use study. From this selection of literature, the project team created a shortlist of common determinants for housing preference and location choice. Following the literature and dataset review, two major literature gaps and opportunities for dataset development have been identified:

- 1) an absence of available data that sufficiently captures the stated preferences, such as personal values that drive housing and location preference, behind housing and location choice; and
- 2) an absence of qualitative datasets that can be used to support stated preferences that are also contextual to the Metro Vancouver region.

In May 2022, staff received a progress report with recommendations for developing the behavior model. The research was conducted using longitudinal tax filer data through the Longitudinal Administrative Databank (LAD) and the Longitudinal Immigration Database (IMDB) to understand residents' movement choices and recent immigrants within the region.

The last phase of this project, a geospatial database, is expected to be finalized by July 2022.

Housing Retrofit Evolution – Pembina Institute Reframed Initiative: In Progress

Metro Vancouver Housing (MVH) is a member of the “Reframed” Initiative, a joint initiative of the Pembina Institute, BC Housing, BC Non-Profit Housing Association, and the City of Vancouver. Members will work together to demonstrate the technical and economic feasibility of whole-building deep resiliency retrofits that include reduction of energy use intensity by at least 50% from the pre-retrofit baseline, decarbonization, and upgrades relating to climate adaptation, seismic, and fire safety. The aim is to decarbonize building operations, eliminate climate pollution, reduce energy waste to keep the bills low and improve tenant comfort, increase resiliency to extreme weather events like heat waves, flooding, and forest fires, seismically upgrade the structures, and create healthier homes.

This project involves deep energy retrofits of 3 Metro Vancouver Housing buildings and 3 BC Housing buildings. In June 2022 the six design consultants were retained (3 by MVH and 3 by BCH) for the concept design phase. The demonstration retrofits are currently in the concept design phase whereby all six design consultant groups are working together through six months of “exploration labs” with support from technical experts on climate change, energy efficiency, and health. The design consultants are currently finalizing their designs and final presentations will be conducted in June 2022. The concept design phase and the exploration labs will be completed by July 2022. The implementation of the findings from the exploration labs (into the 3 MVH) deep energy retrofit projects will begin as soon as detailed design begins (Q3 2022) and will be complete when the construction for the three deep retrofits is completed (anticipated by the end of 2024 – permit and budget dependent).

Regional Land Use Assessment Project: In Progress

The Regional Land Use Assessment will compile information about lands and uses in the region, and will provide a unique and relevant lens to assess the land availability, capacity, and needs over the planning horizon to 2050. This work will inform long range land use policy objectives and decisions by Metro Vancouver, member jurisdictions, and other regional agencies.

During 2021, Metro Vancouver staff developed and refined the scope of the project and issued a Request for Consultants. In early 2022 a consultant was retained. The technical work is currently underway and scheduled to be completed by the end of the year.

Initial work comprised establishing the project methodology and requesting current Official Community Plan land use designations (or equivalent) from the region’s member jurisdictions in GIS format. This data will be used by the consultant as the basis for the Regional Land Use Assessment project to create a standardized set of general land use classifications.

Managing Capacity and Reducing Emissions: Real-time Parking Availability in Regional Parks: In Progress

This project will offer real-time information on when parking lots are full prior to visitors leaving their homes. The deliverable allows visitors to consider how best and when to access the park given current levels of visitation. In turn, visitor trip planning helps alleviate congestion at peak times and contributes towards reducing the carbon footprint of a park. The purpose of this project is to develop a real-time

parking stall availability monitoring tool for public use using remote sensing devices, novel or customized software, as well as a corresponding data analysis and digital platform for public communication/reporting.

Phase I of the Feasibility Study is complete. The study focused on research and technology exploration and innovation opportunities to inform creation of a new parking stall capacity monitoring program. Investigations and the subsequent report outlined opportunities to adapt existing technology or install new kinds of data loggers, cameras or sensors, and develop a customized algorithm with supporting software for use in real-time monitoring of vehicle parking availability at selected park sites.

Phase II (technology acquisition and deployment) is now underway. Phase II includes strategically placing sensor/camera installations and developing the supporting software platform for rapid parking availability analysis. Throughout 2022, software will be selected/developed, along with development of website and/or smart device applications which tracks parking demand and stall occupancy duration.

Natural Asset Management in Regional Parks: In Progress

The 'Natural Asset Management in Regional Parks' project seeks to make significant advances in the integration of natural assets to the regional parks asset management program. In support of initiating this project, staff developed the first Natural Assets Inventory for regional parks using existing ecosystem mapping and supporting information. This process highlighted deficiencies in the current spatial data for regional parks that needed to be corrected before moving forward with the work outlined in the SIF proposal. Updates are planned for regional parks Terrestrial Ecosystem Mapping, Sensitive Ecosystem Inventory mapping, and Conservation Value mapping during 2022. Updates include adding in newly acquired parkland, improving wetland mapping, and adding additional detail to certain ecosystem classes. Once completed, the main body of work proposed through SIF will be advanced.

One aspect of the SIF proposal involved conducting pilot projects to test different approaches to understanding ecological function and measuring ecosystem services. An opportunity arose in 2021 to advance an innovative pilot project to develop a LiDAR based individual tree inventory for Kanaka Creek Regional Park, working with forest management consultants (Forsite Consultants Ltd.) and leveraging the help of BCIT students to provide field data collection. BCIT are now using the highly detailed tree dataset to generate an ecosystem services assessment using i-Tree, a popular tool created by the USDA Forest Service for assessing forests and community trees. Results are expected soon. Results from this work, and additional pilots, will be considered alongside each other for usability, accuracy, ease of generation, and other factors.

Promoting Peatland Recovery in Areas Affected by Wildfire in Burns Bog Ecological Conservancy Area: In Progress

The purpose of this project is to reduce lodgepole pine regeneration in an area of the Burns Bog Ecological Conservancy Area and promote recovery of plant communities to restore and maintain peatland function. The 37 hectare project area was developing extremely dense pine seedling stands after wildfire ripped through the area in 2016. Through shading, rain interception, enhanced evapotranspiration, and root systems piercing the peat mass, tree cover has enormous potential to draw down the water table causing peat compaction, decomposition and the decline of open bog plant species. Furthermore, these forest stands increase wildfire risk not only in interface areas but also across the entire forested portion of the conservancy area. The encroachment and establishment of forest communities within Burns Bog is of significant concern.

During 2021 2.5 ha of seedlings were removed from the project area in October and November. Work continues this year with an additional 3.5 ha removed to date. In total, 9 ha of seedlings have been removed from the burn zone with some being accomplished in a pilot study between 2018 and 2020. It is anticipated that just under half of the project area will have been cleared of seedlings by the end of 2022.

As part of the project, 3 study sites were established to measure soil greenhouse gas exchange; one in the 2016 wildfire zone undergoing seedling removal, one in a 2005 wildfire site that has not had seedling removal and one at an unburned control site. Each site consists of three areas representing specific pre fire ecosystem types. Four greenhouse gas measurement chambers were installed in each of the sampling sub sites at which monthly samples were extracted since October 2021. Pre-treatment sampling will continue to September 2022. A preliminary report on greenhouse gas study results has been received.

This study will continue to assess the effect of seedling removal on greenhouse gas exchange for several years post seedling removal. A vegetation monitoring program established after the 2016 fire will also continue as part of the research program. It is anticipated that the combination of pine seedling removal, bog vegetation recovery and rising water table elevation will contribute to meeting land management and ecological objectives.

To: Climate Action Committee

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

Date: May 23, 2022 Meeting Date: June 10, 2022

Subject: **BC Lung Foundation – Contribution Agreement 2023-2025**

RECOMMENDATION

That the MVRD Board approve a three-year Contribution Agreement for Metro Vancouver to provide funding to the BC Lung Foundation in the amount of \$35,000 per year for the term January 1, 2023 to December 31, 2025, as presented in the report dated May 23, 2022, titled “BC Lung Foundation – Contribution Agreement 2023 - 2025”.

EXECUTIVE SUMMARY

The BC Lung Foundation is a key partner in Metro Vancouver’s air quality and climate change programs, linking regional programs and policies to lung health, facilitating dialogue, and advancing outreach and awareness. Staff are proposing to enter into a formal funding relationship with BC Lung, through a three year contribution agreement in the amount of \$35,000 per year. The funding will support key deliverables as specified in the agreement, such as an annual air quality and health workshop, an annual state of the air report, and the operation of an interagency committee comprised of representatives from environment and health departments from multiple orders of government as well as academia. The agreement also requires the submission of an annual report from BC Lung summarizing activities and deliverables.

PURPOSE

To seek MVRD Board approval of a three-year Contribution Agreement with the BC Lung Foundation.

BACKGROUND

The BC Lung Foundation (BC Lung), formerly known as the BC Lung Association, is a key partner in Metro Vancouver’s air quality and climate change programs. BC Lung has provided input and expertise to key air quality and climate change policies, facilitated dialogue and engagement to connect air quality issues with human health, and played a key role in outreach and education.

This report provides an overview of the terms of a proposed contribution agreement between Metro Vancouver and BC Lung and seeks Board approval to enter into the agreement.

BC LUNG FOUNDATION

The BC Lung Foundation (BC Lung) is a non-profit and volunteer-based health organization, and registered charity that relies on donations to support lung health research, education, patient support, and advocacy. BC Lung has supported lung patients and their caregivers, funding vital respiratory health initiatives, educating British Columbians on safeguarding lung health, and advocating for policies that protect air quality. A key aspect of the partnership between Metro

Vancouver and BC Lung has been the forging of a strong connection between lung health and air quality, and in recent years, the impacts of climate change.

CONTRIBUTION AGREEMENT

Metro Vancouver and BC Lung have a long standing and productive working relationship. Metro Vancouver's contributions to the work of BC Lung to date has been largely in-kind, as well as through collaboration on contracted research projects. Staff are proposing to enter into a formal funding relationship, at the request of BC Lung as their funding situation has changed in recent years. Metro Vancouver's funding will continue to support BC Lung's work in the Metro Vancouver region, while BC Lung will seek funding from other sources for its work outside of the region.

Attachment 1 is a draft Contribution Agreement developed for the Board's consideration, and proposes Metro Vancouver contributions to BC Lung in the amount of \$35,000 per year, for a three-year period.

Term

The term of the proposed agreement is three years, from January 1, 2023 to December 31, 2025. Funding would be included in each annual budget over this period, and would be provided to BC Lung for each of the three years without additional approval from the Board. Annual funding would be provided in one installment on or before March 31 of each funding year.

Activities and Services

Schedule A of the agreement sets out the activity areas over the three-year term. Key activity areas for BC Lung include:

- Act as secretariat of the **Air Quality and Health Steering Committee**, a multi-agency committee comprising representatives of federal and provincial environment, and health departments, the BC Centre for Disease Control, regional health authorities, Fraser Valley Regional District, Metro Vancouver, and academia. The Committee meets several times per year and is currently co-chaired by Health Canada and Metro Vancouver.
- Publish the **State of the Air Report**, which provides an annual snapshot of key air quality issues and a summary of air quality across the province, including within the Metro Vancouver Regional District.
- Plan and deliver the annual **Air Quality and Health Workshop**, which brings together air quality and environmental health experts and policymakers to share new insights regarding priority public health issues as they pertain to air quality and health.
- Coordinate and host **regular lecture series and webinars**, which provide educational content to the public on current issues related to air quality and public health.
- Coordinate development of and deliver **public education materials** related to air quality, health, and climate change such as information related to wildfire smoke, wood smoke, extreme weather, and other issues and their effects on health, ecosystems and visual air quality.

BC Lung would be required to provide an annual report to Metro Vancouver on or before January 31 of each year. The annual report would summarize the Foundation's activities and outcomes for the

previous year. Recognizing the potential for emergence of new activity areas or priorities, the Agreement includes a mechanism for annual work planning and identification of priorities, and the ability to modify service lists within the term of the Agreement.

ALTERNATIVES

1. That the MVRD Board approve a three-year Contribution Agreement for Metro Vancouver to provide funding to the BC Lung Foundation in the amount of \$35,000 per year for the term January 1, 2023 to December 31, 2025, as presented in the report dated May 23, 2022, titled “BC Lung Foundation – Contribution Agreement 2023 – 2025”.
2. That the MVRD Board receive for information the report dated May 23, 2022, titled “BC Lung Foundation – Contribution Agreement 2023-2025” and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

If the Board approves Alternative 1, the Contribution Agreement funding would be supported through the air quality program budget and would commit Metro Vancouver to three years of funding to the BC Lung Foundation in the amount of \$35,000 each year.

If approved by the Board, the funding for the 2023 contribution to the BC Lung Foundation would be included in the 2023 budget approval process, and considered for 2024 and 2025 as part of the 2023-2027 financial plan.

Metro Vancouver staff participation in BC Lung Foundation activities is already included in approved budgets within the air quality program area.

CONCLUSION

The BC Lung Foundation is a key partner in Metro Vancouver’s air quality and climate change programs, linking regional programs and policies to lung health, facilitating dialogue, and advancing outreach and awareness. Staff recommend Alternative 1, to enter into a formal funding relationship with BC Lung, through a three year contribution agreement in the amount of \$35,000 per year, which will support key deliverables as specified in the agreement.

Attachment

1. Draft Contribution Agreement between Metro Vancouver Regional District and BC Lung Foundation

53001207

CONTRIBUTION AGREEMENT

THIS AGREEMENT made the _____ day of _____, 2022

BETWEEN:

METRO VANCOUVER REGIONAL DISTRICT

4515 Central Boulevard
Burnaby, BC
V5H 0C6

(“MVRD”)

AND:

BRITISH COLUMBIA LUNG FOUNDATION

2675 Oak Street
Vancouver, BC
V6H 2K2

(the “Recipient”)

WHEREAS:

- A. The Recipient is a charitable non-profit organization advocating for healthy lungs and healthy air. One of the objectives of the Recipient is to support medical research and education programs aimed at respiratory disease;
- B. The Recipient has requested to receive, and MVRD has agreed to provide to the Recipient, funds for a purpose beneficial to the community or an aspect of the community; and
- C. Section 263(1)(c) of the *Local Government Act* provides that MVRD may provide assistance for the purpose of benefiting the community or any aspect of the community.

NOW THEREFORE, in consideration of the premises, terms and conditions contained in this Agreement (the receipt and sufficiency of which are hereby acknowledged), the parties hereto covenant and agree as follows:

1.0 INTERPRETATION

In this Agreement the following terms have the following meanings:

“**Activities**” means, collectively, the services, programs and initiatives set out in Schedule “A” of this Agreement.

“Agreement” means this agreement and the schedules attached hereto, as may be amended by the parties from time to time.

“Funds” has the meaning set forth in Section 4.3.

“Indemnified Parties” has the meaning set forth in Section 10.1.

“Term” has the meaning set forth in Article 2.0.

2.0 TERM

The term of this Agreement will commence on January 1, 2023 and end on December 31, 2025 (the **“Term”**), unless otherwise terminated as provided herein.

3.0 PURPOSE

- 3.1 The Recipient shall only use the Funds to carry out the Activities in accordance with the terms and conditions of this Agreement and for no other purpose.
- 3.2 The Recipient shall, at MVRD’s written request, provide all information required to enable MVRD to evaluate, using the criteria set out in Schedule “B” hereto, the Activities and the Recipient’s use of the Funds.
- 3.3 The Recipient will carry out the Activities under the terms of this Agreement subject to any applicable bylaws of MVRD and applicable legislation and regulations and in a manner consistent with any applicable guidelines provided by MVRD from time to time.
- 3.4 MVRD must approve of any changes to the Activities in writing prior to the changes being made during the Term.
- 3.5 If the Recipient makes any changes to the Activities without the prior approval of MVRD pursuant to Section 3.4, MVRD may, in its sole and absolute discretion, immediately terminate this Agreement. Upon termination by MVRD in accordance with this Section 3.5, the Recipient shall immediately return any Funds that have not been spent on carrying out the Activities. The Recipient will provide a full accounting of all Funds not returned.

4.0 FUNDING AND PAYMENT

- 4.1 MVRD has agreed to provide the Funds to support the Activities, in accordance with Section 4.3.
- 4.2 The payment of Funds is subject to MVRD being satisfied, in its sole and absolute discretion, that the Recipient will carry out the Activities in accordance with all requirements under this Agreement.
- 4.3 MVRD shall pay by cheque to the Recipient the sum of \$35,000 per annum (the **“Funds”**) on or before March 31 of each year of the Term.

5.0 REPORTING

The Recipient shall present an annual report to MVRD on or before January 31 of the year following the year in which the Funds were received. The annual report shall include at a minimum:

- (a) a summary of operating results showing revenues and expenditures to December 31 of the preceding year;
- (b) a brief narrative summary reviewing the goals, objectives and the results achieved for the year, including the challenges and significant issues addressed; and
- (c) an outline of the annual work plan and priorities for the current year.

6.0 TAXES

It is the Recipient's responsibility to determine whether or not it has to be registered for GST and/or PST purposes. The amount of funding provided in this Agreement includes any GST and/or PST which may be payable by MVRD. Any liability for GST and/or PST required in respect of this Agreement will be the responsibility of the Recipient.

7.0 SEPARATE FUNDS AND FINANCIAL STATEMENTS

- 7.1 The books of account of the Recipient shall be kept in accordance with Generally Accepted Accounting Practices.
- 7.2 The Funds shall be accounted for separately from any other funds of the Recipient and shall be separated in its books of account.
- 7.3 MVRD may, in its sole and absolute discretion, require that the Recipient maintain a separate bank account for the Funds and revenues from the Activities and to keep all operating revenues and expenditures pursuant to this Agreement separate from other activities that may be undertaken by the Recipient from time to time.

8.0 RIGHT OF AUDIT

At any time during the Term, MVRD may give to the Recipient written notice that it desires its representative to examine the books of account of the Recipient, and the Recipient shall produce for examination to such representative within ten (10) days after receipt of such notice, its books of account, and the said representative shall have a right of access to all records, documents, books, accounts and vouchers of the Recipient and shall be entitled to require from the directors and officers of the Recipient such information and explanations as, in the representative's opinion, may be necessary to enable the representative to report to the board of directors of MVRD on the financial position of the Recipient.

9.0 PUBLICATION AND COMMUNICATIONS

- 9.1 Except as specifically permitted under Section 9.2, the Recipient will not use the logos or name of MVRD, or the names of MVRD's staff, with respect to the Activities or anything arising therefrom without the prior written consent of MVRD.
- 9.2 Unless otherwise requested by MVRD, the Recipient will expressly acknowledge the funding support and assistance of MVRD towards the Activities in all publications, public announcements, presentations and other forms of release or communications relating to the Activities, using the following statement or such other modified statement as provided or agreed to by MVRD:

"This project was funded with assistance from the Metro Vancouver Regional District."

10.0 INDEMNITY AND RELEASE

- 10.1 The Recipient shall indemnify and save harmless MVRD, its elected officials, appointed officers, employees and agents (collectively, the "**Indemnified Parties**") from and against all actions, causes of action, claims, liabilities, damages, losses, costs, legal fees, fees, fines, charges or expenses which the Indemnified Parties or any of them may incur, be threatened by or be required to pay by reason of or arising out of the Activities carried out by the Recipient, the Recipient's use of any facility related to the Activities, the breach by the Recipient of any term of this Agreement, or the Recipient's contravention of any law, enactment or regulation of a federal, provincial or local government.
- 10.2 The Recipient hereby releases the Indemnified Parties from and waives any claim, right, remedy, action, cause of action, loss, damage, expense, fee or liability which the Recipient may have against the Indemnified Parties or any of them in respect of an act of MVRD in relation to this Agreement, except insofar as such claim, right, remedy, action, cause of action, loss, damage, expense, fee or liability arises from the negligence or willful misconduct of the Indemnified Parties or any of them.
- 10.3 This Article 10.0 shall survive the expiry or sooner termination of this Agreement.

11.0 TERMINATION

- 11.1 MVRD may terminate this Agreement immediately without notice to the Recipient in the event that:
- (a) the Recipient, in the sole and absolute discretion of MVRD, fails to perform any of its obligations or covenants hereunder and such failure continues beyond thirty (30) days from delivery by MVRD to the Recipient of written notice specifying the failure and requiring remedy thereof;
 - (b) the Recipient makes an assignment in bankruptcy or is declared bankrupt; or

- (c) MVRD, in its sole and absolute discretion, determines that the Funds are not being used to carry out the Activities or are being used in a manner contrary to the public interest.
- 11.2 MVRD may terminate this Agreement for any reason whatsoever upon giving ninety (90) days' written notice to the Recipient.
- 11.3 If MVRD terminates this Agreement for any reason, the Recipient shall immediately return any Funds that have not been spent on carrying out the Activities. The Recipient will provide a full accounting of all Funds not returned.
- 11.4 The Recipient may terminate this Agreement upon giving thirty (30) days' written notice to MVRD should the Recipient, for any reason, be unable to meet its obligations with respect to the carrying out of the Activities as set forth in this Agreement.
- 11.5 Upon termination by the Recipient, the Recipient shall immediately return any Funds that have not been spent on carrying out the Activities. The Recipient will provide a full accounting of all Funds not returned.

12.0 NOTICE

- 12.1 Unless otherwise specified herein, any notice required to be given under this Agreement by any party shall be in writing and shall be deemed to have been given if mailed by prepaid registered mail, sent by email transmission, or delivered by personal delivery to the address of the other party as set forth below or at such other address as the other party may from time to time direct in writing, and any such notice shall be deemed to have been received if mailed, seventy-two (72) hours after the time of mailing, and if emailed or delivered by personal delivery, upon the date of email transmission or delivery. If normal mail service is interrupted by strike, slow down, force majeure or other cause, then a notice sent by the impaired means of communication will not be deemed to be received until actually received, and the party sending the notice must utilize any other such services which have not been so interrupted or must deliver such notice by personal delivery in order to ensure prompt receipt thereof.

To MVRD:

Metro Vancouver Regional District
4515 Central Boulevard
Burnaby, BC
V5H 0C6

Attention: Roger Quan
Director, Air Quality and Climate Change
Email: Roger.Quan@metrovancover.org

To the Recipient:

British Columbia Lung Foundation
2675 Oak Street
Vancouver, BC
V6H 2K2

Attention: Christopher Lam
President & CEO
Email: lam@bclung.ca

13.0 AUTHORIZATION

The Recipient hereby represents and warrants that the execution and delivery of this Agreement and the completion of the transactions contemplated herein have been duly and validly authorized by all necessary corporate action on the part of the Recipient, and this Agreement constitutes a legal, valid and binding obligation of the Recipient enforceable against the Recipient in accordance with its terms and the persons signing this Agreement on the Recipient's behalf are duly authorized to do so.

14.0 TIME

Time is of the essence in this Agreement.

15.0 BINDING

In consideration of being granted the Funds, the Recipient agrees to be bound by the terms and conditions of this Agreement, and if the Recipient represents a group or organization, the Recipient agrees to inform all responsible persons associated with the group or organization of the terms and conditions of this Agreement.

16.0 ASSIGNMENT

The Recipient may not assign this Agreement, in whole or in part, without the prior written consent of MVRD.

17.0 ENUREMENT

This Agreement will enure to the benefit of and be binding upon the parties hereto and their respective heirs, administrators, executors, successors and permitted assigns.

18.0 RELATIONSHIP OF PARTIES

No provision of this Agreement shall be construed to create a partnership, joint venture, employer-employee, landlord-tenant, or principal-agent relationship between the parties. Neither party will represent or hold itself out to be an agent of the other party and neither

party will have any authority to act for or assume any obligations or responsibilities, express or implied, on behalf of the other party.

19.0 WAIVER

The waiver by a party of any failure on the part of the other party to perform in accordance with any of the terms or conditions of this Agreement shall not be construed as a waiver of any future or continuing failure, whether similar or dissimilar.

20.0 AMENDMENTS

This Agreement may not be modified or amended except by the written agreement of the parties.

21.0 WHOLE AGREEMENT

The whole agreement between the parties with respect to the subject matter hereof is set forth in this document and no representations, warranties or conditions, express or implied, have been made other than those expressed herein.

22.0 LANGUAGE

Wherever the singular, masculine and neuter are used throughout this Agreement, the same is to be construed as meaning the plural or the feminine or the body corporate or politic as the context so requires.

23.0 CUMULATIVE REMEDIES

No remedy under this Agreement is to be deemed exclusive but will, where possible, be cumulative with all other remedies at law or in equity.

24.0 GOVERNING LAW AND JURISDICTION

This Agreement shall be construed in accordance with and governed by the laws of the Province of British Columbia and the federal laws of Canada applicable therein, and the parties hereby attorn to the exclusive jurisdiction of the courts of the Province of British Columbia.

25.0 COUNTERPARTS

This Agreement may be executed in counterparts, each of which will be deemed to be an original and all of which taken together will be deemed to constitute one and the same instrument. Delivery of an executed signature page to this Agreement by a party by electronic transmission will be as effective as delivery of a manually executed copy of this Agreement by such party.

[Signature Page Follows]

IN WITNESS WHEREOF the parties hereto have executed this Agreement as of the day and year first above written.

For the METRO VANCOUVER REGIONAL DISTRICT

Jerry W. Dobrovlny, P.Eng., MBA
Chief Administrative Officer

For the BRITISH COLUMBIA LUNG FOUNDATION

Christopher Lam
President and Chief Executive Officer

SCHEDULE "A"
BRITISH COLUMBIA LUNG FOUNDATION ACTIVITIES

GOAL

To promote an understanding of the effects of air pollution on health and the environment through the provision, coordination and delivery of research, education and public awareness campaigns.

OBJECTIVES

- Inform development of policies and programs that will reduce the impact of air pollution and climate change on human health, ecosystems and visibility in BC.
- Serve as a resource to air quality and health agencies and groups in the region and province.
- Enhance collaboration and sharing of resources amongst air quality agencies and groups.

ACTIVITIES

- A. Act as secretariat of the Air Quality and Health Steering Committee, a multi-agency committee comprising representatives of BC Ministry of Environment and Climate Change Strategy, Environment and Climate Change Canada, Health Canada, BC Ministry of Health, Fraser Valley Regional District, BC Centre for Disease Control, University of British Columbia, and Metro Vancouver Regional District. Committee membership may change from time to time, as determined by Committee members and established in the Committee's Terms of Reference.
- B. Publish the State of the Air Report, which provides an annual snapshot of key air quality issues and a summary of air quality across the province, including within the Metro Vancouver Regional District.
- C. Plan and deliver the annual Air Quality and Health Workshop, which brings together air quality and environmental health experts and policymakers to share new insights regarding priority public health issues.
- D. Coordinate and host regular lecture series and webinars, which provide educational content to the public on current issues related to air quality and public health.
- E. Coordinate development of and deliver public educational materials related to air quality, health, and climate change such as information related to wildfire smoke, wood smoke and other issues and their effects on health.

SCHEDULE "B"

EVALUATION CRITERIA

Oversight - MVRD staff regularly interact with the Recipient's Board, paid coordinators and staff/volunteers.

Reporting - The Recipient is required to provide an annual report to MVRD on or before January 31 of the year following the year in which the Funds were received. The annual report will summarize the Recipient's activities performed and outcomes achieved during the previous year in the Recipient's efforts to carry out the Activities identified in Schedule "A" of this Agreement. The annual report will also provide a proposed outline of the Recipient's annual work plan and priorities, as they relate to MVRD, for the given year.

Review - MVRD staff will review the annual report and provide feedback to the Recipient. The Recipient will take into account, in good faith, MVRD's feedback in carrying out the Activities for the ensuing year.

To: Climate Action Committee

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

Date: May 16, 2022 Meeting Date: June 10, 2022

Subject: **Best Management Practices for Invasive Species: Garlic Mustard, Poison Hemlock and Spurge Laurel**

RECOMMENDATION

That the MVRD Board:

- a) receive for information the report dated May 16, 2022, titled “Best Management Practices for Invasive Species: Garlic Mustard, Poison Hemlock and Spurge Laurel”; and
 - b) direct staff to forward these Best Management Practices and accompanying fact sheets to member jurisdictions for information.
-

EXECUTIVE SUMMARY

Adding to the existing library of technical guidance for priority invasive species, Metro Vancouver has been working with the Invasive Species Council of Metro Vancouver, the City of Surrey, other member jurisdictions and local experts to produce sets of best management practice guides; the latest set are for garlic mustard, poison hemlock, and spurge laurel. These documents provide information for practitioners about how to identify, track, report, dispose, prevent further spread, and effectively control these species, as well as regulatory requirements, monitoring and restoration tips, references and additional resources. Each guide also describes how these invasive species may adapt as our climate changes. An accompanying one-page fact sheet for each invasive species has been created to raise public awareness.

PURPOSE

To provide the Climate Action Committee and the MVRD Board with three new invasive species best management practices documents and accompanying fact sheets for information.

BACKGROUND

Since 2018, the Climate Action Committee has received reports regarding best management practices for several priority invasive species. To date practitioner guidance has been produced for knotweed species, giant hogweed, European fire ant, European chafer beetle, Himalayan blackberry, Scotch broom, English holly, English and Irish ivies, yellow archangel, Himalayan balsam, parrot’s feather, purple loosestrife, reed canarygrass, wild chervil, yellow flag iris, hedge bindweed and American bullfrog. This report presents best management practice guides for three additional invasive species, which were identified by member jurisdiction staff as regional priority species.

THE NEED FOR AND DEVELOPMENT OF REGIONAL BEST MANAGEMENT PRACTICES

Invasive species are non-native flora or fauna that out-compete native species and can be highly destructive and difficult to control. They can threaten property and recreational values, infrastructure, agriculture, public health and safety, as well as ecological health.

In 2016, the Regional Planning Advisory Committee - Invasive Species Subcommittee requested the development of regionally-appropriate best management practices for priority invasive species. In October 2018, the MVRD Board adopted the *Ecological Health Framework*, which illustrates Metro Vancouver's role in protecting and enhancing ecological health as it relates to its services and functions, and supporting regional efforts (Reference 1). The *Framework* commits Metro Vancouver to “develop and employ best practices in the management of invasive species on Metro Vancouver lands and promote their use region-wide”.

Since 2018, Metro Vancouver has been retaining the Invasive Species Council of Metro Vancouver (ISCMV) to produce regional best management practice guidance for local government staff, crews, project managers, contractors, consultants, developers, stewardship groups, and others who have a role in invasive species management. These documents include technical guidance about identification, tracking, reporting, effective prevention and control strategies, regulatory requirements, disposal, monitoring and restoration, as well as references and additional resources. Recommendations therein were informed by the best available scientific expertise and local experience.

OVERVIEW OF LATEST BEST MANAGEMENT PRACTICES

In 2021, staff from the City of Surrey partnered with Metro Vancouver in the creation of new regional guidance for garlic mustard (Reference 2), poison hemlock (Reference 3), and spurge laurel (Reference 4). The ISCMV was again retained to research best practices for these species, including peer review by relevant staff from several member jurisdictions, Metro Vancouver, and additional local experts. Graphic design was completed by Metro Vancouver's External Relations Department. An overview of each document is provided below.

Garlic Mustard

Garlic mustard is listed as a noxious weed under the *Weed Control Act* so it must be controlled. This plant is a concern in natural areas because it produces a toxin that prevents the growth of native plants nearby and causes butterfly eggs laid on garlic mustard leaves to die before hatching.

Garlic mustard control should focus on both rosettes (first-year plants) and flowering plants (second year or older). Rosettes should be removed by digging and extracting as much of the root as possible, whereas older plants should be hand pulled or cut several times during the April to June flowering season. Eradication of garlic mustard infestations can take many years.

Poison Hemlock

As the name suggests, poison hemlock plants are poisonous. Although poisoning of humans, pets and livestock by ingestion is most common, toxicity can also result from inhalation and skin contact. Even dead plants can remain toxic for up to three years. If left uncontrolled in agricultural settings, poison

hemlock can crowd out desirable forage species or the plant's toxicity may render infested crops unsellable.

Protective gear (rubber gloves, goggles or a face shield, a suit, boots and possibly a respirator) should be used, as this plant is extremely toxic. Young plants may be pulled from the soil when moist. Mature plant removals should include extraction of the tap root. To eliminate the safety hazard, all material should be moved offsite and disposed of appropriately.

Spurge Laurel

Also commonly referred to as 'daphne', spurge laurel is highly toxic to both humans and animals. Poisoning can occur through skin contact, breathing in sap droplets, and ingesting any part of the plant. As few as 2-3 berries can fatally poison a child. Spurge laurel can spread quickly and compete with native plants in woodland ecosystems.

Protective gear (gloves, goggles or a face shield, long sleeved shirt and pants or waterproof suit, and possibly a respirator) should be used, as contact with the plant or vapours can cause skin and respiratory irritation. Older spurge laurel plants should be cut below the root collar, whereas younger plants can be pulled / dug out from the soil or the top spiral of leaves can be cut. All plant material should be double bagged and taken to a landfill for deep burial.

Climate Adaptation

These invasive plants will benefit from fewer frost days and an extended growing season. They can tolerate fluctuating water conditions and periods of drought, suggesting that they will be able to withstand, and possibly thrive as the climate continues to change. To minimize potential ecological health impacts and reduce control costs over the long term, proactive management is recommended.

FACT SHEETS AND NEXT STEPS

Plain language fact sheets were also produced to help share the best practice guidance beyond practitioners (References 5-7). These resources have been posted on Metro Vancouver's Invasive Species webpage (Reference 8). To increase awareness of the new best practices and suite of fact sheets, staff recommends circulation to member jurisdictions, as per Alternative 1.

Later in 2022, Regional Planning staff will be continuing this work and partnering with staff from the City of Burnaby and the ISCMV on regional guidance for two additional priority invasive species (i.e. bamboo and orange hawkweed).

ALTERNATIVES

1. That the MVRD Board:
 - a) receive for information the report dated May 16, 2022, titled "Best Management Practices for Invasive Species: Garlic Mustard, Poison Hemlock and Spurge Laurel"; and
 - b) direct staff to forward these Best Management Practices and accompanying fact sheets to member jurisdictions for information.

2. That the Climate Action Committee receive for information the report dated May 16, 2022, titled “Best Management Practices for Invasive Species: Garlic Mustard, Poison Hemlock and Spurge Laurel”, and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

The 2021 MVRD Board-approved Regional Planning budget included \$5,000 for the invasive species best management practice guides presented in this report. The City of Surrey also contributed \$8,000 toward the creation of these regional resources.

CONCLUSION

Adding to the existing library of technical guidance for priority invasive species, Metro Vancouver has been working with the Invasive Species Council of Metro Vancouver, the City of Surrey, other member jurisdictions and local experts to produce sets of best management practice guides. New best management practice guidance has been compiled for three invasive species found within the Metro Vancouver region: garlic mustard, poison hemlock and spurge laurel. These documents provide locally-tested technical guidance about identification, tracking, reporting, climate adaptation, effective prevention and control strategies, regulatory requirements, disposal, monitoring and restoration, as well as references and additional resources. A set of one-page fact sheets for each has also been created to increase public awareness. Staff recommend Alternative 1, that the Board receive these documents for information, and direct staff to forward them to member jurisdictions.

References

1. [*Ecological Health Framework*](#)
2. [Best Management Practices for Garlic Mustard in the Metro Vancouver Region](#)
3. [Best Management Practices for Poison Hemlock in the Metro Vancouver Region](#)
4. [Best Management Practices for Spurge Laurel in the Metro Vancouver Region](#)
5. [Garlic Mustard Fact Sheet](#)
6. [Poison Hemlock Fact Sheet](#)
7. [Spurge Laurel Fact Sheet](#)
8. [Metro Vancouver’s Invasive Species webpage](#)

52902657

To: Climate Action Committee

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

Date: May 30, 2022 Meeting Date: June 10, 2022

Subject: **Manager's Report**

RECOMMENDATION

That the Climate Action Committee receive for information the report dated May 30, 2022 titled "Manager's Report".

Climate Action Committee 2022 Work Plan

The attachment to this report sets out the Committee's Work Plan for 2022. 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.

Local Government Climate Action Program Update

On May 16, the BC government announced the [Local Government Climate Action Program \(LGCAP\)](#) which replaces the Climate Action Revenue Incentive Program (CARIP), and will provide funding to local governments and Modern Treaty Nations to support the implementation of climate change mitigation and adaptation projects. As part of the program, local governments are required to measure and report corporate GHG emissions, demonstrate investment in climate action initiatives, and report on projects linked to the objectives of the CleanBC roadmap to 2030 and/or the draft Climate Preparedness and Adaptation Strategy. Metro Vancouver's reporting for 2021 will take place over the third quarter of 2022.

Funding for the program will be distributed in the third quarter of this year, with the new funding model intended to distribute funding more equitably between smaller and larger communities. Funding is based on each community's population and a base amount, and small communities may see provincial funding for climate action increase significantly compared to CARIP. Previously, funding was distributed to local governments based on the amount of carbon tax paid. For 2022, Metro Vancouver will receive \$250,000, similar to what was received in 2021. These funds will be used to support climate action work.

City of Vancouver Adopts Emissions Requirements for New and Existing Buildings

At its May 17 meeting, City of Vancouver Council adopted a bylaw in principle that establishes a suite of GHG limits, other requirements, and support services for existing large commercial and multifamily buildings that will significantly accelerate the reduction of GHG emissions from the building sector in Vancouver. The requirements were developed from research and engagement with impacted building owners, managers, and representatives. Some of the requirements will take effect as early as 2024, and others later this decade, reaching zero carbon by 2040. The requirements are intended to provide a longer runway for certain buildings, particularly multifamily, to allow time to understand

and prepare to meet the requirements. Vancouver's bylaw represents a significant step forward in the region's climate action for buildings, and has established strong technical information and engagement channels with interested and impacted audiences. As Vancouver begins to implement its bylaw and support services, Metro Vancouver and City of Vancouver staff will continue to work closely to ensure alignment on the development of a regional approach.

At the same meeting, City of Vancouver Council approved recommendations from three additional climate emergency reports that will improve resiliency and reduce operational and embodied GHG emissions in buildings. The following provides a brief summary of the report recommendations for both new and existing buildings:

- "Climate Emergency – Bylaw and Policy Updates Applicable to New Buildings"
 - Recommendations: GHG limits, air filtration and cooling requirements for new residential and commercial buildings, taking effect as early as 2023.
- "Climate Emergency – By-law Updates Applicable to Existing Detached Homes"
 - Starting in 2023, all permitted replacement air conditioning units must be heat pumps, and large renovations must install electric heating and hot water.
- "Non-Market Housing Climate Resilient Retrofit Grant"
 - Grant \$2,000,000 to the BC Non Profit Housing Association to fund the Non-Market Housing Climate Resilient Retrofit Program to electrify aging gas heating and domestic hot water systems with heat pumps that reduce emissions and provide cooling for non-market housing residents.

The recommendations in these additional reports are also in strong alignment with the climate and resiliency actions in Metro Vancouver's *Clean Air Plan* and *Climate 2050 Buildings Roadmap*.

Climate 2050 Update

The *Climate 2050* roadmaps for Transportation and for Buildings were adopted by the Board in November 2021. The next four draft *Climate 2050* roadmaps are open to public input on the [Climate 2050 website](#), with the intent to bring final roadmaps back to the Climate Action Committee in the fall. These are: Energy, Agriculture, Industry and Business, and Nature and Ecosystems. Staff are engaging with those likely to comment, be impacted, or have a role in implementation. Input is welcomed via direct [email to the project team](#) or through filling in a feedback form.

Staff have generated a website page to house the various climate initiatives moving into implementation. Currently, this webpage showcases the *Engagement on Developing an Approach for Managing Greenhouse Gas Emissions from Large Buildings in Metro Vancouver*, based on Board direction in May 2022. Staff are working to add additional climate actions over time.

Air Quality Management Fees Update

Following public engagement in early 2021, the Board adopted the Air Quality Management Fees Bylaw No. 1330 on October 29, 2021. The bylaw resulted in updates to emission fee rates that are expected to eventually apply to annual fees payable under existing Metro Vancouver emission regulations, including the Agricultural Boiler Emission Regulation Bylaw No. 1098, 2008.

Staff are continuing to engage with the agriculture sector, including the Metro Vancouver Agricultural Advisory Committee and the BC Greenhouse Growers Association, on ways to address concerns associated with the fees adopted in Bylaw 1330.

Air Quality Advisory Program Update – Summer 2022

While our region experiences good air quality most of the time, an air quality advisory program informs the public when air quality becomes degraded. Metro Vancouver issued four air quality advisories during the summer of 2021, resulting in advisories being in effect for ten days for either elevated ground-level ozone, fine particulate matter or both. A record-breaking heatwave in late June resulted in high ozone levels not measured in the region since the 1980s, and caused an early start to an extremely active 2021 wildfire season in BC. Advisories in August were caused by high levels of fine particulate matter in smoke from wildfires burning outside the region. Significant wildfire smoke impacts in five of the last seven summers demonstrate that Metro Vancouver's air quality program must continue to adapt to a changing climate that is expected to increase the frequency and severity of both wildfires and heatwaves.

New advisory program initiatives this year include the preparation of a public video and a new air quality update service that will be made available to the public. The video, which will be posted on Metro Vancouver's website, will provide an overview of the advisory program and include actions people can take to reduce their exposure to elevated levels of air contaminants during an advisory. The new air quality update service will include a new webpage on Metro Vancouver's website and email subscription service to deliver information about air quality conditions in advance of an air quality advisory, including the current and forecasted air quality. The service will also allow advisory staff to provide a brief statement on the potential for an air quality advisory during the next day or two. This service will be informative to the public and will be used by municipalities and emergency managers to help them prepare services to support the public during episodes of degraded air quality, such as opening clean air shelters. The public video and update service will add to the air quality, health and wildfire information available to the public including air quality data (airmap.ca), the Air Quality Health Index (AQHI) and other online resources on Metro Vancouver's webpage.

Metro Vancouver operates the advisory service for the entire Lower Fraser Valley airshed, including the Metro Vancouver region and for the FVRD on their behalf, while the BC Ministry of Environment and Climate Change Strategy (BC ENV) provides a similar service for the rest of BC. The advisory service is delivered in collaboration with Environment and Climate Change Canada, BC ENV, Fraser Valley Regional District, Vancouver Coastal Health, Fraser Health Authority, First Nations Health Authority and the BC Centre for Disease Control.

Sustainable Infrastructure and Buildings Policy: Design Guide

In October 2018 the Metro Vancouver Board adopted the Sustainable Infrastructure and Buildings Policy. This policy aims to ensure infrastructure and buildings projects incorporate performance-based considerations for energy efficiency and GHG emissions, sustainable and efficient use of resources, and ecological health. The policy targets Leadership in Energy and Environmental Design (LEED) Gold and BC Energy Step Code Level 3 as minimum standards for occupied buildings and Envision Gold for eligible infrastructure.

In 2021, with support from the sustainability innovation fund, staff in Air Quality and Climate Change and the CAO's Office completed a Sustainable Infrastructure and Buildings Policy Design Guide to provide detailed technical guidelines to be used by Metro Vancouver staff and consulting teams to assist delivering high performance, sustainable infrastructure and building projects.

Since the completion of the Guide, staff are now developing instructional materials to train staff on the use of the Guide, which will be largely informed through feedback and learning from using the Guide on real projects. Currently, staff are advising other groups on the Guide and policy outcomes, and are also working with Water Services to pilot the Guide throughout the preliminary design phase of the Cape Horn, Pitt River, and Clayton re-chlorination station upgrades. This phase is anticipated to run from June 2022 to June 2023. Further piloting may also be done on later stages of the project while concurrently applying those learnings to the broader list of capital projects at Metro Vancouver.

Staff intend to bring a report in late 2022 or early 2023 to convey progress and learnings on implementation of the Guide and Policy. The Guide has been published on Metro Vancouver's public website (see reference 3 below), to inform the public, member municipalities and future consultants of the sustainability requirements that are central to delivering Metro Vancouver's infrastructure and buildings projects.

Attachment

Climate Action Committee 2022 Work Plan

References

1. [Media Release- BC launches new program to accelerate local climate action](#)
2. [Program Details- Local Government Climate Action Program](#)
3. [Sustainable Building and Infrastructure Policy: Design Guide](#)

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Climate Action Committee 2022 Work Plan

Report Date: May 30, 2022

Priorities

1st Quarter	Status
Climate Action Committee 2022 work plan and meeting schedule	Complete
Climate 2050 – draft roadmap for industry	Complete
Climate 2050 – draft roadmap for nature and ecosystems	Complete
Air quality – initiate process to update boilers and process heaters regulation	Complete
Sustainability Innovation Fund (SIF) – 2022 proposals	Complete
2nd Quarter	
Climate 2050 – management of GHG emissions from large buildings	Complete
Climate 2050 – draft roadmap for energy	Complete
Climate 2050 – draft roadmap for land use and growth management	In progress
Climate 2050 - analysis of how land use will contribute to achieving greenhouse gas reduction targets, especially for transportation	In progress
Climate 2050 – annual report and progress tracking	In progress
Air Quality – Initiate engagement on regulation for non-road two-stroke engines	Pending
Air quality – cannabis production and processing emission regulation	In progress
Air quality – open air burning emission regulation	In progress
Annual Caring for the Air report	In progress
Update on ecological health initiatives	In progress
SIF - status report on previously approved liquid waste projects	Complete
SIF - status report on previously approved regional district projects	In progress
3rd Quarter	
Climate 2050 final roadmap: agriculture	Pending
Climate 2050 final roadmap: industry	Pending
Climate 2050 – draft roadmap for infrastructure	Pending
Provincial replacement program for local government climate action	In progress
Air quality – amendments to air quality management fees in emission regulations	Complete
Air quality – amendments to ticketing bylaws	Pending
SIF - status report on previously approved water projects	In progress
4th Quarter	
Climate 2050 final roadmap: energy	Pending
Climate 2050 final roadmap: nature and ecosystems	Pending
Annual budget and 5 year financial plan	In progress
Best Management Practices for invasive species	In progress

To: Climate Action Committee

From: Heather McNell, General Manager, Regional Planning and Housing Services

Date: May 19, 2022 Meeting Date: June 10, 2022

Subject: **Process to Consider Stronger Climate Action Language and Policy for Metro 2050**

The attached report titled “Process to Consider Stronger Climate Action Language and Policy for Metro 2050” was considered by the Regional Planning Committee at its meeting on May 19, 2022, and the MVRD Board on May 27, 2022.

The MVRD Board recently directed staff to explore stronger climate action language and policy in *Metro 2050* with regards to greenhouse gas emission reductions and regional resilience, driven in part by the unprecedented climate change-related impacts the region and surrounding areas suffered in 2021 including the heat dome, wildfires, landslides, and flooding.

The schedule to adopt *Metro 2050* will proceed as directed by the MVRD Board, with possible consideration of bylaw adoption in July 2022. The work to explore stronger climate action language and policy is intended to occur concurrent with the adoption process with an aim to a potential early amendment to *Metro 2050*.

The Regional Planning Committee will guide this work as the Standing Committee responsible for the regional growth strategy, yet there is recognition of the inter-relatedness of the climate policy in *Metro 2050* with *Climate 2050* and its roadmaps. As a result, the report is now being presented to the Climate Action Committee for information, and the engagement process for this work will seek input and feedback from the Climate Action, Parks, and Liquid Waste Committees, as appropriate.

Attachment

Report dated April 22, 2022, titled “Process to Consider Stronger Climate Action Language and Policy for Metro 2050”.

51792856

To: Regional Planning Committee

From: Heather McNell, General Manager, Regional Planning and Housing Services

Date: April 22, 2022 Meeting Date: May 19, 2022

Subject: **Process to Consider Stronger Climate Action Language and Policy for *Metro 2050***

RECOMMENDATION

That the MVRD Board receive for information the report dated April 22, 2022, titled “Process to Consider Stronger Climate Action Language and Policy for Metro 2050”.

EXECUTIVE SUMMARY

The MVRD Board recently directed staff to explore stronger policy directions in *Metro 2050* with regards to GHG emission reductions and regional resilience, driven in part by the unprecedented climate change-related impacts the region and surrounding areas suffered in 2021 including the heat dome, wildfires, landslides, and flooding. Consistent with the recently released IPCC report, scientific experts recognize that further and faster action is needed to assist in reducing climate change impacts. This report presents a proposed scope of work and engagement plan to explore opportunities for stronger climate action language and policy for *Metro 2050*.

The schedule to adopt *Metro 2050* will proceed as directed by the MVRD Board, with possible consideration of bylaw adoption in July 2022. Given that land use intersects with many issue areas and the actions of other Metro Vancouver management plans, staff will concurrently be preparing the draft *Climate 2050 Land Use and Growth Management Roadmap*.

Over the latter half of 2022, staff will engage with the Regional Planning Advisory Committee, Regional Planning, Climate Action, and other standing committees, as well as with stakeholders and subject matter experts on the policy directions and the *Roadmap*, and will prepare recommendations for enhanced policies to be considered by the Board in 2023.

PURPOSE

This report is to provide the Regional Planning Committee and MVRD Board with a proposed scope of work and engagement plan to explore opportunities for stronger climate action language and policy for *Metro 2050* and the development of the *Climate 2050 Land Use and Growth Management Roadmap*.

BACKGROUND

The MVRD Board recently directed staff to explore stronger climate action language and policy for *Metro 2050* with regards to GHG emission reductions and regional resilience. This was driven in part by the unprecedented climate change-related impacts the region and surrounding areas suffered in 2021 including the heat dome, wildfires, landslides, and flooding. At its meeting on March 25, 2022, while considering first and second readings and scheduling a public hearing on the *Metro 2050* bylaw (Reference 1), the MVRD Board passed the following resolution:

Given the urgent need to respond to climate change and prepare for extreme weather events, direct staff to undertake work and engagement with an aim to proposing an early amendment to Metro 2050 post-adoption to strengthen climate action language and policy including the intent to improve integration of climate action into other Metro 2050 priorities.

This report responds to that direction with a proposed scope of work and engagement plan and link to the development of the *Climate 2050 Land Use and Growth Management Roadmap*.

CLIMATE ACTION-RELATED POLICIES IN METRO 2050

In April 2019, the MVRD Board directed staff to update *Metro 2040*, the regional growth strategy, through a series of “*Metro 2040 Policy Reviews*” intended to “take stock of *Metro 2040*’s policy framework, develop an understanding of best practices, and help shape a significant update to the regional growth strategy” (Reference 2). The *Metro 2040* Climate Change and Natural Hazards Policy Review was scoped to review the greenhouse gas (GHG) emission reduction and resilience policies in the regional growth strategy, and to identify opportunities to enhance them in *Metro 2050* through close collaboration with the *Climate 2050* process, engagement with internal and external stakeholders, and a comprehensive review of best practices (Reference 3).

The Climate Change and Natural Hazards Policy Review identified three key issues pertaining to climate change content in *Metro 2040*:

- climate change considerations are not well-integrated throughout all goal areas of the regional growth strategy;
- the regional growth strategy is underutilized as a tool to meet the region’s MVRD Board-adopted GHG emissions reduction target (i.e. a carbon neutral region by 2050); and
- the regional role related to climate change adaptation and natural hazards is not well-defined in the regional growth strategy.

The Policy Review resulted in seven broad policy recommendations to help address these key issues in *Metro 2050*. The recommendations were endorsed by the Metro Vancouver Board at its meeting on January 29, 2021, and Goal 3 policy content was developed from these recommendations and was reviewed by the Regional Planning Committee and MVRD Board in April 9, 2021 (Reference 4). A ‘climate lens’ was applied the content in all five of the strategy’s goal areas and integrated *Climate 2050* content where appropriate.

Metro 2050 reflects a balance of GHG emission reduction and resilience-focused policies that support the regional federation’s stated climate action objectives, while respecting the unique needs and ambitions of individual signatories. When the draft *Metro 2050* was released for comment (July-November 2021), the comments received from member jurisdictions, regional agencies, local First Nations and the public included both requests to soften and requests to strengthen the proposed climate action policies (Reference 5). A report summarizing the new language in *Metro 2050* that strengthens the policy areas pertaining to GHG emission reductions and climate resilience, including actions for Metro Vancouver, member jurisdictions and TransLink, was presented to the Regional Planning Committee at its meeting on February 10, 2022, and to the Climate Action Committee at its

meeting on March 11, 2022 (Reference 6). A detailed summary of the new and amended climate change policies in *Metro 2050* can be reviewed in the Attachment.

CLIMATE 2050 AND METRO 2050 ARE MUTUALLY-SUPPORTIVE BUT DISTINCT PLANS

Metro 2050 and *Climate 2050*, while mutually-supportive and interconnected, are distinct plans with their own scopes and objectives. Over the past three years, Metro Vancouver staff have been working closely to coordinate research and policy directions in *Metro 2050* and *Climate 2050*, and with TransLink staff as they developed *Transport 2050*. Early in the development process, Metro Vancouver and TransLink staff identified policy areas appropriate for each strategy based on respective mandates. As such, *Metro 2050* leads on land use and growth management elements, *Climate 2050* leads on GHG emissions reduction and resilience from all sectors within the region, and *Transport 2050* leads on the long-term transportation and access needs of the region. Each strategy contains policies and actions that are complementary, supportive, and reflective of the other strategies and should be considered together.

Climate 2050 is the region's climate action plan, that is scoped to be ambitious, aspirational, and comprehensive, and intended to guide climate change policy and action for Metro Vancouver over the next 30 years (Reference 7). It is made up of a series of ten "*Roadmaps*" by issue area which are currently being developed and implemented, each of which reflects different emission sources and include goals, targets, actions, and performance measures for reducing emissions in the region. They are also meant to reflect both current policies and new directions to set a path toward a resilient, low carbon region, and outline regional (to be led by Metro Vancouver or other governments / organizations, and sometimes in partnership) and corporate actions (led by Metro Vancouver) based on the best ideas, approaches, and available technologies. Each of the *Climate 2050 Roadmaps* will ultimately each be considered by the MVRD Board and endorsed by resolution. Implementation of the *Roadmaps* will be driven by the *Clean Air Plan*, *Metro 2050*, and other management plans and policies such as those for liquid waste, solid waste, drinking water, and regional parks. For actions that are primarily the responsibility of others, Metro Vancouver can play a supporting, advocacy, and / or convening role.

If adopted, *Metro 2050* will be the regional growth strategy, a plan that is defined and prescribed by the *Local Government Act* and enacted by bylaw, which requires acceptance from all member jurisdictions. In many cases, actions included in the *Climate 2050 Roadmaps* are also included in *Metro 2050*. At the time of writing this report there are still four *Roadmaps* to be initiated. Following the adoption of *Metro 2050*, as the *Roadmaps* are finalized and endorsed, there will likely be additional opportunities to amend *Metro 2050* in the future with policy language that is mutually supportive of the two strategies.

CLIMATE 2050 LAND USE AND GROWTH MANAGEMENT ROADMAP

In support of *Climate 2050*, Regional Planning staff will be preparing a draft *Land Use and Growth Management Roadmap*. Land use and growth management overlaps with many issue areas and often intersects with the policies and actions of other plans and strategies. This *Roadmap* will be informed and based on the principles and goals of *Metro 2050*, and focused on the associated strategies and actions that will be required to reduce GHG emissions and build climate resilience in the region. It may also include climate action content that goes beyond the existing endorsed Metro Vancouver

policy actions of other *Roadmaps*, strategies, or current management plans (e.g. ‘big moves’, ‘best practices’, ‘innovative ideas’ or ‘stretch goals’). It is anticipated that the *Roadmap* will inform future policy work and different policy areas / topics of *Metro 2050* and other Metro Vancouver management plans.

Staff are currently in the process of collecting and organizing ideas that will be considered for the draft *Land Use and Growth Management Roadmap*, including a thorough review of materials that were generated through all of the *Metro 2040* policy reviews and the *Climate 2050* discussion papers / *Roadmaps*. Metro Vancouver staff are working closely together to coordinate this work program with other related projects and initiatives both internally and externally to ensure efficiencies and mutually-supportive policy directions. Once the work on the draft *Roadmap* has been further advanced, it will be presented to the Climate Action and Regional Planning Committees for consideration, as well as others through a targeted engagement program with member jurisdictions.

CLIMATE ACTION POLICY AREAS TO EXPLORE FOR METRO 2050

In consideration of the Board’s direction to explore strengthening climate action language and policy in *Metro 2050*, staff are proposing to first undertake policy analysis activities and engagement work to assess where improvements could be made, the integration with work being undertaken by member jurisdictions, and the likelihood of support for amendments. This review is intended to focus on climate change topic areas with strong connections to the content and goals of the regional growth strategy, including the identification of GHG emission reduction actions and resilience actions under the following areas:

1. *Land Use, Communities, and Growth* – Low Carbon Resilient Growth Framework
 - Including consideration of implementation actions to enhance transit-oriented, growth structuring targets and urban containment and to minimize opportunities for ‘sprawl’ within the Urban Containment Boundary;
2. *Industry, Business, and Agriculture* – Low Carbon Resilient Economy;
3. *Environment and Energy* – Thriving Ecosystems and Low Carbon Resilient Energy
4. *Buildings and Housing* – Low Carbon Resilient Structures and Spaces;
5. *Transportation and Goods Movement* – Low Carbon Resilient Mobility and Movement; and
6. *Strengthening the language in existing policies* (for example from ‘consider’ to ‘undertake’)
7. *Other areas* that may arise through review and engagement.

Scope and Engagement

The review will be prepared through the following phases, including some joint and overlapping work with the development of the draft *Climate 2050 Land Use and Growth Management Roadmap*.

Phase 1: Background Review and Early Engagement (Q2/3 of 2022)

Staff will consider all recent work on climate policy related to *Metro 2050*, *Climate 2050*, and other aligned projects. This will include background research and reviewing the recommendations of the *Metro 2040* Climate and Natural Hazards Policy Review (to determine where they can be strengthened, e.g. from “consider” to “require”), the content of the completed *Climate 2050 Roadmaps*, and the suggestions provided by Committee members during recent Regional Planning and Climate Action Committee meetings, including those from delegations. In addition, engagement

will be conducted with stakeholders, including with the Regional Planning Advisory Committee (RPAC). The work will be led by the Regional Planning Committee as per their terms of reference, however, other standing committees including the Climate Action Committee, Parks Committee and Liquid Waste Committee will be provided opportunity to provide input and feedback. This will take place in Q2 and Q3 of 2022.

Phase 2 Develop, Refine, and Organize Ideas (Q4 2022)

Policy ideas identified through the review and early engagement will be compiled. These policy ideas will then be organized into those that could be appropriate for *Metro 2050*, policies that could be appropriate for the *Climate 2050 Land Use and Growth Management Roadmap*, and policies that could be appropriate for both or other plans or strategies.

Phase 3 Engage with Stakeholders and Subject Matter Experts (Q1/2 2023)

A critical part of this work is building consensus around any proposed language or policy in considering a proposed amendment to *Metro 2050*. As the implementers of the regional growth strategy, member jurisdictions, TransLink, adjacent regional districts and Metro Vancouver departments must be willing to undertake, and therefore support the policy actions identified. When *Metro 2050* was developed, the level of commitment was tested with the Intergovernmental Advisory Committee and member jurisdictions Councils, and the resulting language was understood to be the limit of acceptance. If stronger language and policy is put forward, engagement will be key.

This phase will include considering support for strengthening the language of current policies in *Metro 2050* (e.g. using “support”, “encourage”, “require”) as well as new policy generated through Phases 1 and 2. Engagement in early 2023 will be undertaken with RPAC, external subject matter experts, and interested standing committees of the Board. As climate action is a crucial part of Metro Vancouver’s commitments and Board Strategic Plan, there may be opportunities to seed the policy ideas generated into other management plans, ensuring compatibility and consistency.

Phase 4: Prepare Recommendations (Q2 2023)

Review engagement data and prepare recommendations for the Regional Planning Committee and MVRD Board on possible amendments to *Metro 2050* and seek support and direction.

NEXT STEPS

Staff anticipate that the *Metro 2050* adoption schedule will continue to proceed as directed by the MVRD Board, with possible consideration of bylaw adoption in July 2022. The commitment to undertake this review is intended to signal to the new Board post local elections, the desire to explore stronger climate action language and policy in *Metro 2050*. The findings of the review and engagement results will be reported out to the Regional Planning Committee and Board as available, together with the draft *Climate 2050 Land Use and Growth Management Roadmap*.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

There are no financial implications to this report.

CONCLUSION

The MVRD Board recently directed staff to explore stronger language and policy for *Metro 2050* with regards to GHG emission reductions and regional resilience, driven in part by the unprecedented climate change-related impacts the region and surrounding areas suffered in 2021 including the heat dome, wildfires, landslides, and flooding. Regional Planning staff have prepared a proposed scope of work and engagement plan to explore opportunities for stronger climate change policy language and possible amendments to *Metro 2050*, as well as preparing the *Climate 2050 Land Use and Growth Management Roadmap*. The *Metro 2050* adoption schedule will continue to proceed as directed by the MVRD Board, with consideration of bylaw adoption in July 2022.

Over the latter half of 2022, staff will engage with stakeholders and subject matter experts on stronger climate action language and policy for Metro 2050 as well as on the *Climate 2050 Land Use and Growth Management Roadmap*, and will prepare recommendations on enhanced policies for the Regional Planning Committee and Board's consideration early in 2023.

Attachment

Comparison of Climate Actions in *Metro 2040* and Draft *Metro 2050*

References

1. [Consideration of Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022, a bylaw to adopt Metro 2050, Staff Report, March 9, 2022](#)
2. [Report dated March 28, 2019, titled "Towards Metro 2050: Updating Metro Vancouver 2040: Shaping our Future" presented to the MVRD Board at its regular meeting of April 26, 2019.](#)
3. [Report dated January 6, 2021, titled "Metro 2040 Climate Change and Natural Hazards Policy Review – Recommendations" presented to the Regional Planning Committee at its regular meeting of January 14, 2021.](#)
4. [Report dated March 26, 2021, titled "Metro 2050 Draft Policy Language – Goal 3: Protect the Environment and Respond to Climate Change Impacts and the Implementation Section" presented to the Regional Planning Committee at its regular meeting of April 9, 2021.](#)
5. [Report dated January 7, 2022, titled "Comments on the Draft of Metro 2050 and Proposed Next Steps" presented to the Regional Planning Committee at its regular meeting of January 14, 2022.](#)
6. [Report dated February 4, 2022, titled "Metro 2050 Next Steps: Addressing Member Jurisdiction Comments and Climate Policy" presented to the Regional Planning Committee at its regular meeting of February 10, 2022.](#)
7. <http://www.metrovancouver.org/climate2050>

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Comparison of Climate Actions in Metro 2040 and Draft Metro 2050

Each Goal preamble and strategy rationale describes the relevance of greenhouse gas emission reductions and climate change resilience for the Goal area.

Metro 2040 Climate Actions	Metro 2050 Climate Actions
Goal 1: Create a Compact Urban Area	
No specific climate actions for UCs or FTDAs	<p>Strategy 1.2 Focus growth in Urban Centres and Frequent Transit Development Areas</p> <p>Metro Vancouver will:</p> <p>1.2.15 Work with First Nations and other appropriate agencies to ensure that new development and infrastructure investment is directed to areas that are transit-oriented and resilient to climate change impacts and natural hazards.</p> <p>1.2.19 Advocate to the Province that any future or expanded rail-based rapid transit service:</p> <p>a) avoid locations that are exposed to unmitigated natural hazards and climate change risk;</p> <p>Member Jurisdictions will:</p> <p>1.2.26 Collaborate with member jurisdictions and other stakeholders on the expansion of the Frequent Transit Network, Major Transit Network, and new transit stations, and avoid expansion of permanent transit infrastructure into hazardous areas. Where risk is unavoidable, such as in existing settlements, use risk-mitigation or climate change adaptation strategies in the expansion of transit infrastructure.</p>
No specific climate actions for complete communities	<p>Strategy 1.3 Develop resilient, healthy, connected, and complete communities with a range of services and amenities</p> <p>Metro Vancouver will:</p> <p>1.3.1 Support member jurisdictions and work with First Nations in developing resilient, healthy, connected, and complete communities through regional strategies, research, and best practices that:</p> <p>b) reduce greenhouse gas emissions, bolster resilience to climate change impacts and natural hazards, and improve social equity, universal accessibility, and inclusive engagement; and</p> <p>1.3.2 Provide technical advice, assistance, research, and data to member jurisdictions and other agencies to improve air quality, reduce greenhouse gases, increase access to community services, and to better understand the health and social equity aspects of land use and infrastructure decisions.</p> <p>1.3.3 Collaborate with health authorities, academic institutions, First Nations, and other researchers to share best practices, research, data, and tools that can advance land use policies to:</p> <p>c) reduce community exposure to climate change and air quality impacts, especially communities that are disproportionately impacted; and</p> <p>Member Jurisdictions will:</p> <p>1.3.7 Adopt Regional Context Statements that:</p> <p>d) respond to health and climate change-related risks by providing equitable access to: i) recreation facilities; ii) green spaces and public spaces (e.g. parks, trails, urban forests, public squares, etc.); and iii) safe and inviting walking, cycling, and rolling environments, including resting spaces with tree canopy coverage, for all ages and abilities;</p>
No specific climate actions for Rural lands	<p>Strategy 1.4 Protect Rural lands from urban development</p> <p>Member Jurisdictions will:</p> <p>1.4.3 Adopt Regional Context Statements that:</p> <p>e) support the protection, enhancement, restoration, and expansion of ecosystems identified on Map 11 to maintain ecological integrity, enable ecosystem connectivity, increase natural carbon sinks and enable adaptation to the impacts of climate change.</p>

Metro 2040 Climate Actions	Metro 2050 Climate Actions
Goal 2: Support a Sustainable Economy	
No specific climate actions for Industrial lands	<p>Strategy 2.1 Promote land development patterns that support a diverse regional economy and employment opportunities close to where people live</p> <p>Metro Vancouver will:</p> <p>2.1.6 Advocate that airport authorities:</p> <p>c) develop strategies to adapt to climate change impacts and natural hazard risks.</p> <p>2.1.7 Advocate that the Port of Vancouver:</p> <p>c) develop strategies to adapt to climate change impacts and natural hazard risks.</p>
	<p>Strategy 2.2 Protect the supply, and enhance the efficient use of, industrial land</p> <p>Member jurisdictions will:</p> <p>2.2.9 Adopt Regional Context Statements that:</p> <p>c) include policies for Industrial lands that:</p> <p>ix) consider the preparation of urban design guidelines for Industrial land edge planning, such as interface designs, buffering standards, or tree planting, to minimize potential land use conflicts between industrial and sensitive land uses, and to improve resilience to the impacts of climate change; and</p> <p>e) include policies to assist existing and new businesses in reducing their greenhouse gas emissions, maximizing energy efficiency, and mitigating impacts on ecosystems.</p> <p>f) include policies that assist existing and new businesses to adapt to the impacts of climate change and reduce their exposure to natural hazards risks, such as those identified within the regional growth strategy (Table 5).</p>
No specific climate actions for Agricultural lands	<p>Strategy 2.3 Protect the supply of agricultural land and strengthen agricultural viability</p> <p>Metro Vancouver will:</p> <p>2.3.9 Advocate to the Province to increase agricultural producers’ knowledge and adoption of innovative practices for advancing agriculture economic development, and resilience to climate change and natural hazard impacts, such as those identified in the regional growth strategy (Table 5).</p> <p>2.3.10 Advocate to the Province to provide incentives to encourage land management practices that reduce greenhouse gas emissions, improve soil health, protect natural assets, and maintain ecosystem services from agricultural land.</p> <p>Member Jurisdictions will:</p> <p>2.3.12 Adopt Regional Context Statements that:</p> <p>c) include policies that protect the supply of agricultural land and strengthen agriculture viability including those that:</p> <p>iii) support climate change adaptation including:</p> <ul style="list-style-type: none"> • monitor storm water, flooding, and sea level rise impacts on agricultural land, • implement flood construction requirements for residential uses, • and maintain and improve drainage and irrigation infrastructure that supports agricultural production, where appropriate and in collaboration with other governments and agencies;

Metro 2040 Climate Actions	Metro 2050 Climate Actions
Goal 3: Protect the Environment and Respond to Climate Change Impacts	Goal 3: Protect the Environment and Respond to Climate Change and Natural Hazards
<p>Strategy 3.1 Protect Conservation and Recreation lands</p> <p>No specific climate actions for Conservation and Recreation lands</p>	<p>Strategy 3.1 Protect and enhance Conservation and Recreation lands</p> <p>Member jurisdictions will:</p> <p>3.1.9 Adopt Regional Context Statements that:</p> <p>b) include policies that support the protection and enhancement of lands with a Conservation and Recreation land use designation, which may include the following uses:</p> <p>vii) ecosystems not covered above that may be vulnerable to climate change and natural hazard impacts, or that provide buffers to climate change impacts or natural hazard impacts for communities; and</p> <p>viii) uses within those lands that are appropriately located, scaled, and consistent with the intent of the designation, including:</p> <ul style="list-style-type: none"> land management activities needed to minimize vulnerability / risk to climate change impacts.
<p>Strategy 3.2 Protect and enhance natural features and their connectivity</p> <p>No specific climate actions for ecosystems</p>	<p>Strategy 3.2 Protect, enhance, restore, and connect ecosystems</p> <p>Metro Vancouver will:</p> <p>3.2.2 Implement the Metro Vancouver Ecological Health Framework, including relevant actions to:</p> <p>a) collect and maintain data, including the Sensitive Ecosystem Inventory, tree canopy cover, imperviousness, and carbon storage datasets; report on gains and losses and climate change impacts on ecosystems; and share these datasets with member jurisdictions; and</p> <p>b) incorporate natural assets and ecosystem services into Metro Vancouver’s corporate planning, asset management systems and investments, and provide regionally appropriate guidance on methodologies, tools and decision-making frameworks.</p> <p>3.2.3 Manage Metro Vancouver assets and collaborate with member jurisdictions, First Nations, and other agencies to:</p> <p>b) identify ecosystems that may be vulnerable to climate change and natural hazard impacts as part of regional multi-hazard mapping in Action 3.4.2 a);</p> <p>c) identify a regional green infrastructure network that connects ecosystems and builds on existing local networks, while maximizing resilience, biodiversity, and human health benefits; and</p> <p>3.2.6 Advocate to the Federal Government and the Province to:</p> <p>b) support the uptake of nature-based climate change solutions, including those that protect or restore foreshore ecosystems;</p> <p>Member jurisdictions will:</p> <p>3.2.7 Adopt Regional Context Statements that:</p> <p>c) include policies that:</p> <p>i) support the consideration of natural assets and ecosystem services in land use decision-making and land management practices;</p> <p>ii) enable the retention and expansion of urban forests using various tools, such as local tree canopy cover targets, urban forest management strategies, tree regulations, development permit requirements, land</p>

Metro 2040 Climate Actions	Metro 2050 Climate Actions
	acquisition, street tree planting, and reforestation or restoration policies, with consideration of resilience ;
<p>Strategy 3.3 Encourage land use and transportation infrastructure that reduce energy consumption and greenhouse gas emissions, and improve air quality</p> <p>Metro Vancouver’s role is to: 3.3.1 Implement the strategies and actions of the Regional Growth Strategy that contribute to regional targets to reduce greenhouse gas emissions by 45 percent below 2010 levels by 2030 and to achieve a carbon neutral region by 2050. Figure 3 identifies examples of strategies and actions contained in the Regional Growth Strategy to address climate change.</p>	<p>Strategy 3.3 Encourage land use, infrastructure, and human settlement patterns that reduce energy consumption and greenhouse gas emissions, create carbon storage opportunities, and improve air quality</p> <p>Metro Vancouver will: 3.3.1 Implement the: a) strategies and actions of the regional growth strategy that contribute to regional targets to reduce greenhouse gas emissions by 45% below 2010 levels by the year 2030 and to achieve a carbon neutral region by the year 2050; and b) Metro Vancouver <i>Clean Air Plan, Climate 2050</i>, and other associated actions to help achieve the regional greenhouse gas emissions reduction targets in Action 3.3.1 a).</p>
<p>Metro Vancouver’s role is to: 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).</p>	<p>Metro Vancouver will: 3.3.2 Work with the Federal Government, the Province, TransLink, member jurisdictions, First Nations, non-governmental organizations, energy utilities, the private sector, and other stakeholders, as appropriate, to: a) monitor energy consumption, greenhouse gas emissions, and air quality related to land use, buildings, industry, agriculture, waste, transportation, and other emission sources, and consider lifecycle energy and emissions; b) monitor and pursue opportunities to increase carbon storage in natural areas; and c) promote best practices and develop guidelines to support local government actions that reduce energy consumption and greenhouse gas emissions, support a transition to clean, renewable energy (including electricity), create carbon storage opportunities, and improve air quality.</p> <p>3.3.4 Work with the Federal Government, the Province, and other stakeholders when conducting environmental assessments to reduce the environmental and health impacts related to regional air quality and greenhouse gas emissions.</p>
<p>Metro Vancouver’s role is to: 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.</p>	<p>Metro Vancouver will: 3.3.5 Accept Regional Context Statements that encourage land use, infrastructure, and settlement patterns that reduce energy consumption and greenhouse gas emissions, improve air quality, create carbon storage opportunities, and that meet or work towards Action 3.3.7.</p>

Metro 2040 Climate Actions	Metro 2050 Climate Actions
<p>Actions Requested of Other Governments and Agencies</p> <p>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:</p> <p>a) in the building sector,</p> <ul style="list-style-type: none">• 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 <p>b) in the transportation sector,</p> <ul style="list-style-type: none">• 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	<p>Metro Vancouver will:</p> <p>3.3.6 Advocate to the Federal Government and the Province to establish and support legislative and fiscal actions, that help the public and private sector maximize reductions in energy consumption and greenhouse gas emissions, and improve air quality, such as:</p> <p>a) in the building sector,</p> <ol style="list-style-type: none">i) accelerating the transition of energy efficiency requirements in the BC Building Code to net zero energy ready levels by 2032;ii) setting greenhouse gas and energy performance requirements for new and existing buildings;iii) increasing incentives and financing tools for new low-carbon, zero-emissions, and resilient buildings;iv) supporting large-scale building electrification;v) requiring benchmarking and energy labels for new and existing buildings;vi) supporting reductions in embodied emissions of buildings, and the increased use of low-carbon circular building products and processes;vii) supporting programs, services and incentives for low-carbon upgrade options in rental buildings that benefit building owners and tenants;viii) incenting equitable transit-oriented development through policy and funding programs; andix) supporting, where feasible and appropriate, energy recovery, renewable energy generation and zero-carbon district energy systems, and related transmission needs. <p>b) in the transportation sector,</p> <ol style="list-style-type: none">i) revising enabling legislation to allow regional road usage charging for the purposes of managing congestion and greenhouse gases;ii) supporting electric vehicle charging in new and existing buildings through requirements and programs;iii) continuing to increase the amount of reliable and sustainable funding available for sustainable transportation infrastructure and low emission travel modes, such as active transportation and public transit; andiv) continuing to advance stringent standards for on-road vehicle emissions and fuel carbon content.
<p>The role of municipalities is to:</p> <p>3.3.4 Adopt Regional Context Statements which:</p> <p>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;</p> <p>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:</p> <ul style="list-style-type: none">• 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	<p>Member jurisdictions will:</p> <p>3.3.7 Adopt Regional Context Statements that:</p> <p>a) identify how local land use and transportation policies will contribute to meeting the regional greenhouse gas reduction target of 45% below 2010 levels by the year 2030 and achieving a carbon neutral region by the year 2050;</p> <p>b) identify policies, actions, incentives, and / or strategies that reduce energy consumption and greenhouse gas emissions, create carbon storage opportunities, and improve air quality from land use, infrastructure, and settlement patterns, such as:</p> <ol style="list-style-type: none">i) existing building retrofits and construction of new buildings to meet energy and greenhouse gas performance guidelines or standards (e.g. BC Energy Step Code, passive design), the electrification of building heating systems, green demolition requirements, embodied emissions policies, zero-carbon district energy systems, and energy recovery and

Metro 2040 Climate Actions	Metro 2050 Climate Actions
<p>as solar panels and geoexchange systems, and electric vehicle charging infrastructure;</p> <ul style="list-style-type: none"> community design and facility provision that encourages transit, cycling and walking (e.g. direct and safe pedestrian and cycling linkages to the transit system); <p>c) focus infrastructure and amenity investments in Urban Centres and Frequent Transit Development Areas, and at appropriate locations along TransLink’s Frequent Transit Network;</p> <p>d) implement land use policies and development control strategies which support integrated storm water management and water conservation objectives.*</p>	<p>renewable energy generation technologies, such as solar panels and geoexchange systems, and zero emission vehicle charging infrastructure; and</p> <p>ii) community design, infrastructure, and programs that encourage transit, cycling, rolling and walking; and</p> <p>c) focus infrastructure and amenity investments in Urban Centres and Frequent Transit Development Areas, and at appropriate locations along Major Transit Growth Corridors.</p> <p>*d) moved to 3.2.7 c) iv)</p>
<p>Actions Requested of Other Governments and Agencies</p> <p>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.</p> <p>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.</p>	<p>TransLink will:</p> <p>3.3.8 Support regional air quality objectives and greenhouse gas emission reduction targets by advancing policy and infrastructure to support the aggressive transition of the ground-based vehicle fleet to zero-emissions, and by transitioning the entire transit fleet to one that utilizes low-carbon fuels.</p>
<p>Actions Requested of Other Governments and Agencies</p> <p>3.3.5 That TransLink, in collaboration with Metro Vancouver and municipalities, establish criteria for defining major development proposals, which are referenced in the <i>South Coast British Columbia Transportation Authority Act</i>, in order to help meet the objective of concentrating major trip-generating uses in areas well served by transit.</p>	<p>TransLink will:</p> <p>3.3.9 In collaboration with Metro Vancouver and member jurisdictions, establish a definition of major development proposals, which are referenced in the <i>South Coast British Columbia Transportation Authority Act</i>, to support the objective of concentrating Major Trip-Generating uses in areas well served by transit.</p>
<p>Strategy 3.4 Encourage land use and transportation infrastructure that improve the ability to withstand climate change impacts and natural hazard risks</p>	<p>Strategy 3.4 Encourage land use, infrastructure, and human settlement patterns that improve resilience to climate change impacts and natural hazards</p>
<p>Metro Vancouver’s role is to:</p> <p>3.4.1 Incorporate climate change and natural hazard risk assessments into the planning and location of Metro Vancouver utilities, assets and operations.</p>	<p>Metro Vancouver will:</p> <p>3.4.1 Incorporate climate change and natural hazard risk assessments into the planning and location of existing and future Metro Vancouver utilities, assets, operations, and other critical infrastructure.</p>

Metro 2040 Climate Actions	Metro 2050 Climate Actions
<p>Metro Vancouver’s role is to:</p> <p>3.4.2 Work with the federal government and the province, TransLink and municipalities to:</p> <ul style="list-style-type: none">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. <p>3.4.6 That the Integrated Partnership for Regional Emergency Management, in collaboration with the federal government and the province, and other agencies:</p> <ul style="list-style-type: none">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. <p>3.4.7 That the federal government and the province, in collaboration with the Integrated Partnership for Regional Emergency Management and other agencies:</p> <ul style="list-style-type: none">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.	<p>Metro Vancouver will:</p> <p>3.4.2 Work with the Integrated Partnership for Regional Emergency Management, the Federal Government, the Province, First Nations, TransLink, member jurisdictions, adjacent regional districts, and other stakeholders, as appropriate, to:</p> <ul style="list-style-type: none">a) collaboratively develop and share information and data related to hazards, risks, and vulnerabilities in the Metro Vancouver region, which may include preparing a regional multi-hazard map, and identifying and coordinating priority actions, implementation strategies, and funding mechanisms;b) plan for climate change impacts and natural hazard risks when extending utilities and transportation infrastructure that support development;c) support the integration of emergency management, utility planning, and climate change adaptation principles in land use plans, transportation plans, and growth management policies;d) research and promote best practices and develop guidelines to support resilience to the impacts of climate change and natural hazards as it relates to planning and development;e) support regional flood management approaches, such as the implementation of the Lower Mainland Flood Management Strategy; andf) research and share information related to the impacts of climate change and natural hazards on vulnerable populations, and focus resilience actions on equitable outcomes. <p>3.4.4 Advocate to the Federal Government and the Province that they:</p> <ul style="list-style-type: none">a) review and improve existing provincial legislation and guidelines regarding flood hazard management at the local level, encourage the adoption of local flood hazard policies and bylaws, and implement appropriate preparatory actions to address the long-term implications of sea level rise on infrastructure planning, construction, and operations;b) incorporate resilience considerations into building codes and standards;c) modernize the provincial <i>Emergency Program Act</i> and associated regulations with requirements for land use planning, and consider land use implications in the development of climate change adaptation strategies; andd) provide guidelines, programs, funding, and timely data and information to support regional and local planning for climate change impacts and natural hazards.
<p>Metro Vancouver’s role is to:</p> <p>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.</p>	<p>Metro Vancouver will:</p> <p>3.4.3 Accept Regional Context Statements that encourage land use, settlement patterns, transportation and utility infrastructure which improve the ability to withstand climate change impacts and minimize natural hazard risks, and that meet or work towards Actions 3.4.5, 3.4.6, 3.4.7, and 3.4.8.</p>

Metro 2040 Climate Actions	Metro 2050 Climate Actions
<p>The role of municipalities is to:</p> <p>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).</p>	<p>Member jurisdictions will:</p> <p>3.4.5 Adopt Regional Context Statements that:</p> <p>a) include policies that minimize risks associated with climate change and natural hazards in existing communities through tools such as heat and air quality response plans, seismic retrofit policies, and flood-proofing policies; and</p> <p>b) include policies that discourage new development in current and future hazardous areas to the extent possible through tools such as land use plans, hazard-specific Development Permit Areas, and managed retreat policies, and where development in hazardous areas is unavoidable, mitigate risks.</p>
<p>3.4.5 Consider incorporating climate change and natural hazard risk assessments into the planning and location of municipal utilities, assets and operations.</p>	<p>3.4.6 Incorporate climate change and natural hazard risk assessments into planning and location decisions for new municipal utilities, assets, operations, and community services.</p>
	<p>3.4.7 Integrate emergency management, utility planning, and climate change adaptation principles when preparing land use plans, transportation plans, and growth management policies.</p> <p>3.4.8 Adopt appropriate planning standards, guidelines, and best practices related to climate change and natural hazards, such as flood hazard management guidelines and wildland urban interface fire risk reduction principles.</p>
Goal 4: Develop Complete Communities	Goal 4: Provide Diverse and Affordable Housing Choices
<p>No specific climate actions for housing</p>	<p>Strategy 4.1 Expand the supply and diversity of housing to meet a variety of needs</p> <p>Member jurisdictions will:</p> <p>4.1.8 Adopt Regional Context Statements that:</p> <p>c) identify policies and actions that contribute to the following outcomes:</p> <p>viii) existing and future housing stock that is low carbon and resilient to climate change impacts and natural hazards.</p> <p>4.1.9 Prepare and implement housing strategies or action plans that:</p> <p>c) identify housing priorities, based on the assessment of local housing market conditions, household incomes, changing population and household demographics, climate change and natural hazards resilience, and key categories of local housing need, including specific statements about special needs housing and the housing needs of equity-seeking groups; and</p>
	<p>Strategy 4.2 Expand, retain, and renew rental housing supply and protect tenants</p> <p>Member jurisdictions will:</p> <p>4.2.7 Adopt Regional Context Statements that:</p> <p>d) identify policies and actions that contribute to the following outcomes:</p> <p>v) reduced energy use and greenhouse gas emissions from existing and future rental housing stock, while considering impacts on tenants and affordability.</p>

Metro 2040 Climate Content	Metro 2050 Climate Content
Goal 5: Support Sustainable Transportation Choices	
<p>Metro Vancouver’s role is to:</p> <p>5.1.2 Communicate to TransLink that Metro Vancouver’s objectives for the regional transportation system are:</p> <p>b) to support energy consumption, greenhouse gas emission, and air quality objectives (as described in Strategy 3.3).</p>	<p>Strategy 5.1 Coordinate land use and transportation to encourage transit, multiple-occupancy vehicles, cycling and walking</p> <p>Metro Vancouver will:</p> <p>5.1.2 Establish the following objectives for the regional transportation system:</p> <p>b) reduce energy consumption and greenhouse gas emissions while improving air quality, as set out in Strategy 3.3; and</p> <p>TransLink will:</p> <p>5.1.15 In support of coordinated land use and transportation to encourage transit, multiple occupancy vehicles, cycling, walking, and rolling:</p> <p>f) work with the Province, the Integrated Partnership for Regional Emergency Management, and member jurisdictions to evaluate the potential impacts of climate change and known unmitigated natural hazards on rapid transit alignments, station locations, and associated transportation infrastructure;</p>
<p>No specific climate actions for land use and transportation coordination</p>	<p>Strategy 5.2 Coordinate land use and transportation to support the safe and efficient movement of vehicles for passengers, goods, and services</p> <p>Metro Vancouver will:</p> <p>5.2.4 Advocate to the Province, TransLink, and neighbouring regional districts to request that the following elements are considered when contemplating future expansion of private vehicle capacity on major roads, highways, and crossings:</p> <p>b) the negative impacts on the achievement of regional greenhouse gas emission reduction targets and air quality objectives;</p> <p>f) the ability of the transportation system to withstand known and unmitigated climate change impacts and natural hazards.</p>

BUILDING A B.C. HYDROGEN ECONOMY



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Centre for Innovation and Clean Energy →

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Hydrogen Investment Blueprint to Stimulate B.C.'s Promising Hydrogen Sector Beginning with Metro Vancouver Region

VANCOUVER, BC , May 26, 2022 /CNW/ - In partnership with British Columbia's (B.C.) newly established B.C. Hydrogen Office, the B.C. Centre for Innovation and Clean Energy (CICE) is leading a collaborative effort to creating a blueprint for B.C.'s emerging clean hydrogen sector.

As a first step, CICE has partnered with Deloitte to produce a B.C. Hydrogen Investment Blueprint that will drive investment in the low carbon hydrogen sector and lay a foundation for the **establishment of a hydrogen hub in Metro Vancouver**.

"Hydrogen will play a key role in helping B.C. transition to cleaner energy solutions as we work toward meeting legislated 2030-2050 greenhouse gas reduction targets," said **Bruce Ralston, Minister of Energy, Mines and Low Carbon Innovation**. "Since our government released B.C.'s hydrogen strategy in July 2021, we've received proposals for 40 hydrogen projects, representing potential investments worth \$4.8 billion."

"B.C. is well positioned to be a frontrunner in the post-pandemic economy with a focus on having a high-care, low-carbon economy that works for everyone," said the **Honourable Ravi Kahlon, Minister of Jobs, Economic Recovery and Innovation**. "Through our StrongerBC Economic Plan, we are on a mission to meet our climate commitments, renewable and low-carbon hydrogen will play an essential role in developing sustainable opportunities for businesses and people all across B.C."

The Blueprint, which is expected to be publicly available in August of this year, will highlight the value proposition for prospective investors by focusing on actionable opportunities, such as:

- hydrogen supply, including various means of low-carbon hydrogen production established in the Province;
- infrastructure or network requirements to enable hydrogen offtake for the industry and transportation sectors;
- demand opportunities that are the best applications for hydrogen to optimize emission reductions;
- opportunities to export BC produced hydrogen to global markets;
- gaps to be closed for upstream, midstream and downstream to enable investments;
- key government mechanisms to enable the hydrogen market, including policies, regulatory requirements,

The conclusions and recommendations in the Blueprint will be based on extensive research, including consultation with a Guiding Community. The Community includes: Bryan Buggey (Vancouver Economic Commission), Cory Paterson (BC Trucking Association), David Bennett (FortisBC), Elisabeth Charmley (Vancouver Maritime Centre for Climate), Gerri Sinclair (Province of BC), Kwatuuma Cole Sayers (Indigenous Community Representation), Lejla Uzicanin (Invest Vancouver), Lester Dyck (BC Hydro), Matthew Klippenstein (Canadian Hydrogen Fuel Cell Association), Ralf Nielsen (TransLink), Marion Town (YVR), Ronan Chester (Port of Vancouver), Robert Pinchuk (Parkland), Pradeep Appasani (Parkland), and Roger Quan (Metro Vancouver).

Members of industry will also be invited to participate in a stress test to validate findings and ensure that the Blueprint's contents resonate with key stakeholders. If you are interested in participating in the BC Hydrogen Investment Blueprint stress test, please email info@cice.ca by June 1, 2022.



"CICE is proud to be taking the lead on this initiative. This is just the beginning of what promises to be a game-changing moment in BC's journey to net zero," says **Yemi Adefulu, Deputy Executive Director of CICE**. "When we established CICE just over six months ago, we knew BC's clean hydrogen ecosystem would be among our very first priorities. It's just that important—to BC, and to the planet."

Centre for Innovation and Clean Energy

Founded by the Government of British Columbia, Shell, and supported by the Canadian Federal Government, the B.C. Centre for Innovation and Clean Energy (CICE) is an independent nonprofit that takes decisive and urgent action to enable clean energy breakthroughs in BC that will help the province get to net zero, and beyond. CICE's most important stakeholder is the planet; their purpose is first and foremost to protect and preserve the earth for generations to come. Together with their members, CICE enables clean innovation like the future of the planet depends on it. Because it does. To learn more visit us at www.cice.ca or connect with us on LinkedIn and Twitter.

The BC Hydrogen Office

The BC Hydrogen Office is the Province's one-stop-shop for hydrogen. The role of the Office is to advance all aspects of hydrogen projects and facilitate hydrogen's role across British Columbia's energy systems. Priorities include hydrogen production, distribution, storage, end-uses, and export, as well as the setting of policy, regulatory, and other enabling frameworks.

Deloitte

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