

**METRO VANCOUVER REGIONAL DISTRICT (MVRD)  
BOARD OF DIRECTORS**

**REGULAR BOARD MEETING**

**Friday, March 26, 2021**

**9:00 A.M.**

**28<sup>th</sup> Floor Boardroom, 4730 Kingsway, Burnaby, British Columbia**

[Membership and Votes](#)

**A G E N D A<sup>1</sup>**

**A. ADOPTION OF THE AGENDA**

**1. March 26, 2021 Regular Meeting Agenda**

That the MVRD Board adopt the agenda for its regular meeting scheduled for March 26, 2021 as circulated.

**B. ADOPTION OF THE MINUTES**

**1. February 26, 2021 Regular Meeting Minutes**

That the MVRD Board adopt the minutes for its regular meeting held February 26, 2021 as circulated.

**C. DELEGATIONS**

**D. INVITED PRESENTATIONS**

**E. CONSENT AGENDA**

*Note: Directors may adopt in one motion all recommendations appearing on the Consent Agenda or, prior to the vote, request an item be removed from the Consent Agenda for debate or discussion, voting in opposition to a recommendation, or declaring a conflict of interest with an item.*

**1. CLIMATE ACTION COMMITTEE REPORTS**

**1.1 Draft Clean Air Plan**

That the MVRD Board authorize staff to proceed with engagement on the draft *Clean Air Plan*, based on the report dated February 10, 2021, titled “Draft Clean Air Plan”.

---

<sup>1</sup> Note: Recommendation is shown under each item, where applicable. All Directors vote unless otherwise noted.

**1.2 Draft Climate 2050 Buildings Roadmap**

That the MVRD Board authorize staff to proceed with engagement on the draft *Climate 2050 Buildings Roadmap*, as presented in the report dated February 10, 2021, titled “Draft *Climate 2050 Buildings Roadmap*”.

**2. REGIONAL PLANNING COMMITTEE REPORTS**

**2.1 Metro 2050 Draft Policy Language - Goals 1 and 2**

That the MVRD Board receive for information the report dated February 19, 2021, titled, “*Metro 2050 Draft Policy Language – Goals 1 and 2.*”

**2.2 Social Equity and Regional Growth Study**

That the MVRD Board receive for information the report dated February 19, 2021, titled “Social Equity and Regional Growth Study”.

**2.3 Metro 2050 Phase 1 Engagement Report**

That the MVRD Board receive for information the report dated February 22, 2021, titled “*Metro 2050 Phase 1 Engagement Report*”.

**3. MAYORS COMMITTEE REPORTS**

**3.1 Vancouver Police Department’s Mental Health Program**

That the MVRD Board write a letter to the Province and the Special Committee on Reforming the Police Act requesting increased regional access to mental health services to partner and support police in all Metro Vancouver communities.

**4. REGIONAL PARKS COMMITTEE REPORTS**

**4.1 Regional Parks Plan Update**

That the MVRD Board authorize staff to proceed with phase 1 of the *Regional Park Plan* update as presented in the report dated February 11, 2021, titled “Regional Parks Plan Update”.

**5. FINANCE AND INTERGOVERNMENT COMMITTEE REPORTS**

**5.1 Allocation of COVID-19 Safe Restart Grant**

That the MVRD Board approve the allocation of COVID-19 Safe Restart Grant funding per the Schedule – Allocation of COVID-19 Safe Restart Grant (Attachment 2) as presented in the report dated February 23, 2021, titled “Allocation of COVID-19 Safe Restart Grant.”

**F. ITEMS REMOVED FROM THE CONSENT AGENDA**

**G. REPORTS NOT INCLUDED IN CONSENT AGENDA**

**1. REGIONAL PARKS COMMITTEE REPORTS**

**1.1 Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021**

*Recommendation a): simple weighted majority vote.] and*

*[Recommendation b): 2/3 weighted majority vote.]*

That the MVRD Board:

- a) give first, second and third reading to *Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021*; and
- b) pass and finally adopt *Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021*.

**2. FINANCE AND INTERGOVERNMENT COMMITTEE REPORTS**

**2.1 Indemnification Authorization Bylaw Updates - MVRD Amending Bylaw 1318**

*Recommendation a) and c): simple weighted majority vote.] and*

*[Recommendation b): 2/3 weighted majority vote.]*

That the MVRD Board:

- a) give first, second and third reading to *Metro Vancouver Regional District Indemnification Authorization Amending Bylaw No. 1318, 2021*;
- b) pass and finally adopt *Metro Vancouver Regional District Indemnification Authorization Amending Bylaw No. 1318, 2021*; and
- c) resolve that, as of the date *Metro Vancouver Regional District Indemnification Authorization Amending Bylaw No. 1318, 2021* is adopted, the Board's resolution of November 27, 2020 relating to indemnification for all regional district officials in relation to the Cleveland Dam spillway gate event of October 1, 2020 ceases to have any force and effect.

**H. MOTIONS FOR WHICH NOTICE HAS BEEN GIVEN**

**I. OTHER BUSINESS**

**1. MVRD Board Committee Information Items and Delegation Summaries**

**J. BUSINESS ARISING FROM DELEGATIONS**

**K. RESOLUTION TO CLOSE MEETING**

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

That the MVRD Board close its regular meeting scheduled for March 26, 2021 pursuant to the *Community Charter* provisions, Section 90 (1) (b), (c) and (e) as follows:

- "90 (1) A part of a board meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:
- (b) personal information about an identifiable individual who is being considered for a regional district award or honour, or who has offered to provide a gift to the regional district on condition of anonymity;
  - (c) labour relations or other employee relations; and
  - (e) the acquisition, disposition or expropriation of land or improvements, if the board or committee considers that disclosure could reasonably be expected to harm the interests of the regional district."

**L. RISE AND REPORT (Items Released from Closed Meeting)**

**M. ADJOURNMENT/CONCLUSION**

That the MVRD Board adjourn/conclude its regular meeting of March 26, 2021.



**METRO VANCOUVER REGIONAL DISTRICT  
BOARD OF DIRECTORS**

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Board of Directors held at 9:02 a.m. on Friday, February 26, 2021 in the 28<sup>th</sup> Floor Boardroom, 4730 Kingsway, Burnaby, British Columbia.

**MEMBERS PRESENT:**

Burnaby, Chair, Director Sav Dhaliwal  
North Vancouver City, Vice Chair Director  
Linda Buchanan\*  
Anmore, Director John McEwen\*  
Belcarra, Director Jamie Ross\*  
Bowen Island, Director David Hocking\*  
Burnaby, Director Pietro Calendino\*  
Burnaby, Director Mike Hurley\*  
Coquitlam, Director Craig Hodge\*  
Coquitlam, Director Richard Stewart\*  
Delta, Director George Harvie\*  
Delta, Director Dylan Kruger\*  
Electoral Area A, Director Jen McCutcheon\*  
Langley City, Director Gayle Martin\*  
Langley Township, Director Jack Froese\*  
Langley Township, Director Kim Richter\*  
Lions Bay, Director Ron McLaughlin\*  
Maple Ridge, Director Mike Morden\*  
New Westminster, Director Jonathan Coté\*  
North Vancouver District, Director Lisa Muri\*  
Pitt Meadows, Director Bill Dingwall\*  
Port Coquitlam, Director Brad West\*

Port Moody, Director Rob Vagramov\*  
Richmond, Director Malcolm Brodie\*  
Richmond, Director Harold Steves\*  
Surrey, Director Linda Annis\*  
Surrey, Director Doug Elford\*  
Surrey, Director Laurie Guerra\*  
Surrey, Director Doug McCallum\*  
Surrey, Director Mandeep Nagra\*  
Surrey, Director Allison Patton\*  
Tsawwassen, Director Ken Baird\*  
Vancouver, Director Christine Boyle\* (arrived at  
9:09 a.m.)  
Vancouver, Director Adriane Carr\*  
Vancouver, Director Melissa De Genova\* (arrived  
at 9:35 a.m.)  
Vancouver, Director Lisa Dominato\*  
Vancouver, Alternate Director Pete Fry\* for  
Kennedy Stewart  
Vancouver, Director Colleen Hardwick\*  
Vancouver, Director Michael Wiebe\*  
West Vancouver, Director Mary-Ann Booth\*  
White Rock, Director Darryl Walker\*

**MEMBERS ABSENT:**

None

**STAFF PRESENT:**

Jerry W. Dobrovolny, Chief Administrative Officer  
Chris Plagnol, Corporate Officer  
Amelia White, Legislative Services Coordinator, Board and Information Services

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

**A. ADOPTION OF THE AGENDA**

**1. February 26, 2021 Regular Meeting Agenda**

**It was MOVED and SECONDED**

That the MVRD Board adopt the agenda for its regular meeting scheduled for February 26, 2021 as circulated.

**CARRIED**

**B. ADOPTION OF THE MINUTES**

**1. January 29, 2021 Regular Meeting Minutes**

**It was MOVED and SECONDED**

That the MVRD Board adopt the minutes for its regular meeting held January 29, 2021 as circulated.

**CARRIED**

**C. DELEGATIONS**

No items presented.

**D. INVITED PRESENTATIONS**

No items presented.

**E. CONSENT AGENDA**

At the request of Directors, the following items were removed from the Consent Agenda, in the following order, for consideration under Section F. Items Removed from the Consent Agenda:

- 8.1 Regional Economic Prosperity Service Update
- 4.1 Regional Parks State of the Assets Report
- 3.1 Metro 2040 Implementation Section Policy Review Recommendations
- 6.1 Assessment of the Fossil Fuel Non-Proliferation Treaty Initiative
- 2.1 Metro Vancouver's Commitment to Reconciliation with Indigenous Peoples

**It was MOVED and SECONDED**

That the MVRD Board adopt the recommendations presented in the following items as presented in the February 26, 2021 MVRD Board Consent Agenda:

- 1.1 Barnston Island Flood Construction Level Study
- 5.1 Major Project Delivery Governance Update
- 5.2 Metro Vancouver's 2020 Zero Waste Conference
- 6.2 2021 Regional District Sustainability Innovation Fund Applications
- 6.3 Endorsement of Host Society for the Howe Sound Ocean Watch Action Committee
- 7.1 External Agency Appointment Process

**CARRIED**

The items and recommendations referred to above are as follows:

**1.1 Barnston Island Flood Construction Level Study**

Report dated January 11, 2021, from Marcin Pachcinski, Division Manager, Electoral Area and Environment and Tom Pearce, Regional Planner, Regional Planning and Housing Services, providing the MVRD Board with the Barnston Island Flood Construction Level Study and communicating next steps regarding engagement with residents, the Katzie First Nation, and relevant government agencies.

*Recommendation:*

That the MVRD Board:

- a) support staff engagement with Barnston Island residents, including the Katzie First Nation, and relevant government agencies based on the consultant report attached to the report titled “Barnston Island Flood Construction Level Study”, dated January 11, 2021; and
- b) direct staff to subsequently bring forward recommendations on implementing a flood construction level for the Electoral Area Committee and MVRD Board’s consideration.

*Adopted on Consent*

**5.1 Major Project Delivery Governance Update**

Report dated February 1, 2021, from Cheryl Nelms, General Manager, Project Delivery, providing a governance update for the delivery of Metro Vancouver’s major capital infrastructure projects and presenting the draft terms of reference for a new major project external expert advisory committee.

*Recommendation:*

That the MVRD Board receive for information the report dated February 1, 2021, titled “Major Project Delivery Governance Update”.

*Adopted on Consent*

**5.2 Metro Vancouver’s 2020 Zero Waste Conference**

Report dated January 26, from Heather Schoemaker, General Manager, External Relations and Ann Rowan, Division Manager, Collaboration and Engagement, External Relations, providing an overview of Metro Vancouver’s tenth annual Zero Waste Conference: *A Future without Waste: Resiliency, Prosperity, Carbon Neutrality – the Circular Economy Solution* held virtually on Friday, November 13, 2020 at the Annacis Research Centre.

*Recommendation:*

That the MVRD Board receive for information the report dated January 26, 2021, titled “Metro Vancouver’s 2020 Zero Waste Conference”.

*Adopted on Consent*

## **6.2 2021 Regional District Sustainability Innovation Fund Applications**

Report dated January 26, 2021, from Roger Quan, Director, Air Quality and Climate Change, presenting ten project recommendations for Sustainability Innovation Funding.

### *Recommendation:*

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

- a) Assessment of Carbon Capture Technology in the Metro Vancouver Region: \$200,000 over two years starting in 2021;
- b) Lights, Camera, Climate Action: \$200,000 over two years starting in 2021;
- c) Sharing Data for Zero Emission Buildings (SDZEB): \$200,000 over two years starting in 2021;
- d) Responding to Climate Emergency: Enhanced Stakeholder Engagement: \$200,000 over two years starting in 2021;
- e) Social and Community Data Land Use Model: \$60,000 in 2021;
- f) Regional Land Use Assessment: \$200,000 over two years starting in 2021;
- g) Housing Retrofit Evolution – Pembina Institute Reframed Initiative: \$200,000 over two years starting in 2021;
- h) Managing Capacity and Reducing Emissions: Real-time Parking Availability in Regional Parks: \$300,000 over three years starting in 2021;
- i) Natural Asset Management in Regional Parks: \$160,000 over two years starting in 2021; and,
- j) Promoting Peatland Recovery in Areas Affected by Wildfire in Burns Bog Ecological Conservancy Area: \$199,000 over two years starting in 2021.

*Adopted on Consent*

## **6.3 Endorsement of Host Society for the Howe Sound Ocean Watch Action Committee**

Report dated January 22, 2021, from Marcin Pachcinski, Division Manager, Electoral Area and Environment, providing the MVRD Board with the opportunity to consider endorsing the Howe Sound Biosphere Region Initiatives Society as the host society for the Ocean Watch Action Committee.

### *Recommendation:*

That the MVRD Board endorse the Howe Sound Biosphere Region Initiative Society as the host society for the Ocean Watch Action Committee.

*Adopted on Consent*

## **7.1 External Agency Appointment Process**

Report dated February 17, 2021, from Chris Plagnol, Corporate Officer, providing information on the process to appoint representatives to external agencies.

*Recommendation:*

That the MVRD Board receive for information the report dated February 17, 2021, titled "External Agency Appointment Process".

*Adopted on Consent*

**F. ITEMS REMOVED FROM THE CONSENT AGENDA**

**2.1 Metro Vancouver's Commitment to Reconciliation with Indigenous Peoples**

Report dated January 22, 2021, from Jessica Beverley, General Manager, Legal Services and Indigenous Relations/Corporate Solicitor and Marino Piombini, Program Manager, Indigenous Relations, responding to the Indigenous Relations Committee's request for information regarding the Truth and Reconciliation Commission's *Calls to Action* and recommendations regarding reconciliation.

9:09 a.m. Director Boyle arrived at the meeting.

**It was MOVED and SECONDED**

That the MVRD Board receive for information the report dated January 22, 2021, titled "Metro Vancouver's Commitment to Reconciliation with Indigenous Peoples."

**CARRIED**

**3.1 Metro 2040 Implementation Section Policy Review Recommendations**

Report dated February 5, 2021, from the Regional Planning Committee, together with the report dated January 21, 2021, from Sean Galloway, Director, Regional Planning and Electoral Area Services and Eric Aderneck, Senior Planner, Regional Planning and Housing Services, seeking MVRD Board's endorsement of the *Metro 2040* Implementation Policy Review recommendations.

On the two recommendations, discussion ensued on the extent to which the current voting threshold is sufficient to maintain and protect industrial land.

9:35 a.m. Director De Genova arrived at the meeting.

**Distinct Propositions**

At the request of a Director, the recommendation was separated into distinct propositions.

The first proposition was before the Board.

**It was MOVED and SECONDED**

That the MVRD Board endorse the *Metro 2040* Implementation Section Policy Review recommendation #1, outlined in the report dated January 21, 2021, titled "*Metro 2040* Implementation Section Policy Review Recommendations", as follows:

*Eliminate the requirement for a regional public hearing for Type 2 amendments, and replace with other means of meaningful, and regionally based public engagement.*

Question was then called on the first proposition and it was

**CARRIED**

The second proposition was before the Board and a Director requested a recorded vote be taken.

**It was MOVED and SECONDED**

That the MVRD Board endorse the *Metro 2040* Implementation Section Policy Review recommendation #2, outlined in the report dated January 21, 2021, titled "*Metro 2040* Implementation Section Policy Review Recommendations", as follows:

*Change the type of amendment for applications converting Industrial land from a Type 3 to a Type 2 amendment.*

The question was then called on the second proposition and it was

Director	Number of Votes	
	Against	For
Linda Annis	4	
Ken Baird	1	
Mary-Ann Booth	3	
Christine Boyle	5	
Malcolm Brodie	5	
Linda Buchanan	3	
Pietro Calendino		4
Adriane Carr	5	
Jonathan Côté		4
Melissa De Genova	5	
Sav Dhaliwal		4
Bill Dingwall	1	
Lisa Dominato	4	
Doug Elford	5	
Jack Froese	3	
Pete Fry	5	
Laurie Guerra	4	
Colleen Hardwick	4	
George Harvie	3	
David Hocking		1
Craig Hodge	3	
Mike Hurley		4
Dylan Kruger	3	
Gayle Martin	2	

Director	Against	For
Doug McCallum	5	
Jen McCutcheon		1
John McEwen	1	
Ron McLaughlin	1	
Mike Morden	5	
Lisa Muri		5
Mandeep Nagra	4	
Allison Patton	4	
Kim Richter	3	
Jamie Ross		1
Harold Steves		5
Richard Stewart		4
Rob Vagramov		2
Darryl Walker	1	
Brad West		3
Michael Wiebe		4
<b>Total Votes</b>	<b>92</b>	<b>42</b>

**DEFEATED**

#### **4.1 Regional Parks State of the Assets Report**

Report dated January 20, 2021, from Jeffrey Fitzpatrick, Division Manager, Design and Development, Regional Parks, seeking the MVRD Board's endorsement of the *Regional Parks State of the Assets Report*, and support for incorporating the findings of the report in the Regional Parks Asset Management Plan.

##### **It was MOVED and SECONDED**

That the MVRD Board:

- receive for information the report dated January 20, 2021, titled "Regional Parks State of the Assets Report"; and
- direct staff to incorporate the findings of the *Regional Parks State of the Assets Report* in the Regional Parks Asset Management Plan.

**CARRIED**

#### **6.1 Assessment of the Fossil Fuel Non-Proliferation Treaty Initiative**

Report dated January 20, 2021, from Nicole Chan, Project Engineer and Conor Reynolds, Division Manager, Air Quality and Climate Change Policy, providing the Board with an assessment of the Fossil Fuel Non-Proliferation Treaty Initiative and recommending a course of action for Metro Vancouver.

##### **Main Motion**

##### **It was MOVED and SECONDED**

That the MVRD Board:

- endorse the call for a Fossil Fuel Non-Proliferation Treaty as presented in the report dated January 20, 2021, titled "Assessment of the Fossil Fuel Non-Proliferation Treaty Initiative"; and

- b) send letters urging the Canadian and BC governments to support the global initiative for a Fossil Fuel Non-Proliferation Treaty.

Discussed ensued regarding the aspirational aspects of the initiative versus the ramifications of ending the production of coal, oil and gas on the workforce.

The Board considered a request to refer the matter to committee.

**Referral Motion**

**It was MOVED and SECONDED**

That the MVRD Board refer the following motion to the Climate Action Committee for further discussion and analysis with affected parties:

That the MVRD Board:

- a) endorse the call for a Fossil Fuel Non-Proliferation Treaty as presented in the report dated January 20, 2021, titled “Assessment of the Fossil Fuel Non-Proliferation Treaty Initiative”; and
- b) send letters urging the Canadian and BC governments to support the global initiative for a Fossil Fuel Non-Proliferation Treaty.

**CARRIED**

**8.1 Regional Economic Prosperity Service Update**

Report dated February 17, 2021, from David Flaks, President, Regional Economic Prosperity Service, providing an overview of the key economic challenges facing the Metro Vancouver region and highlighting recent activities of the Regional Economic Prosperity Service based on the Metro Vancouver Regional Economic Prosperity Service Business Plan.

Members were provided a presentation on the fast transitioning economy and the strategy for activating the Regional Economic Prosperity Business Plan.

**It was MOVED and SECONDED**

That the MVRD Board receive for information the report dated, February 17, 2021, titled “Regional Economic Prosperity Service Update”.

**CARRIED**

Presentation material titled “Regional Economic Prosperity Service” is retained with the February 26, 2021 Metro Vancouver Regional District Board agenda.

**G. REPORTS NOT INCLUDED IN CONSENT AGENDA**

**1.1 Regional Growth Strategy Amendment Bylaw No. 1310 – Re-designating Regional Parks Lands to Conservation and Recreation**

Report dated February 4, 2021, from Chris Plagnol, Director/Corporate Officer, Board and Information Services and Sean Galloway, Director, Regional Planning



and Electoral Area Services, providing the MVRD Board with a summary of comments received on *Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1310, 2020*, and recommending amending the proposed Amending Bylaw to address concerns expressed by the District of North Vancouver staff and the City of New Westminster staff.

**It was MOVED and SECONDED**

That the MVRD Board:

- a) receive for information the comments from the affected local governments and agencies as presented in the report dated February 4, 2021, titled “Regional Growth Strategy Amendment Bylaw No. 1310 – Re-designating Regional Park Lands to Conservation and Recreation”;
- b) rescind third reading of *Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1310, 2020*;
- c) amend *Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1310, 2020* as outlined in the report dated February 4, 2021, titled “Regional Growth Strategy Amendment Bylaw No. 1310 – Re-designating Regional Park Lands to Conservation and Recreation”; and,
- d) give third reading of *Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1310, 2020*, as amended.

**CARRIED**

Members identified a typographical error in the recommendation and it was corrected prior to consideration below.

**It was MOVED and SECONDED**

That the MVRD Board pass, and adopt *Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1310, 2020*.

**CARRIED**

**H. MOTIONS FOR WHICH NOTICE HAS BEEN GIVEN**

No items presented.

**I. OTHER BUSINESS**

**1. MVRD Board Committee Information Items and Delegation Summaries**

**It was MOVED and SECONDED**

That the MVRD Board receive for information the MVRD Board Committee Information Items and Delegation Summaries, dated February 26, 2021.

**CARRIED**

**J. BUSINESS ARISING FROM DELEGATIONS**

No items presented.

**K. RESOLUTION TO CLOSE MEETING**

**It was MOVED and SECONDED**

That the MVRD Board close its regular meeting scheduled for February 26, 2021 pursuant to the Community Charter provisions, Section 90 (1) (a), (c), (g) and (i) as follows:

- “90 (1) A part of a board meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:
- (a) personal information about an identifiable individual who holds or is being considered for a position as an officer, employee or agent of the regional district or another position appointed by the regional district;
  - (c) labour relations or other employee relations;
  - (g) litigation or potential litigation affecting the regional district; and
  - (i) the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose.”

**CARRIED**

**L. RISE AND REPORT (Items Released from Closed Meeting)**

No items presented.

**M. ADJOURNMENT/CONCLUSION**

**It was MOVED and SECONDED**

That the MVRD Board adjourn its regular meeting of February 26, 2021.

**CARRIED**

(Time: 10:47 a.m.)

CERTIFIED CORRECT

---

Chris Plagnol, Corporate Officer

---

Sav Dhaliwal, Chair

44027138 FINAL

---

To: Climate Action Committee

From: John Lindner, Air Quality Planner  
Derek Jennejohn, Lead Senior Engineer  
Parks and Environment Department

Date: February 10, 2021 Meeting Date: March 3, 2021

Subject: **Draft Clean Air Plan**

---

### RECOMMENDATION

That the MVRD Board authorize staff to proceed with engagement on the draft *Clean Air Plan*, based on the report dated February 10, 2021, titled “Draft *Clean Air Plan*”.

---

### EXECUTIVE SUMMARY

This report presents the draft *Clean Air Plan*, Metro Vancouver’s plan to reduce greenhouse gas emissions and improve air quality in our region over the next 10 years. The draft Plan was developed based on feedback received in 2019 and 2020, as well as recent modelling work. The draft Plan presents actions to reduce air contaminant emissions (including health-harming air contaminants and greenhouse gases) from transportation, buildings and industry, and will support engagement and development of the final *Clean Air Plan*. The draft Plan also outlines a process to introduce equity considerations. The *Clean Air Plan* will support *Climate 2050*’s vision of a carbon neutral region by identifying the initial actions needed to meet the region’s 2030 greenhouse gas target.

### PURPOSE

To seek MVRD Board authorization to proceed with engagement on the draft *Clean Air Plan*.

### BACKGROUND

Metro Vancouver adopted its first regional air quality management plan in 1994, with subsequent plans adopted in 2005 and 2011. These management plans have guided continuous improvement in regional air quality, addressing both common air contaminants and greenhouse gases.

Development of the current *Clean Air Plan*, coincides with development of the *Climate 2050 Roadmaps*. At the October 4, 2019 meeting of the MVRD Board, the following motion was passed:

*That the MVRD Board, based on the report dated August 27, 2019, titled “Integrated Public Engagement Process for the Metro Vancouver Clean Air Plan and Climate 2050”:*

- a) approve the scope of the proposed Clean Air Plan as presented in the Clean Air Plan Background;*
- b) authorize staff to proceed with the engagement process on the Clean Air Plan; and*
- c) direct staff to integrate the Clean Air Plan engagement process with the Climate 2050 engagement process.*

This report responds to Board direction by presenting a draft *Clean Air Plan*, developed with input from the engagement process. Staff are seeking authorization from the MVRD Board to proceed with engagement on the draft *Clean Air Plan*, with an aim to finalize the plan by the end of 2021.

## **DRAFT CLEAN AIR PLAN**

The draft *Clean Air Plan* (Attachment 1) contains actions that will reduce air contaminant emissions and impacts, including greenhouse gases, in our region over the next 10 years, and in doing so will build the foundation to support the 30-year goal of a carbon neutral region by 2050. These actions will also improve air quality in the region, protecting human health and the environment, and are harmonized with multiple issue areas in *Climate 2050*. The draft *Clean Air Plan* focuses on actions that Metro Vancouver has the authority to implement. The Plan also identifies actions for implementation by other orders of government, so collaboration and coordination will be essential to achieving the Plan's regional air quality and greenhouse gas (GHG) targets.

The draft *Clean Air Plan* is structured around the following elements:

- **Vision:** Metro Vancouver is a carbon neutral region where residents experience healthy, clean and clear air.
- **Regional 2030 targets:**
  - Reduce regional GHG emissions by 45% from 2010 levels (aligned with *Climate 2050*);
  - Ambient air quality in the region meets or is better than health-based ambient air quality objectives and standards set by Metro Vancouver, and the BC and Canadian governments;
  - Increase the amount of time that visual air quality is classified as excellent.
- Ten **guiding principles** to guide decisions around strategies and actions.
- **Goals, targets, strategies and actions** for six issue areas: Transportation; Buildings; Industry; Agriculture; Health; and Measure, Monitor and Regulate.

Prior to proceeding with engagement, the draft *Clean Air Plan* will be formatted to match the look and feel of other documents intended for a public and stakeholder audience.

## **Key Strategies and Actions in the Draft *Clean Air Plan***

The key strategies and actions to help achieve the vision and targets of the *Clean Air Plan* include:

- **Transportation:**
  - Accelerating the transition to zero emission passenger and commercial vehicles with more stringent sales targets and emission requirements, along with more incentives for new and used zero emission vehicles, and associated charging and refueling infrastructure;
  - Reducing driving in the region by increasing funding for public transit and active transportation networks, as well as supporting development of mobility pricing and updating local parking strategies;
  - Reducing marine, rail and aviation emissions through long-term provincial and federal emission reduction strategies;
- **Buildings:**
  - Accelerating the transition to zero emission buildings with GHG requirements for existing large and small buildings, supported by building code changes, incentives and outreach;
  - Making wood heating cleaner through regulation and incentives;
- **Industry:**
  - Reducing emissions from industrial facilities with more stringent emission requirements, incentives and sector-specific regulations;
  - Reducing non-road emissions with more stringent emission requirements and incentives;
  - Reducing business emissions with regional guidance on low carbon procurement; and

- **Increasing the supply of clean, renewable fuels** for hard to decarbonize sectors such as freight and industry.

The goals, targets, strategies and actions in the draft *Clean Air Plan* incorporate feedback received from the public, stakeholders and other governments, which was summarized in a report to the Climate Action Committee at its November 13, 2020 meeting. That feedback was received in response to the discussion papers on buildings, industry, transportation, and agriculture that were presented to the Climate Action Committee and MVRD Board in 2019 and 2020.

The draft *Clean Air Plan* also outlines a process to introduce equity into air quality and climate action planning, by developing an approach that includes enhanced community input, equity evaluation tools, and health impact assessments. Staff will carry out additional work with partners to conduct an equity review of the draft Plan, and the proposed approach, before presenting the final *Clean Air Plan* for Board approval.

Feedback provided by the Committee on the attached draft *Clean Air Plan* will be incorporated into the draft Plan prior to initiating engagement.

#### **Potential Emission Impacts of the Draft *Clean Air Plan***

Implementation of the actions in the draft *Clean Air Plan* is critical to achieving regional emission reduction targets. Initial modelling of the draft *Clean Air Plan* estimated the potential impacts of actions on regional emissions, supported by the initial carbon neutral modelling presented to the Climate Action Committee on November 13, 2020.

With respect to emissions of health-harming air contaminants, regional air quality is generally good, with the emphasis on continuous improvement and maintaining compliance with the applicable ambient air quality standards. The modelling indicates that if all the actions in the draft Plan are implemented, regional emissions of common air contaminants could be reduced by over 7,000 tonnes, with potential health benefits of up to \$1 billion.

From a GHG perspective, the modelling indicates that if all the actions in the draft Plan are implemented, regional GHGs could be reduced by approximately 2 million tonnes by 2030, or 15% below 2010 levels. While significant, these potential emission reductions do not achieve the 2030 target to reduce regional GHG emissions by 45% from 2010 levels. With this in mind, 2030 GHG targets have been established for each issue area, which go beyond the initial modelling results such that the cumulative benefit aligns with the 45% target, while accounting for the technological readiness and economic considerations of different sectors. Staff will continue to work with residents, businesses and governments to identify additional solutions, and additional climate actions will be identified as the *Climate 2050 Roadmaps* are developed and implemented.

#### **Relationship Between *Clean Air Plan* and *Climate 2050***

The *Clean Air Plan* will be Metro Vancouver's fourth air quality and greenhouse gas management plan, building on the 2011 *Integrated Air Quality and Greenhouse Gas Management Plan*. The *Clean Air Plan* supports *Climate 2050's* vision of a carbon neutral region by identifying the initial actions needed to support the region's 2030 greenhouse gas target. The greenhouse gas actions in the draft

*Clean Air Plan* will also be included in the relevant *Climate 2050 Roadmaps*, such as the draft *Buildings Roadmap*, which is the subject of a separate report in the Committee's March 2021 agenda package.

### **ENGAGEMENT PROCESS**

Metro Vancouver is committed to engaging with the public, stakeholders and other governments, including First Nations, and incorporating their feedback into the *Clean Air Plan*.

The proposed engagement process will be conducted in accordance with the Metro Vancouver Board Policy on Public Engagement and builds on the work completed to date to develop the draft *Clean Air Plan*. The engagement plan (Attachment 2) is designed to reach a broad audience to discuss the purpose and benefits of the *Clean Air Plan*. Engagement will also seek feedback from specific sectors and organizations, which could include support, concerns about implementation or impacts, and ideas for innovation and collaboration.

Due to public health regulations, engagement events are expected to be virtual and online, and staff are planning creative and engaging materials to encourage feedback. Feedback will be reported to the Committee, highlighting how it informed the final *Clean Air Plan*. Staff intend to bring the final *Clean Air Plan* forward for adoption later in 2021, following completion of the engagement period and incorporation of the feedback received.

### **ALTERNATIVES**

- 1) That the MVRD Board authorize staff to proceed with engagement on the draft *Clean Air Plan*, based on the report dated February 10, 2021, titled "Draft *Clean Air Plan*".
- 2) That the MVRD Board receive for information the report dated February 10, 2021, titled "Draft *Clean Air Plan*", and provide alternate direction to staff.

### **FINANCIAL IMPLICATIONS**

Under Alternative 1, the resources required to develop and engage on the draft *Clean Air Plan* have been approved in program budgets for 2021, including staff time and consulting expenditures. Continued integration of engagement activities for the *Clean Air Plan* with the *Climate 2050 Roadmaps* is intended to make the best use of resources available, as well as minimize time commitments for interested parties providing feedback.

### **CONCLUSION**

Metro Vancouver is developing a *Clean Air Plan* to identify actions to reduce emissions of air contaminants, including greenhouse gases, in our region over the next 10 years. The *Clean Air Plan* supports *Climate 2050* by identifying the actions to meet the region's 2030 greenhouse gas target. The draft *Clean Air Plan* outlines major strategies and actions in sectors such as transportation, buildings and industry. These strategies and actions would significantly reduce emissions and impacts in the region, and support the transition to a carbon neutral region.

If authorized by the Board, Metro Vancouver intends to seek feedback from the public, stakeholders and other governments, including First Nations, to support the final development of the *Clean Air Plan*. Staff recommend Alternative 1, that the Board direct staff to proceed with engagement on the draft *Clean Air Plan*.

**Attachments** (44092301)

1. Draft *Clean Air Plan*, dated March 2021 (44041459)
2. Engagement Plan for the Metro Vancouver *Clean Air Plan* (43857026)

43696213





**Your feedback is valued.**

The draft *Clean Air Plan* was prepared in winter 2020/2021, and introduced for public and stakeholder comment during the COVID-19 pandemic. Metro Vancouver assesses work plans on a case by case basis to determine if adjustments are required due to the COVID-19 pandemic response, including how engagement is conducted. For air quality and climate change programs and initiatives, this means continuing with work plans that protect human health and the environment, and adjusting how we approach engagement.

Goals and targets in Metro Vancouver's climate-related plans are science-based and remain a priority. The interim target of a 45% reduction in greenhouse gas emissions below 2010 levels by 2030 has a time horizon of less than ten years. Pursuing a carbon neutral region by 2050 requires taking bold action now. Across the globe, the pandemic response has provided a glimpse of what is possible and what we can achieve with coordinated efforts and common goals.

Public feedback is valued and project teams continue to seek input, create online feedback opportunities, and ensure feedback is reflected as policy development moves forward. Documents, feedback forms, and direct email links to the project team are all posted to the Metro Vancouver website, [www.metrovancouver.org](http://www.metrovancouver.org), search "Clean Air Plan".

## Executive Summary

The *Clean Air Plan* is Metro Vancouver's air quality and greenhouse gas management plan. Actions in the Plan will reduce air contaminant emissions and impacts, including greenhouse gases, over the next 10 years, and in doing so support the 30-year goal of a carbon neutral region by 2050. This management plan also helps improve air quality for the region, to protect human health and the environment.

The *Clean Air Plan* focuses on actions that Metro Vancouver has the authority to implement, and also identifies actions for implementation by others. The Plan targets air contaminants that have the potential to harm human health, together with greenhouse gases, as many sources in the region emit both types of air contaminants. The *Clean Air Plan* is developed with input from across the region, and will be implemented through to 2030. Metro Vancouver's website includes more [information](#).

## Challenge

Air quality impacts from health-harming air contaminants such as fine particulate matter and nitrogen dioxide, have significant health costs, and the most impact on our youngest, oldest and residents with underlying health conditions. Climate change, while less evident day-to-day, is already impacting our health and our environment, and those impacts will become more evident in coming years. Climate change and air quality impacts can harm some neighbourhoods, households and individuals more than others.

Metro Vancouver, together with its member jurisdictions, has been taking action on air quality and climate change for more than twenty years. **But governments, businesses and residents need to do more to reduce our contributions to climate change and improve our regional air quality, both of which will protect human health and the environment.**

## Vision

Metro Vancouver is a carbon neutral region where residents experience healthy, clean and clear air.

## Regional 2030 Targets

1. Reduce regional greenhouse gas emissions by 45% from 2010 levels.
2. Ambient air quality in the region meets or is better than health-based ambient air quality objectives and standards set by Metro Vancouver, the BC Government and Government of Canada.
3. Increase the amount of time that visual air quality is classified as excellent.

If all the actions in this *Clean Air Plan* are implemented, the region will see further air quality improvements, and accelerate progress towards our long-term goal of a carbon neutral region by 2050.

## Guiding Principles

The Guiding Principles describe the fundamental values that guided development of the Plan.

- |                              |                                |
|------------------------------|--------------------------------|
| 1. Ambitious                 | 6. Continuous Improvement      |
| 2. Evidence-based            | 7. Prioritize Co-benefits      |
| 3. Equitable                 | 8. Dynamic                     |
| 4. Inclusive & Collaborative | 9. Transparent                 |
| 5. Preventative              | 10. Comprehensive & Integrated |

# Summary of Actions

## Equity

Metro Vancouver will develop a strategic approach to assessing equity in air quality and climate change programs. This will include community input, health impact assessments and other equity evaluation tools so that all residents benefit from air quality and climate change programs.

## Transportation

The transition to zero emission passenger and commercial vehicles will be supported by sales targets, improved emission standards, more renewable fuels and a charging and refueling strategy. Personal transportation choices will be supported by increased funding for transit and active transportation and improved parking policies. Longer-term clean fuel strategies and engine technologies will reduce rail, marine and aviation emissions.

**metro**vancouver





### Industry & Business

Industry will benefit from cleaner fuels and better emissions controls, supported by stronger emissions standards and regional collaboration. Replacement of older non-road equipment models will be accelerated with more stringent regulations as well as incentives.

### Buildings

New and existing buildings will meet more stringent greenhouse gas standards and offer reporting on energy use and emissions. More households can benefit from retrofit programs by enhancing financial tools. Residential wood burning rules will reduce health impacts from fine particulate matter.

### Agriculture

Agricultural equipment and greenhouses will reduce emissions through improved energy efficiency and shifting to renewable energy. Air quality impacts from burning vegetative waste will be reduced through alternative practices.

## Issue Area 2030 Targets

### Transportation Targets

- Passenger vehicles:
  - 65% reduction in greenhouse gas emissions, from 2010 levels
- Commercial vehicles, rail locomotives, marine vessels and aircraft:
  - 35% reduction in greenhouse gas emissions, from 2010 levels
- Passenger and commercial vehicles, rail locomotives, marine vessels and aircraft:
  - 25% reduction in diesel particulate matter emissions, from 2020 levels
  - 40% reduction in nitrogen oxides emissions, from 2020 levels

### Buildings Targets

- All buildings:
  - 35% reduction in greenhouse gas emissions from buildings, from 2010 levels
  - 35% reduction in fine particulate matter emissions from buildings, from 2020 levels
  - 15% reduction in nitrogen oxides emissions from buildings, from 2020 levels
- New buildings:
  - All new buildings are zero emissions in their operations
  - All new buildings produce 40% less embodied emissions from construction

### Industry Targets

- Industrial facilities
  - 35% reduction in greenhouse gas emissions, from 2010 levels
  - 10% reduction in fine particulate matter emissions, from 2020 levels
  - 10% reduction in nitrogen oxides emissions, from 2020 levels
- Non-road
  - 35% reduction in greenhouse gas emissions, from 2010 levels
  - 50% reduction in diesel particulate matter emissions, from 2020 levels

### Agriculture Targets

- 35% reduction in greenhouse gas emissions, from 2010 levels
- 10% reduction in fine particulate matter, from 2020 levels

### Measure, Monitor and Regulate Target

- 98% reliability of ambient air quality monitoring network

## Table of Contents

Executive Summary.....	3
Challenge.....	3
Regional 2030 Targets.....	3
Summary of Actions .....	4
Issue Area 2030 Targets.....	6
Table of Contents.....	7
Metro Vancouver .....	8
Mission.....	8
Building a Resilient Region.....	9
Plan Context.....	10
Challenges and Opportunities.....	10
Roles and Responsibilities.....	11
Relationship of <i>Clean Air Plan</i> to other Metro Vancouver Roles and Strategic Plans .....	12
<i>Clean Air Plan</i> .....	15
Vision.....	15
Regional 2030 Targets.....	15
Guiding Principles .....	15
Equity .....	16
Potential Impacts of <i>Clean Air Plan</i> .....	17
Structure and Implementation .....	18
Issue Area 1: Transportation.....	21
Issue Area 2: Buildings .....	34
Issue Area 3: Industry and Business.....	44
Issue Area 4: Agriculture .....	52
Issue Area 5: Health .....	55
Issue Area 6: Measure, Monitor and Regulate .....	57
Glossary.....	61

# Metro Vancouver

Underlined> words are key concepts defined in the Glossary on Page 62.

Metro Vancouver is a federation of 21 municipalities, one Electoral Area and one Treaty First Nation, working collaboratively in planning and providing vital utility and local government services to 2.7 million people. Core services include drinking water, sewage treatment, and solid waste management, along with regional services like regional parks, affordable housing, regional land use planning and air quality and climate action that help keep the region one of the most livable in the world.

## Mission

Metro Vancouver's mission is framed around three broad roles.

### 1. Serve as a Regional Federation

Serve as the main political forum for discussion of significant community issues at the regional level, and facilitate the collaboration of members in delivering the services best provided at the regional level.

### 2. Deliver Core Services

Provide regional utility services related to drinking water, liquid waste and solid waste to members. Provide regional services, including parks and affordable housing, directly to residents and act as the local government for Electoral Area A.

### 3. Plan for the Region

Carry out planning and regulatory responsibilities related to the three utility services as well as air quality and climate action, regional planning, regional parks, Electoral Area A, affordable housing, labour relations, regional economic prosperity, and regional emergency management.



## Building a Resilient Region

Building the resilience of the region is at the heart of Metro Vancouver's work. Each of Metro Vancouver's regional plans and strategies adopts a vision, guiding principles, goals, strategies, actions and key performance measures that will support a more resilient, low carbon and equitable future. Metro Vancouver's interconnected plans and strategies are guided by the *Board Strategic Plan*, which provides strategic direction for each of Metro Vancouver's legislated areas of responsibility, and the Long-Term Financial Plan, which projects total expenditures for capital projects and operations that sustain important regional services and infrastructure. Together these documents outline Metro Vancouver's policy commitments and specific contributions to achieving a resilient region.





## Plan Context

### Challenges and Opportunities

The air we breathe is mostly nitrogen and oxygen, and also contains air contaminants, some of which are damaging. Higher levels of air contaminants degrade air quality and cause climate change, with associated impacts on human health and the environment. The air contaminants with the most impact in the Metro Vancouver region are described below.

- Health-harming air contaminants damage air quality, harming human health and the environment. Some impact visual air quality, and others have odorous characteristics. Health-harming air contaminants include fine particulate matter, diesel particulate matter, ground-level ozone, nitrogen dioxide, sulphur dioxide and volatile organic compounds.
- Greenhouse gases trap heat and are the cause of climate change. Greenhouse gases include carbon dioxide, methane, nitrous oxide, halocarbons (e.g., refrigerants), black carbon and ground-level ozone.

**Air Quality:** Residents in the region generally experience good air quality today, due to air quality management efforts by Metro Vancouver and others in recent decades. Air quality monitoring by Metro Vancouver shows that most health-harming air contaminant levels have been improving, even while the region's population has grown.

**Greenhouse Gases:** Climate change projections for the region for 2050 include longer, hotter and drier summers, warmer and wetter fall and winter seasons with decreased snowpack, and more extreme weather events. Greenhouse gas emissions have both local and global impacts and we all have a shared responsibility to take local climate action.

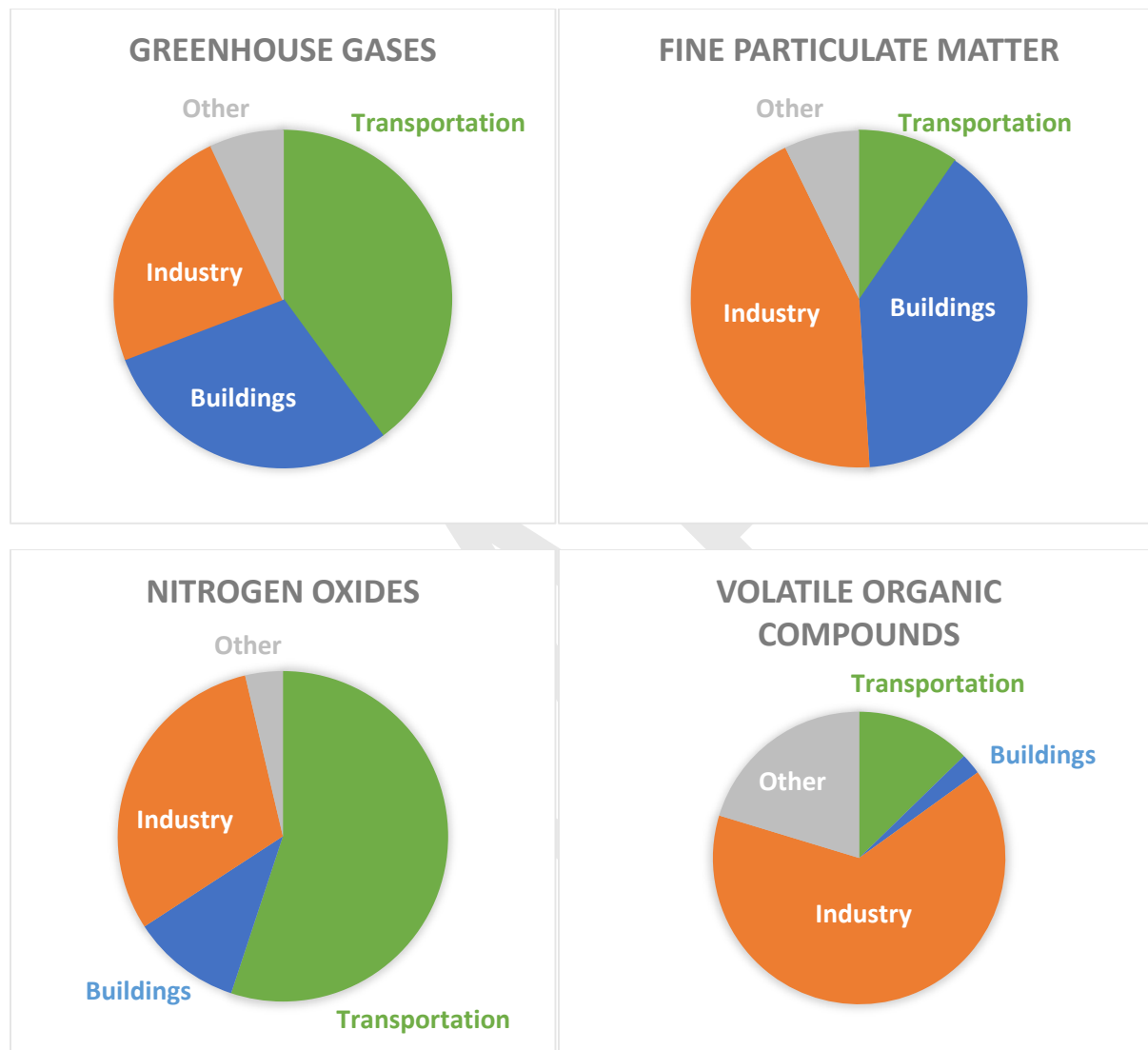
#### CALL OUT BOX

##### *How degraded air quality and climate change can harm residents in Metro Vancouver*

Higher levels of health-harming air contaminants can cause heart and lung disease and cancer, and increases the risk of hospitalization, asthma and bronchitis. Children, the elderly, people who are active outdoors, and those with pre-existing health conditions are at higher risk from air quality impacts. Health researchers have demonstrated that there are no known safe levels for some health-harming air contaminants, including fine particulate matter, ground-level ozone and nitrogen dioxide. Health Canada estimates that at least 1,600 British Columbians die prematurely every year due to those three contaminants and many more live with the associated health effects.

As the climate changes, wildfires are expected to become more intense and more frequent, impacting residents with harmful smoke. Sea level rise, increased storm surge and more extreme rainfall all increase the risk of flooding in Metro Vancouver communities, which can hurt residents, their homes and businesses. More extreme heat can cause heat stress in vulnerable populations. Some households are better able to prepare for and protect themselves from climate change and air quality impacts.

**Regional Emission Sources:** Emissions in the Metro Vancouver region are primarily from burning fossil fuels such as gasoline, diesel, natural gas and coal, as well as burning renewable fuels such as wood. The major sources of regional emissions are transportation, buildings and industry, as shown in the graphics below, with smaller contributions from agriculture, waste management and other sources.



Metro Vancouver, together with its member jurisdictions, has been taking action on air quality and climate change for decades. **But governments, businesses and residents need to do more to reduce our contributions to climate change, improve our regional air quality, and protect human health and the environment.**

The *Clean Air Plan* is Metro Vancouver's fourth regional air quality and greenhouse gas management plan. The Plan is developed with input from across the region, and will be implemented through to 2030.

### Roles and Responsibilities

Metro Vancouver is responsible for managing and regulating air contaminants in the region under authority delegated by the BC Government in the *Environmental Management Act*. Metro Vancouver's

management program includes developing plans, strategies and regulations; promoting compliance with permits and regulations; monitoring air quality; and delivering awareness and incentive programs (see Issue Area 6 for more details).

Metro Vancouver also coordinates with other governments and regional partners on air quality and greenhouse gas management. Coordination will be essential to achieving the draft Plan's regional air quality and greenhouse gas targets because some key actions will be led by other governments. The roles and responsibilities of Metro Vancouver's key partners are described below.

- The **Government of Canada** sets emission standards for on-road vehicles, non-road equipment, rail locomotives, home heating appliances, fuels, and some industrial sources. The Government of Canada coordinates the national Air Quality Management System to improve air quality in Canada, and regulates federal undertakings such as ports and airports.
- The **BC Government** sets emission standards for fuels and other emission sources, and manages air quality in BC for areas outside of Metro Vancouver, including adjacent regional districts.
- **First Nations** in the Metro Vancouver region provide services to their communities and a number of First Nations in the region have adopted sustainability and/or land-use plans. Tsawwassen First Nation is a Metro Vancouver member jurisdiction and has similar authority and powers as other member jurisdictions with respect to climate change.
- **Member jurisdictions** (i.e., local municipalities) are responsible for land-use policy and enforcing building codes. Many member jurisdictions have adopted climate action and environmental plans, and are implementing actions to reduce emissions within their jurisdictions.
- **TransLink** plans, finances and operates public transit in the region, and shares responsibility for the major road and regional cycling networks with municipalities and the BC Government. The Government of Canada and BC Government also fund transit and transportation projects.
- The **Vancouver Fraser Port Authority** oversees federal port lands in the region. It protects the environment, considers local communities and safely facilitates Canada's trade objectives.
- The **Fraser Valley Regional District** shares the Canadian Lower Fraser Valley airshed with Metro Vancouver. The Fraser Valley Regional District has air quality planning authority and operates air quality programs.
- **Health authorities** provide research and information on the health impacts of air contaminants to support air quality management.
- **Energy utilities** such as BC Hydro and FortisBC supply energy for residents and businesses, as well as provide incentives to owners to reduce emissions and energy consumption.

#### Relationship of *Clean Air Plan* to other Metro Vancouver Roles and Strategic Plans

The *Clean Air Plan* supports the vision of *Climate 2050*, Metro Vancouver's strategy to transition the region to a low carbon and resilient future, increasing the health, well-being and prosperity of Metro Vancouver residents. The *Clean Air Plan* identifies the initial actions needed to meet the region's 2030 greenhouse gas target – a 45% reduction in regional greenhouse gas emissions from 2010 levels. Achieving the 45% target sets the foundation for moving the region towards the *Climate 2050* goal of a carbon neutral region by 2050. A series of *Climate 2050 Roadmaps* describe the current opportunities and best approaches to reach climate targets for the region.

## CALL OUT BOX

### *Land-use and growth management supports emission reductions*

Metro Vancouver, in partnership with its member jurisdictions, manages regional land-use and growth through the *Regional Growth Strategy (Metro Vancouver 2040: Shaping our Future)*. The Strategy outlines a vision for a compact region with a network of complete communities well connected by public transit, and protected agricultural and natural areas. Strong regional land-use policies are foundational to achieving the targets in the *Clean Air Plan*. Compact, complete communities promote walking, cycling and public transit, which reduce driving emissions. They also support higher density communities that reduce emissions from buildings. Containing urban growth protects agricultural, rural, conservation and recreation lands, allowing natural areas to absorb and store carbon dioxide. The Strategy also establishes greenhouse gas targets for the region.

The *Clean Air Plan* also supports and is supported by actions by other Metro Vancouver services. The table below outlines the links between the *Clean Air Plan* and actions and plans under other Metro Vancouver services.

METRO VANCOUVER SERVICE	LINKS WITH AIR QUALITY AND GREENHOUSE GAS MANAGEMENT
Regional Planning	<ul style="list-style-type: none"><li>- See “Land use and growth management supports emission reductions” info box.</li></ul>
Water Services	<ul style="list-style-type: none"><li>- Contamination of water resources is minimized by reducing air contaminant emissions.</li><li>- Natural areas in the watersheds help sequester carbon.</li><li>- Management of natural areas and a wildfire suppression program reduce wildfire risks, which would impact air quality.</li></ul>
Housing	<ul style="list-style-type: none"><li>- The <i>Metro Vancouver Housing 10-Year Plan</i> sets targets to reduce energy consumption by 25% for major rehabilitation and new construction, and reduce greenhouse gas emissions in the housing portfolio by 45% by 2030 through electrification.</li></ul>
Regional Parks	<ul style="list-style-type: none"><li>- Regional greenways help reduce traffic emissions.</li><li>- Natural areas in regional parks help sequester carbon.</li><li>- Park land acquisition protects green spaces and bolsters carbon sequestration.</li><li>- Management of natural areas and a wildfire suppression program reduce wildfire risks, which would impact air quality.</li></ul>
Liquid Waste Services	<ul style="list-style-type: none"><li>- Pursuing opportunities to create low carbon energy from liquid waste streams and residuals, to help displace fossil fuel use.</li><li>- Biosolids used for land reclamation and restoration help sequester carbon in soil.</li><li>- Odour control systems reduce odours from the sewer system and wastewater treatment plants.</li><li>- Increasing energy efficiency and switching to clean, renewable energy both reduce emissions.</li></ul>

Solid Waste Services	<ul style="list-style-type: none"> <li>- Diversion and circular economy processes minimize the generation of solid waste, which reduces emissions of greenhouse gases and other air contaminants.</li> <li>- Landfill gas management reduces emissions of methane, a powerful greenhouse gas.</li> <li>- Pursuing opportunities to create low carbon energy from solid waste streams, to help displace fossil use.</li> </ul>
----------------------	---

DRAFT

## Clean Air Plan

The *Clean Air Plan* is Metro Vancouver's fourth regional air quality and greenhouse gas management plan. Actions in the Plan will reduce air contaminant emissions and impacts, including greenhouse gases, in our region over the next 10 years, and in doing so support the 30-year goal of a carbon neutral region by 2050. These actions will improve air quality in the region, protecting human health and the environment.

### Vision

Metro Vancouver is a carbon neutral region where residents experience healthy, clean and clear air.

### Regional 2030 Targets

The regional 2030 targets are quantitative measures that help to describe when we have achieved the vision.

1. Reduce regional greenhouse gas emissions by 45% from 2010 levels.
2. Ambient air quality in the region meets or is better than health-based ambient air quality objectives and standards set by Metro Vancouver, the BC Government and Government of Canada.
3. Increase the amount of time that visual air quality is classified as excellent.

#### CALL OUT BOX

##### Visual air quality

Visual air quality is how clear the air looks to the average observer. Visual air quality is another way of tracking air quality. In general, the more air contaminants there are in the air, the hazier the view. Improving air quality generally improves visual air quality.

### Guiding Principles

The *Clean Air Plan* was written considering the following Guiding Principles, which describe the fundamental values that guided development of the Plan. These principles will also guide implementation of the actions in the Plan. The Guiding Principles were adapted from the United Nations Habitat principles for local climate action.

1. **Ambitious** – Demonstrate global and local leadership in tackling local climate change and air quality challenges.
2. **Evidence-based** – Inform decision-making with the most current science and local conditions, and understand and consider traditional knowledge.
3. **Equitable** – Consider equity in all actions to address climate change and air quality. This includes sharing the costs and benefits, considering affordability and a responsibility to future generations.
4. **Inclusive & Collaborative** – Involve all voices in planning and implementation.
5. **Preventative** – Prioritize actions that minimize air contaminant emissions through design or efficiency approaches, rather than remedial efforts such as emission controls.

6. **Continuous Improvement** – Continually reduce emissions and air quality impacts.
7. **Prioritize Co-benefits**: Prioritize actions that both improve air quality and reduce greenhouse gas emissions, while considering trade-offs and minimizing negative or unintended consequences.
8. **Dynamic** – Support innovation, leverage new information and explore emerging opportunities.
9. **Transparent** – Follow an open decision-making process, and set goals and targets that can be measured, reported, verified, and evaluated.
10. **Comprehensive & Integrated** – Implement air quality and climate change actions across all sectors and communities, integrating and aligning efforts with other governments.

## Equity

Metro Vancouver's air quality and greenhouse gas management program has historically focused on the sources with the largest impacts in the region as a whole. These impacts are strongly linked to the amount and harm potential of air contaminants emitted by key sources. However, management programs have expanded beyond a regional focus to a community level, recognizing that climate change and degraded air quality impact some neighbourhoods, households and individuals more than others.

Equity is the promotion of fairness, justice and the removal of structural barriers that may cause or aggravate disparities experienced by different groups of people. The *Clean Air Plan* was developed based on an "equity" guiding principle, which is a commitment that Metro Vancouver will consider equity in actions to address climate change and air quality, and will work to reduce disproportionate impacts. **Actions that reduce emissions must also support an equitable distribution of benefits and avoid an inequitable distribution of costs.**

Integrating equity into Metro Vancouver's air quality and climate change programs is a work in progress. The *Clean Air Plan* includes six actions to support that work, recognizing that more will be needed in the future.

These actions will help Metro Vancouver further understand the impacts and benefits of air quality and climate change actions on all communities. The actions can clarify where inequities in air quality exist in the region, consider how equity can be better integrated into actions, and develop tools to address gaps.

## Equity Actions

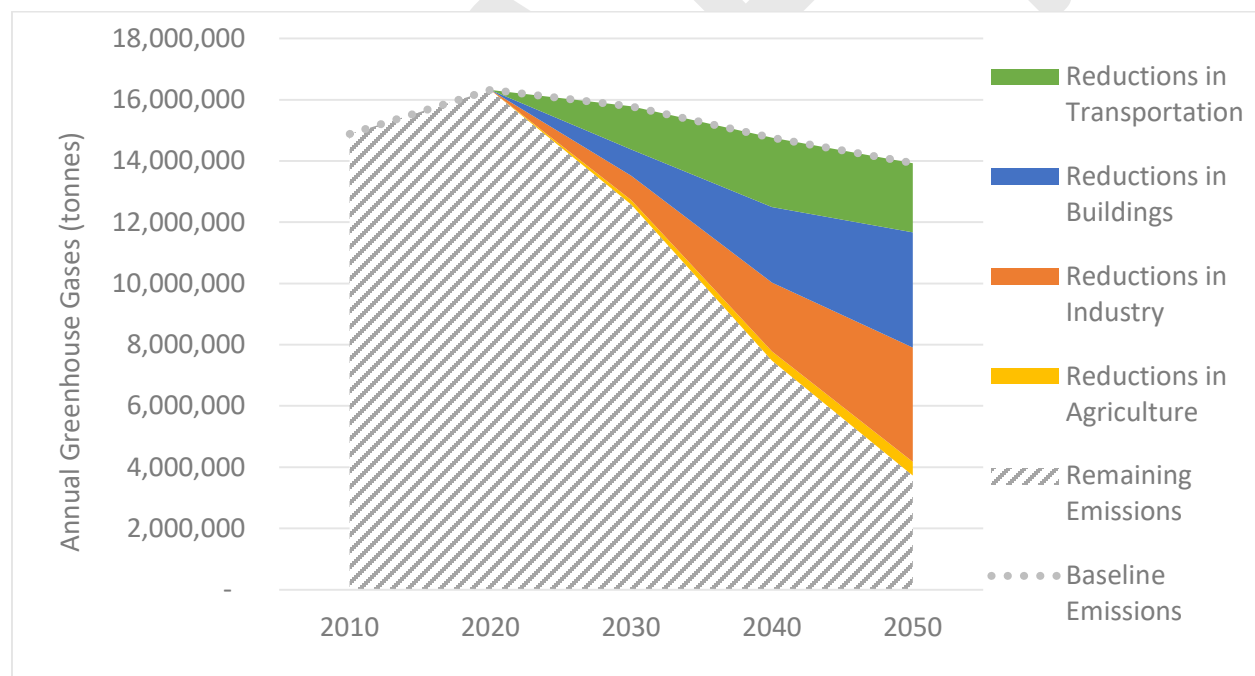
1. **Long-Term Approach for Equity.** Develop a long-term approach to evaluate and address equity in the design and implementation of air quality and greenhouse gas management programs, policies and regulations. The results of any equity analysis, both positive and negative, would be communicated to the public, including any disproportionate burdens that may be experienced by specific groups.
2. **Equity Community Input Process.** Work with community partners to develop a community input process to review equity impacts in the design and implementation of programs, policies and regulations.
3. **Air Quality Inequities Tool.** Work with health authorities and community partners to develop a publicly accessible tool to highlight and track existing inequities experienced in air quality impacts across the region (e.g., due to underlying health conditions, or proximity to large

emission sources or major roads). The tool could support similar work on disproportionate climate impacts in the region.

4. **Equity Metrics and Targets.** Develop metrics and targets to measure progress on equity in the region as it relates to air quality and greenhouse gas management.
5. **Share Equity Best Practices with Other Organizations.** Work with health authorities, member jurisdictions, BC Government and other regional partners to integrate equity best practices into the design and implementation of air quality and greenhouse gas policies, programs and regulations across the region.
6. **Equity-Building Air Quality Pilot.** Work with health authorities and community partners to develop and pilot at least one air quality project focused on equity-building.

### Potential Impacts of *Clean Air Plan*

The actions in the *Clean Air Plan* were modelled to estimate their impact on regional emissions. This modelling suggests that with bold actions by all governments and broad adoption by the public and local businesses, emissions in the Metro Vancouver region can be significantly reduced over the next 30 years. The graph below shows the potential reduction in greenhouse gas emissions by 2050 by implementing an aggressive and achievable suite of actions, starting with the actions outlined in the *Clean Air Plan*.

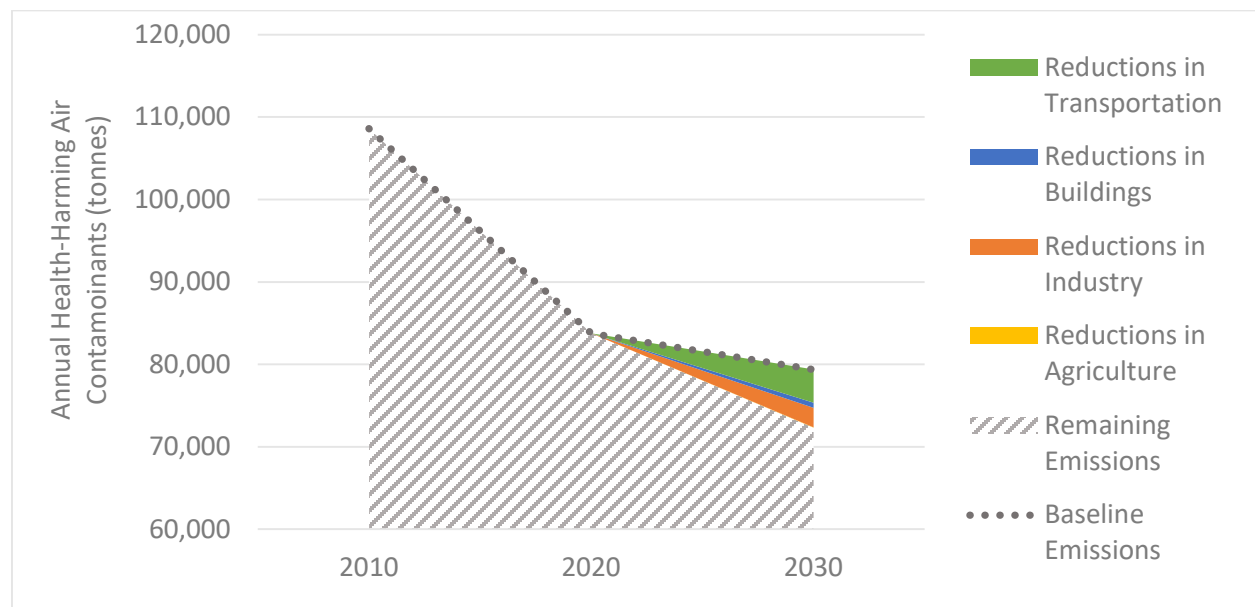


Metro Vancouver's initial modelling of the actions in the *Clean Air Plan* indicates that if all the actions in the Plan were implemented, regional greenhouse gas emissions could be reduced by approximately 2 million tonnes by 2030, or 15% below the 2010 regional total. Starting implementation on the actions in the *Clean Air Plan* is critical to achieve these emission reductions.

These potential emission reductions are significant but do not achieve the 2030 target to reduce regional greenhouse gas emissions by 45% from 2010 levels. The 2030 greenhouse gas targets



established for each issue area align with the 45% target while accounting for the technological readiness and economic considerations of different sectors. Metro Vancouver will continue to work with residents, businesses and governments to accelerate these actions even further. Additional climate actions to help transition the region to carbon neutrality will be identified in the *Climate 2050 Roadmaps*.



The suite of actions in the *Clean Air Plan* are also expected to lead to significant improvements in regional air quality and public health. The above graph shows the impact of the Plan on the combined emissions of key health-harming air contaminants: fine particulate matter, nitrogen oxides, sulphur oxides and volatile organic compounds. Between 2020 and 2030, the actions could reduce regional emissions of fine particulate matter by 200 tonnes, nitrogen oxides by 3,800 tonnes, and volatile organic compounds by 3,000 tonnes. The impact of these emission reductions are described in the call out box below.

#### CALL OUT BOX

##### [Assessing Health Benefits of Air Quality Actions in the \*Clean Air Plan\*](#)

Assigning a value to these improvements depends on a variety of factors (e.g., health impacts of different air contaminants, costs of medical treatments, lost productivity, cost of pain and suffering). Using data from Health Canada, Metro Vancouver assessed that the potential health benefits from the *Clean Air Plan* between 2020 and 2030 could be up to \$1 billion.

## Structure and Implementation

The *Clean Air Plan* focuses on actions that Metro Vancouver can implement under our delegated authority. The Plan also identifies where other governments need to take action to help achieve our regional vision and 2030 targets.

Actions in the *Clean Air Plan* include guidance, incentives, awareness and outreach programs, standards, policies, programs and regulations. Most of the greenhouse gas actions in the *Clean Air Plan* are also included in the relevant *Climate 2050 Roadmaps*. Actions related to natural carbon sequestration and climate adaptation (i.e., climate resiliency) are identified in the relevant *Climate 2050 Roadmaps* and are not included in the *Clean Air Plan*.

The *Clean Air Plan* is organized around six issue areas:

1. Transportation;
2. Buildings;
3. Industry;
4. Agriculture;
5. Health; and
6. Measure, Monitor and Regulate.

#### **CALL OUT BOX**

##### **Transitioning to Clean, Renewable Energy**







Achieving our 2030 air quality and greenhouse gas targets will require a region-wide transition from fossil fuels to clean, renewable energy. Clean, renewable energy is low or zero emission energy that is replenished over days or years. In British Columbia, electricity is produced primarily from hydro power, a clean, renewable source of energy that produces significantly less emissions than fossil fuels. Therefore, electrification is the primary pathway to cleaner air and lower greenhouse gas emissions. Other renewable fuels will also be needed, particularly for sectors that are more expensive or complicated to electrify. However, most renewable fuels (e.g., wood, renewable natural gas) still produce health-harming air contaminants, which harm air quality, human health and the environment. The *Climate 2050 Energy Roadmap* describes the actions needed to transition to a carbon neutral and resilient region, powered by clean, renewable energy.

Metro Vancouver will work to implement the strategies and actions in the *Clean Air Plan*, reflecting them in annual work plans and budgets. Strategies and actions will be implemented following the Guiding Principles on Page 15. Progress on achieving the *Clean Air Plan* goals and targets will be publicized in annual reports, such as the Caring for the Air report.

Many actions in the *Clean Air Plan* may require a public engagement process prior to implementation, including new air emission regulations or significant changes to existing air emission regulations. Implementation of actions could also consider cost implications. Metro Vancouver values public feedback and will continue to seek feedback from the full range of voices and communities in the region. Feedback will be reflected in the design and implementation of actions.

## DIAGRAM - UNDER DEVELOPMENT

Diagram will describe goals, targets, strategies, actions and other elements in the *Clean Air Plan*.

- **Long-term Goal(s)** frame the bright green future we want in the region around 2050, for each issue area.
- **Target(s)** help measure progress toward the long-term goals of the issue areas. Emission targets account for potential impacts of the issue area strategies, as well as emission impacts due to previously implemented policies.
- **Lead Agency(ies):** Agency(ies) with the largest role(s) in completing the action. The lead agency(ies) could be Metro Vancouver, others or a combination.
- **Potential Impacts of Strategy in 2030:** The largest potential emission reductions due to all actions in the strategy, relative to the expected baseline emissions in 2030. Greenhouse gases include carbon dioxide, methane and nitrous oxide. Health-harming air contaminants include the sum of fine particulate matter, nitrogen oxides, sulphur oxides and volatile organic compounds. The potential impacts reflect the emissions modelling described on Page 17.
- **Major Regional Action(s)** are foundational to achieving the strategy, and will generally lead to the most significant emission reductions.
- **Supporting Regional Action(s)** are critical to achieving the major regional actions.
- **Corporate Regional Action(s)** are leadership actions that Metro Vancouver will implement to support the major regional actions.
- **Potential Impacts of Action:**
  -  /  The action **does/does not** have the potential to reduce greenhouse gas emissions.
  -  /  The action **does/does not** have the potential to improve regional air quality.
  -  /  The action **does/does not** have the potential to improve regional visual air quality.
- **Start Year(s):** Year when development of the action would be initiated by the Lead Agency(ies).

## Issue Area 1: Transportation

The transportation system serves and shapes our region's communities and economy. Roads, rail lines, shipping lanes, flight paths, transit networks, and bike paths link us with our destinations, but burning fuels to travel these routes can worsen air quality and contribute to climate change. As the region grows and changes, we need a transportation system that will keep us connected and goods moving while also reducing emissions.

### CALL OUT BOX

Transportation generates about half of regional emissions. Within transportation, passenger vehicles are the primary contributors of greenhouse gases and volatile organic compounds, while marine vessels, medium and heavy duty vehicles, and rail locomotives are most responsible for harmful emissions from diesel use, including fine particulate matter.

The strategies to reduce emissions of these air contaminants align with best practices around the world. They include cleaner fuels and engines; more compact, complete communities; shifting to lower emission modes of transportation (e.g., cycling, walking, transit, high-speed rail); and electrification. More background on climate change and transportation is included in the *Climate 2050 Transportation Roadmap*.

### Long-term Goals

1. All personal travel within the region is made by active transportation or using zero emission technologies powered by clean, renewable energy.
2. All medium and heavy duty trucks, and rail locomotives operating within the region use zero emission technologies powered by clean, renewable energy.
3. All aircraft and marine vessels operating in the region use low emission and zero carbon technologies powered by clean, renewable energy.

### 2030 Targets

- Passenger vehicles:
  - 65% reduction in greenhouse gas emissions, from 2010 levels
- Commercial vehicles, rail locomotives, marine vessels and aircraft:
  - 35% reduction in greenhouse gas emissions, from 2010 levels
- Passenger and commercial vehicles, rail locomotives, marine vessels and aircraft:
  - 25% reduction in diesel particulate matter emissions, from 2020 levels
  - 40% reduction in nitrogen oxides emissions, from 2020 levels










### Strategies and Actions

#### *Strategy 1.1 Accelerate Transition of the Passenger Vehicle Fleet to Electric Vehicles.*


The 1.5 million passenger vehicles registered in the region are our largest source of greenhouse gases, contributing almost a third of emissions. Electrifying passenger vehicles is the fastest way to significantly reduce these emissions. The *BC Zero Emission Vehicles Act* provides a pathway to 100% electric vehicle sales by 2040, but this timeline should be accelerated to get more electric vehicles on the road faster.










Electrifying passenger vehicles will also improve regional air quality, though work is needed to ensure that electric vehicles and charging infrastructure are reasonably accessible to everyone, including lower income households.

<p><i>Potential Impacts of Strategy in 2030</i></p> <p>Reduce annual greenhouse gases by up to <b>710,000</b> tonnes</p> <p>Reduce annual health-harming air contaminants by up to <b>1,400</b> tonnes</p>	<p><i>Key Partners</i></p> <ul style="list-style-type: none"> <li>- Member jurisdictions</li> <li>- BC Government</li> <li>- BC Hydro</li> </ul>
--	--

Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
<b>MAJOR REGIONAL ACTIONS</b>			
<p><b>1.1.1 Accelerate Sales Targets for New Electric Vehicles.</b> Advocate to the BC Government to accelerate the sales targets in the <i>Zero Emission Vehicles Act</i> to reach 100% <u>zero emission vehicle</u> sales by 2030 (instead of current 2040 target). The BC Government should also modify the <i>Act</i> to prioritize 100% electric vehicles.</p>	BC Government	  	2022 – 2023
<p><b>1.1.2 Develop Regional Emission Requirements for Passenger Vehicles.</b> Develop regulatory emission requirements for existing passenger vehicles, to be implemented by the BC Government or Metro Vancouver. Requirements could include low or zero emission zones, or a vehicle emissions levy with rebates for replacing older vehicles. Requirements would target both health-harming air contaminants and greenhouse gases. Any regulatory program must consider equity and be coordinated with member jurisdictions. Any program could also support actions focused on reducing total driving distances, including Action 1.2.3 on regional mobility pricing.</p>	BC Government, Metro Vancouver	  	2023 – 2024
<p><b>1.1.3 Make Electric Vehicles More Affordable.</b> Advocate to BC Government, Government of Canada and other regional partners to continue providing funding (e.g., incentives, loans and tax credits) for the purchase of new and used electric vehicles. Funding should be available for personal and business purchases and should prioritize groups who generally cannot afford these vehicles without funding programs, such as low and middle income residents.</p>	BC Government, Government of Canada	  	2022 – 2023

## SUPPORTING REGIONAL ACTIONS













<p><b>1.1.4 Regional Electric Vehicle Charging Strategy.</b> Develop a long-term regional strategy for electric vehicle charging infrastructure, coordinating with member jurisdictions, energy utilities, TransLink, and other regional partners. A strategy would identify where additional publicly accessible electric vehicle chargers are needed to ensure equitable access, as well as provide guidance on user fees, design and siting. The strategy should align with similar actions for medium and heavy duty trucks, and non-road equipment (Actions 1.3.6 and 3.2.4).</p>	Metro Vancouver	  	2022 – 2023
<p><b>1.1.5 Make New Passenger Vehicles Cleaner.</b> Advocate to the Government of Canada to adopt more stringent fuel economy and emission standards for new passenger vehicles. New emission standards should consider more than just tailpipe emissions, such as particulate matter emissions from brake and tire wear.</p>	Government of Canada	  	2024 – 2025
<p><b>1.1.6 Expand Electric Vehicle Charging in Buildings.</b> Work with member jurisdictions, BC Government, BC Hydro and Government of Canada to expand access to electric vehicle charging in buildings. This should include adoption of provincial “Right-to-Charge” legislation as well as code requirements that new or substantially renovated buildings are wired for electric vehicle chargers. Expanding access should also include increased support and funding (e.g., incentives, loans, tax credits) for electric vehicle charging in existing buildings. Funding should prioritize groups who generally would not have access to chargers, such as residents living in rental buildings, strata buildings, non-market housing or secondary suites.</p>	BC Government, member jurisdictions	  	2022 – 2023
<p><b>1.1.7 Electric Vehicle Outreach Programs.</b> Enhance existing and deliver new public outreach programs about the benefits of electric vehicles and how to install electric vehicle chargers at workplaces and multi-family buildings, working with member jurisdictions and other regional partners.</p>	Metro Vancouver	  	Ongoing
<p><b>1.1.8 Electrification Targets for Ride-Hailing Services.</b> Advocate to BC Government to establish vehicle electrification targets for ride-hailing and taxi fleets.</p>	BC Government	  	2024 – 2025

<b>1.1.9 Eliminate Tampering with Vehicle Emission Controls.</b> Work with BC Government and Government of Canada to reduce the air quality impacts from tampering with emission control systems in passenger vehicles, and medium and heavy duty trucks. This could include banning the sale or import of tampering devices, and improved enforcement of tampering in vehicles and by automotive repair shops.	BC Government, Government of Canada, Metro Vancouver	  	2022 – 2023
<b>1.1.10 Reduce Vehicle Idling Emissions.</b> Advocate to member jurisdictions to adopt Metro Vancouver’s model anti-idling bylaw, enforce existing anti-idling requirements and educate residents about the human health and environmental impacts of idling.	Member jurisdictions	  	2025 – 2026
SUPPORTING CORPORATE ACTIONS			
<b>1.1.11 Transition the Corporate Fleet to Zero Emissions.</b> Transition Metro Vancouver’s corporate on-road fleet to zero carbon emission between 2035 and 2040, and zero emission by 2050. The transition would include both passenger and medium and heavy duty vehicles (see Action 4.2.7 for related action on corporate non-road fleet).	Metro Vancouver	  	Ongoing

#### *Strategy 1.2 Reduce Driving through Active Transportation and Public Transit.*
















Transportation emissions at the community scale are driven by where people live, work, study and play. The Metro Vancouver *Regional Growth Strategy* (see Info Box on Page 13) and the TransLink *Regional Transportation Strategy* both outline policies to help create communities that are complete, compact, and transit oriented. When people live closer to where they work, study and play, more trips can happen by active transportation (e.g., walking, cycling) and public transit. Public transit can effectively move people medium and long distances, while active transportation is better for short and medium distances. Reducing the amount of driving in the region will significantly contribute to achieving the regional 2030 air quality and greenhouse gas targets. (Active transportation in particular has important co-benefits such as improved health.) However, helping residents and businesses to drive less is a long-term transition, so significant funding is needed to expand public transit and active transportation options. Regional mobility pricing can also help reduce emissions.

<i>Potential Impacts of Strategy in 2030</i> Reduce annual greenhouse gases by up to <b>280,000</b> tonnes Reduce annual health-harming air contaminants by up to <b>400</b> tonnes	<i>Key Partners</i> <ul style="list-style-type: none"> <li>- Member jurisdictions</li> <li>- TransLink</li> <li>- BC Government</li> <li>- Government of Canada</li> </ul>
---	--

Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
MAJOR REGIONAL ACTIONS			
<b>1.2.1 More Stable Funding for Regional Transit.</b> Advocate to BC Government and Government of Canada to expand stable funding for the regional transit system to cover both operations and capital investments.	BC Government, Government of Canada	  	2022 – 2023
<b>1.2.2 Enhance and Improve Regional Transit.</b> Advocate to TransLink to increase public transit in the region. TransLink should increase transit frequency in key areas, transition to using clean, renewable energy, and implement other related air quality and climate actions outlined in the <i>Regional Transportation Strategy</i> . Regional emission reductions should be prioritized in transit expansion and service decisions, while ensuring that all residents have access to transportation options in a connected region.	TransLink	  	Ongoing
<b>1.2.3 Support Mobility Pricing.</b> Work with BC Government, TransLink and member jurisdictions to support development of <u>mobility pricing</u> . Any mobility pricing program for the region should prioritize reducing total driving distances and emissions, promoting fairness and equity, and should align with any low or zero emission zones in the region (see Actions 2.1.2 and 2.3.1).	BC Government	  	Ongoing
<b>1.2.4 More Stable Infrastructure Funding for Regional Active Transportation Networks.</b> Advocate to BC Government and Government of Canada to expand stable funding for comprehensive regional and local active transportation networks. The networks should be well-connected, comfortable for most, and integrated with public transit. Network expansion should prioritize under-served areas to ensure all residents have access to active transportation options in a connected region. Network elements should include walking and cycling paths, regional greenways, separated bike lanes, and end-of-trip facilities suitable for all bike and mobility types, including charging for electric mobility devices.	BC Government, Government of Canada	  	2022 – 2023



## SUPPORTING REGIONAL ACTIONS

<p><b>1.2.5 Regional Parking Strategy to Reduce Driving.</b> Develop a Regional Parking Strategy to prioritize active transportation and other low emission transportation options, coordinating with member jurisdictions and TransLink. The strategy could include replacing building parking minimums with maximums, establishing parking minimums for bicycles, implementing dynamic parking pricing and reducing free parking spaces. The strategy could also support uptake of electric and car-share vehicles by establishing electric vehicle charging requirements for parkades, and enhancing preferential parking rates and spaces for electric and car-share vehicles.</p>	<p>Metro Vancouver, member jurisdictions</p>	  	<p>2023 – 2024</p>
<p><b>1.2.6 Support Residents and Businesses in Active Transportation.</b> Advocate to the BC Government and Government of Canada to provide incentives (including tax credits) to residents and businesses to support active transportation, including for buying, renting or sharing all bike and mobility types. Incentive availability should prioritize groups who generally cannot access these transportation options, such as low-income residents.</p>	<p>BC Government, Government of Canada</p>	  	<p>2022 – 2023</p>
<p><b>1.2.7 Communicate the Benefits of Walking, Cycling and Public Transit.</b> Support outreach campaigns led by TransLink, member jurisdictions and health authorities that show the benefits of walking, cycling (including electric bikes) and public transit, including the associated improvements to regional air quality and greenhouse gas emissions.</p>	<p>TransLink, member jurisdictions</p>	  	<p>Ongoing</p>
<p><b>1.2.8 Implement Trip Reduction Programs.</b> Advocate to BC Government to require large employers and major trip generators (e.g., shopping malls) to implement trip reduction programs. Such programs could require large employers and other major trip generators to measure staff or customer driving habits and take action to reduce driving. These programs should consider availability of lower emission alternatives and opportunities for remote and flexible work options.</p>	<p>BC Government</p>	  	<p>2024 – 2025</p>
<p><b>1.2.9 Support the Use of Bike- and Car-Sharing Services.</b> Develop a regional strategy to support the increased use of bike- and car-sharing services, coordinating with member jurisdictions, TransLink and other regional partners. These services have been shown to reduce total driving distances among users.</p>	<p>Metro Vancouver</p>	  	<p>2024 – 2025</p>

## SUPPORTING CORPORATE ACTIONS

### 1.2.10 Support Low Emissions Commuting by Staff.

Develop and implement a Metro Vancouver corporate commuting strategy to reduce driving emissions. The strategy would encourage more commuting by active transportation, public transit and car-pooling. The strategy could also review parking policies, explore distributed and remote work options where operationally feasible, and recommend additional electric vehicle chargers at work sites.

Metro Vancouver



2022 –  
2023

### *Strategy 1.3 Reduce Heavy Truck Emissions and Support Early Adoption of Zero Emission Heavy Trucks.*













As our economy grows, goods movement in the region will continue to grow. The 40,000 medium and heavy duty trucks registered in the region (plus the trucks that travel in and out of the region) generate 5% of regional greenhouse gas emissions and 10% of regional diesel particulate matter. Federal emission standards ensure new trucks are cleaner, and provincial clean fuel standards have reduced the carbon intensity of diesel, the main fuel used by medium and heavy duty trucks. Programs that target high emitting medium and heavy duty trucks will help achieve the 2030 transportation targets for diesel particulate matter and nitrogen oxides. Sales targets, incentives and a regional refueling strategy will accelerate the long-term transition to zero emission medium and heavy duty trucks, reducing greenhouse gases and improving regional and local air quality.

#### *Potential Impacts of Strategy in 2030*













Reduce annual greenhouse gases by up to **170,000 tonnes**  
Reduce annual health-harming air contaminants by up to **200 tonnes**










#### *Key Partners*

- BC Government
- Vancouver Fraser Port Authority
- Member jurisdictions
- Trucking industry

Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
MAJOR REGIONAL ACTIONS			
<p><b>1.3.1 Regulate Existing Medium and Heavy Trucks.</b> Develop regulatory requirements for existing medium and heavy duty trucks, to be implemented by the BC Government or Metro Vancouver. Regulatory approaches to reduce emissions could include an inspection and maintenance program that requires repairs on higher emitting trucks, registration requirements targeting older vehicles, a regional smoking vehicle hotline, and low or zero emission zones (aligned with Action 1.1.1). Requirements should be developed in coordination with member jurisdictions, Vancouver Fraser Port Authority and other regional partners. Requirements would align with TransLink's transition to clean, renewable energy in Action 1.2.2. Requirements would initially target health-harming air contaminants but should eventually include greenhouse gas emissions.</p>	Metro Vancouver, BC Government, member jurisdictions	  	2022 – 2023
<p><b>1.3.2 Require Zero Emission Sales Targets for New Medium and Heavy Trucks.</b> Advocate to BC Government to set mandatory zero emission vehicle sales targets for new medium and heavy duty trucks. For medium duty trucks, the zero emission sales target should reach 100% by 2050. For heavy duty trucks, the zero emission sales target should reach 100% before 2060.</p>	BC Government	  	2023 – 2024
<p><b>1.3.3 More Stringent Low Carbon Fuel Standards.</b> Advocate to the BC Government to increase the stringency of the BC <i>Low Carbon Fuel Standard</i> to reduce the carbon intensity of transportation fuels. Advocate to the Government of Canada to adopt a <i>Clean Fuel Standard</i> that includes stringent carbon intensity targets for all transportation fuels.</p>	BC Government, Government of Canada	  	2025 – 2026
<p><b>1.3.4 Make Low and Zero Emission Heavy Trucks More Affordable.</b> Advocate to BC Government, Government of Canada and other regional partners to enhance incentives (including loans, tax credits) for the purchase of low and zero emission medium and heavy duty trucks. Any funding program should consider whether incentives should be targeted to groups less able to afford low and zero emission medium and heavy duty trucks.</p>	BC Government, Government of Canada	  	2023 – 2024

## SUPPORTING REGIONAL ACTIONS










<p><b>1.3.5 Regulate Fuel Economy and Emissions for Medium and Heavy Trucks.</b> Advocate to the Government of Canada to adopt more stringent fuel economy and emission standards for medium and heavy duty trucks. Cleaner trucks will improve regional air quality in the short term and support the long term transition to zero emission vehicles.</p>	Government of Canada	  	2023 – 2024
<p><b>1.3.6 Zero Carbon Refueling Strategy for Medium and Heavy Trucks.</b> Develop a long-term regional zero carbon refueling strategy for medium and heavy duty trucks, coordinating with member jurisdictions, energy utilities, Vancouver Fraser Port Authority, TransLink and other regional partners. The strategy would identify where refueling stations are needed for different fuels including electricity, hydrogen, renewable diesel and others. The strategy could identify pilot projects and should also consider opportunities to leverage public investment in electric bus charging infrastructure for commercial vehicle use. This strategy should align with similar strategies for passenger vehicles and non-road equipment (Actions 1.1.3 and 3.2.4).</p>	Metro Vancouver	  	2025 – 2026
<p><b>1.3.7 Funding for Zero Carbon Refueling Infrastructure for Medium and Heavy Trucks.</b> Advocate to the BC Government, Government of Canada and energy utilities to increase funding (e.g., incentives, loans, tax credits) for zero carbon refueling infrastructure for medium and heavy duty trucks. This infrastructure would support early adoption of low and zero emission medium and heavy trucks, prior to wider commercialization.</p>	BC Government, Government of Canada	  	2025 – 2026
<p><b>1.3.8 Large Fleets to Adopt “ZEV-First” Procurement.</b> Develop and support implementation of “ZEV-first” fleet procurement policies, coordinating with member jurisdictions and large fleet operators in the region, to transition fleets to zero emission vehicles by the late 2040s. The policies would be supported by regularly updated information on the availability of zero emission passenger vehicles and medium and heavy duty trucks. The policies could also include guidance on <u>right-sizing fleets</u>, and potential regional coordination of purchases of zero emission vehicles for fleets.</p>	Metro Vancouver	  	2025 – 2026

<b>1.3.9 Efficient Goods Movement to Reduce Emissions.</b> Work with member jurisdictions, large fleet operators, Vancouver Fraser Port Authority and other regional partners to support fleets in reducing emissions. This could include enhancing sustainable fleet management programs (currently funded by BC Government and Government of Canada) to improve fleet logistics, regional coordination of HOV lane use for zero emission heavy duty trucks, shifting deliveries to off-peak hours, small urban consolidation centres (“microHubs”), and cargo bike delivery pilot projects.	Metro Vancouver, BC Government, Vancouver Fraser Port Authority	  	2023 – 2024
<b>1.3.10 Support Innovation in Zero Emission Technology for Medium and Heavy Trucks.</b> Advocate to industry, academic institutions and other governments to accelerate innovation in low and zero emission technologies for medium and heavy duty trucks, including supporting pilot projects.	BC Government, Government of Canada	  	2022 – 2023
<b>1.3.11 Use Business Licences to Support Emission Reductions.</b> Work with member jurisdictions to explore whether business licences can be used to accelerate adoption of low and zero emission medium and heavy duty trucks.	Member jurisdictions	  	2025 – 2026

#### *Strategy 1.4 Reduce Marine and Rail Emissions*

Around 150 million tonnes of cargo are handled at port terminals in the region every year, supporting the regional economy. This cargo movement is the main driver of marine vessel and rail locomotive emissions in the region, causing 5% of greenhouse gas and 40% of diesel particulate matter emissions. (Passenger ferries and rail are also a source of emissions.) The Vancouver Fraser Port Authority is working to reduce greenhouse gas and health-harming air contaminant emissions associated with shipping in the region. Achieving significant emission reductions in the marine and rail sectors is challenging; progress will depend on efforts by the Government of Canada and the BC Government to develop and implement strategies to advance cleaner fuels and engine technologies. For marine emissions, the Government of Canada also needs to advocate to international organizations such as the International Maritime Organization to accelerate the implementation of more stringent standards.

<i>Potential Impacts of Strategy in 2030</i> Reduce annual greenhouse gases by up to <b>240,000</b> tonnes Reduce annual health-harming air contaminants by up to <b>2,000</b> tonnes	<i>Key Partners</i> <ul style="list-style-type: none"> <li>- Vancouver Fraser Port Authority</li> <li>- Government of Canada</li> <li>- BC Government</li> </ul>
---	--

Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
MAJOR REGIONAL ACTIONS			
<b>1.4.1 Accelerate Emission Reductions from Marine Vessels.</b> Advocate to the Government of Canada and BC Government to develop and implement a long-term strategy to accelerate emission reductions from ocean-going marine vessels, harbour vessels and passenger ferries in the region. In the short term, the strategy should prioritize cleaner engines, more renewable fuels and more shore power, particularly for vessels operating in areas that are most impacted by marine emissions. In the long term, the strategy should establish more stringent greenhouse gas emission targets, standards and regulations, to achieve a carbon neutral marine sector by 2050. The strategy should also consider efficiency improvements and the design and supportive funding for regional refueling infrastructure for zero carbon marine vessels.	Government of Canada, BC Government	  	2023 – 2024
<b>1.4.2 Accelerate Emission Reductions from Rail Locomotives.</b> Advocate to the Government of Canada and BC Government to develop and implement a long-term strategy to accelerate emission reductions from rail locomotives in the region. In the short term, the strategy should prioritize cleaner locomotives, particularly those operating near neighbourhoods most exposed to rail emissions, as well as fugitive emissions from rail cars. In the long term, the strategy should establish more stringent greenhouse gas emission targets, standards and regulations for line-haul and switch locomotives, to achieve a carbon neutral rail sector by 2050. The strategy should also consider efficiency improvements and the design and supportive funding for regional refueling infrastructure for zero carbon locomotives.	Government of Canada, BC Government	  	2023 – 2024
<b>1.4.3 Support Emissions Reduction Actions at Vancouver Fraser Port Authority.</b> Advocate to the Vancouver Fraser Port Authority to enhance actions that reduce greenhouse gas emissions and minimize air quality impacts on neighbourhoods most exposed to marine and port-related emissions. Actions under the <i>Northwest Ports Clean Air Strategy</i> should include expanding emission incentive programs for marine vessels and harbour tugs, tightening emission requirements for the Port's Truck Licensing System, considering of short-sea shipping, and expanding shore power capacity at container and cruise terminals.	Vancouver Fraser Port Authority	  	Ongoing

## SUPPORTING REGIONAL ACTIONS

### 1.4.4 Support Innovation in Low and Zero Emissions

**Marine and Rail Technologies.** Advocate to BC Government and Government of Canada to help accelerate innovation in low and zero emission technologies for marine vessels, harbour tugs, passenger ferries and rail locomotives, including supporting pilot projects. Emerging engine technologies include hybrid, battery-electric and hydrogen fuel cells. This should include coordination with Vancouver Fraser Port Authority, BC Ferries, rail companies, governments and other regional partners.

BC  
Government,  
Government  
of Canada



2023 –  
2024

### Strategy 1.5 Reduce Aviation Emissions.

Airports in the region handle 25 million passengers per year; these aircraft generate 2% of regional greenhouse gas emissions and under 10% of regional emissions of sulphur oxides. International standards have improved fuel economy from aircraft and the Vancouver International Airport Authority is aggressively electrifying airport operations. While electrification of small aircraft is progressing, achieving significant emission reductions for large aircraft is challenging. In the short term, increasing the availability of sustainable aviation fuel (i.e., renewable jet fuel) will reduce greenhouse gases from aviation. In the long term, the Government of Canada needs to develop a national strategy to transition to a carbon neutral aviation sector. This likely would include advocacy to international organizations such as the International Civil Aviation Organization.
















#### Potential Impacts of Strategy in 2030

Reduce annual greenhouse gases by up to **10,000** tonnes  
Reduce annual health-harming air contaminants by up to **20** tonnes

#### Key Partners

- Government of Canada
- Vancouver International Airport Authority
- Airlines



Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
MAJOR REGIONAL ACTIONS			
<b>1.5.1 Carbon Neutral Aviation Sector.</b> Advocate to Government of Canada to develop and implement a long-term strategy to accelerate greenhouse gas emission reductions from the aviation sector. The strategy should include more stringent fuel economy and emission standards for aircraft, to achieve a carbon neutral aviation sector by 2050. The strategy should also increase the availability of sustainable aviation fuel, and could include mandatory carbon offsets or carbon taxes for air travel.	Government of Canada	  	2023 – 2024
<b>1.5.2 Develop Local Sources of Sustainable Aviation Fuel.</b> Support airlines at Vancouver International Airport and other regional partners in increasing local availability of sustainable aviation fuel.	Airlines, Vancouver International Airport Authority	  	2022 – 2023
SUPPORTING REGIONAL ACTIONS			
<b>1.5.3 Technologies for Zero Emission Aircraft.</b> Advocate to Government of Canada and BC Government to support development of zero emission aircraft, including electrification of small aircraft.	Government of Canada, BC Government	  	2023 – 2024
<b>1.5.4 Stringent Fuel Sulphur Requirements.</b> Advocate to Government of Canada to adopt more stringent sulphur content requirements for aviation fuel. Fuels with lower sulphur would reduce emissions of sulphur oxides.	Government of Canada	  	2025 – 2026
SUPPORTING CORPORATE ACTIONS			
<b>1.5.5 Support Low Carbon Corporate Business Travel.</b> Update and adapt corporate business travel policies to reduce emissions, including air travel considerations, corporate carbon offsets, and remote attendance.	Metro Vancouver	  	2022 – 2023



## Issue Area 2: Buildings

Buildings provide spaces for shelter, comfort, productivity and recreation—this is where we spend most of our time. Yet, heating and cooling our homes, businesses, schools, hospitals, and every other building in the region emits greenhouse gases and health-harming air contaminants.

### CALL OUT BOX

#### Building emissions

The nearly 500,000 buildings in the region generate approximately 25% of regional greenhouse gas emissions, primarily from natural gas heating. Buildings also generate more than 35% of regional fine particulate matter emissions, primarily from wood burning in homes. Emissions are higher from buildings with less insulation and older windows or equipment.

Buildings can last a long time—50 years or more—so how we design, build and retrofit them in the next ten years will determine their emissions for decades. Improving building energy efficiency and heating buildings mostly with electricity are the most effective ways to reduce emissions from buildings. Better insulated and sealed buildings are also more comfortable, healthier, quieter, and protect better against wildfire smoke and heat waves. Multi-family buildings (e.g., townhomes, apartments) need less energy per occupant to heat and cool, so the *Regional Growth Strategy*'s policies on more compact communities will also reduce emissions. More background on climate change and buildings is included in the *Climate 2050 Buildings Roadmap*.

### Long-term Goal

1. All buildings are zero emissions from heating and cooling.

### 2030 Targets

- All buildings:
  - o 35% reduction in greenhouse gas emissions, from 2010 levels
  - o 35% reduction in fine particulate matter emissions, from 2020 levels
  - o 15% reduction in nitrogen oxides emissions, from 2020 levels
- New buildings:
  - o All new buildings are zero emissions in their operations
  - o All new buildings produce 40% less embodied emissions from construction

### CALL OUT BOX

#### Low Carbon Upgrades for Buildings




Also known as “deep carbon retrofits”, low carbon upgrades for buildings include upgrading building insulation and windows, sealing out drafts and switching to electric heating and cooling. These upgrades can significantly reduce energy consumption and emissions.
















## Strategies and Actions













### *Strategy 2.1 Signal the Transition to Zero Emission Buildings through Requirements and Standards.*

Natural gas use in buildings contributes approximately 25% of greenhouse gas and approximately 10% of nitrogen oxides emissions in the region. The BC *Energy Step Code* and upcoming Retrofit Code will improve the energy performance of new and renovated buildings, and both should require that most heating and cooling uses electricity. Emission requirements for existing homes and large buildings will also help achieve the 2030 buildings targets for reducing greenhouse gases and nitrogen oxides. Equipment efficiency standards and the climate impacts of refrigerants must also be addressed, along with a clear mandate for BC Hydro to support electrification of buildings.

<i>Potential Impacts of Strategy in 2030</i> Reduce annual greenhouse gases by up to <b>650,000 tonnes</b> Reduce annual health-harming air contaminants by up to <b>500 tonnes</b>	<i>Key Partners</i> <ul style="list-style-type: none"> <li>- BC Government</li> <li>- Member jurisdictions</li> <li>- BC Hydro</li> <li>- Government of Canada</li> </ul>
---	---

Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
<b>MAJOR REGIONAL ACTIONS</b>			
<b>2.1.1 Greenhouse Gas Performance Requirements for Existing Large Buildings.</b> Develop regulatory requirements for existing large buildings to meet greenhouse gas emission performance targets, which would reach zero carbon emissions before 2050. Requirements would apply to all existing large commercial and large residential buildings, and would include energy consumption benchmarking, reporting and performance requirements, in coordination with BC Government regulatory requirements. Any regulation should also require that emissions from large buildings would not lead to local air quality that exceeds Metro Vancouver's ambient air quality objectives, when also considering background levels. The requirements should align with Strategy 2.4 on district energy systems and could be developed with member jurisdictions.	Metro Vancouver	  	Ongoing










<b>2.1.2 Greenhouse Gas Performance Requirements for Existing Houses and Townhomes.</b> Develop regulatory requirements for existing homes and townhomes to meet greenhouse gas emission performance targets, which would reach zero carbon emissions before 2050, in coordination with BC Government regulatory requirements. These requirements could be developed with member jurisdictions, and would also help with achieving Metro Vancouver's ambient air quality objectives.	Metro Vancouver	  	2022 – 2023
<b>2.1.3 New Buildings are Highly Efficient and Electric.</b> Work with the BC Government to establish greenhouse gas performance requirements for new buildings, through the BC <i>Energy Step Code</i> or other legislation, reaching zero emissions (i.e., electric heating and cooling) by 2030. These requirements should allow local governments to voluntarily adopt zero emission targets earlier. These requirements would apply to new homes, townhomes, and large commercial and large residential buildings.	BC Government	  	Ongoing
<b>2.1.4 Require Greenhouse Gas Reductions during Renovations.</b> Advocate to the BC Government to establish the BC Retrofit Code with increasingly stringent greenhouse gas performance requirements for buildings undergoing significant renovations.	BC Government	  	Ongoing
SUPPORTING REGIONAL ACTIONS			
<b>2.1.5 Energy Labels for Homes and Buildings.</b> Work with the BC Government to require every building and home in the region to obtain an energy and greenhouse gas emissions label. The label must be disclosed publicly when a property is constructed or listed for sale, rental or lease. Such labels would provide information to accelerate low carbon updates for buildings.	BC Government	  	Ongoing
<b>2.1.6 High Performance Heating and Cooling Equipment Standards.</b> Advocate to the Government of Canada and BC Government to establish energy efficiency standards for new and imported heating and cooling equipment. The standards should require a rated energy performance of 100% or more, and greenhouse gas requirements for refrigerants, both by 2030. The standards would help buildings conserve energy while reducing emissions.	Government of Canada, BC Government	  	2022 – 2023



















<b>2.1.7 Locate Exhausts to Minimize Local Air Quality Impacts.</b> Work with member jurisdictions, the BC Government and health authorities to establish more stringent exhaust requirements for building boilers and heaters, and restaurants. This would include updating municipal development and building permits, and the BC Building Code so that exhausts are located to minimize impacts on local air quality and human health.	Member jurisdictions, BC Government	  	2023 – 2024
<b>2.1.8 Significantly Reduce Refrigerant Leaks in Building Equipment.</b> Advocate to the BC Government to improve compliance with the requirements of the BC <i>Ozone Depleting Substances and other Halocarbons Regulation</i> . This is expected to involve enhanced outreach to help reduce refrigerant leaks and ensure effective refrigerant management in heating and cooling systems in buildings.	BC Government	  	2022 – 2023
<b>2.1.9 Value Zero Emission and Resilient Buildings in Lending Practices.</b> Work with the BC Government and Government of Canada to establish guidelines for the valuation of low and zero emission, and resilient buildings. This would support lenders to provide competitive “Green Mortgages” and “Green Loans” for low and zero emission, and resilient buildings.	BC Government, Government of Canada	  	2022 – 2023
<b>2.1.10 Building Electrification Mandate for BC Hydro.</b> Advocate to the BC Government to direct BC Hydro and the BC Utilities Commission to promote and accelerate building electrification and to reduce emissions from buildings.	BC Government	  	2022 – 2023




*Strategy 2.2 Accelerate Demand for Zero Emission Buildings through Incentives, Education and Research.*

Many technologies, like heat pumps and heat recovery systems, exist today to electrify most buildings that currently use natural gas for heating. Current technical support programs and incentives help home and building owners adopt these technologies, as well as improve the energy performance of homes and buildings. A regional Building Decarbonization Coalition will help significantly expand existing programs so more home and building owners can reduce their buildings emissions. These programs must work directly with community partners to identify how to involve more communities in the region so everyone can benefit from zero emission buildings. These approaches will help achieve the 2030 buildings targets for reducing emissions of greenhouse gases and nitrogen oxides.

<i>Potential Impacts of Strategy in 2030</i> Reduce annual greenhouse gases by up to <b>110,000</b> tonnes Reduce annual health-harming air contaminants by up to <b>100</b> tonnes	<i>Key Partners</i> <ul style="list-style-type: none"> <li>- Member jurisdictions</li> <li>- BC Government</li> <li>- Construction industry</li> <li>- Government of Canada</li> </ul>
---	--

Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
MAJOR REGIONAL ACTIONS			
<b>2.2.1 Expand Incentives for Low Carbon Upgrades.</b> Advocate to the BC Government and Government of Canada to continue providing fuel-switching and energy efficiency incentives (including tax credits). The incentives should be expanded to support more building electrification solutions for older homes and buildings, and should complement financing tools under Action 2.2.2. Specific incentives should also support rental and non-market housing building owners to conduct low carbon upgrades while avoiding increased evictions or significant cost increases for renters.	BC Government, Government of Canada	  	2022 – 2023
<b>2.2.2 New Financing Tools for Low Carbon Upgrades.</b> Work with the BC Government, Government of Canada, member jurisdictions, energy utilities and other partners to develop strategic financing tools for home and building owners to accelerate low carbon upgrades in buildings. These tools allow owners to spread the cost of upgrades over a longer period, making them more affordable. Examples include Property Assessed Clean Energy (PACE) financing, on-bill financing and other related mechanisms. The tools should be available for homes, townhomes, and large commercial and large residential buildings, and would complement incentives under Action 2.2.1.	BC Government, Government of Canada	  	2022 – 2023
<b>2.2.3 Building Decarbonization Coalition.</b> Work with governments, energy utilities, construction industry, academic institutions, non-governmental organizations and other regional partners to develop a Building Decarbonization Coalition. The Coalition would collaborate to address major barriers and create opportunities to accelerate the transition to zero emission homes and large buildings. The Coalition would also align with the regional working group focused on reducing embodied emissions in new and existing buildings (see Action 2.5.4).	Metro Vancouver	  	2022 – 2023







SUPPORTING REGIONAL ACTIONS			
<b>2.2.4 Online Decision Support Tools for Low Carbon Upgrades in Buildings.</b> Work with the BC Government, Government of Canada and member jurisdictions to develop simple online tools that help home and large building owners choose low carbon solutions. Online support tools will be supported by energy advisor services under Action 2.2.5.	Metro Vancouver	  	Ongoing
<b>2.2.5 Energy Advisor Services for Homes and Large Buildings.</b> Work with the BC Government to enhance energy advisor services for home and large building owners. The expansion would help simplify the customer journey for home and building owners considering retrofits, so they can more easily access technical support and financial incentives under Action 2.2.4.	BC Government	  	Ongoing
<b>2.2.6 Make Electricity Upgrades Faster and Cheaper.</b> Advocate to BC Hydro to work with member jurisdictions, trade associations and other regional partners to streamline electricity service upgrades, to reduce costs and installation timelines.	BC Hydro	  	2022 – 2023
<b>2.2.7 Increase Public Awareness of the Benefits of Zero Emission Buildings.</b> Work with member jurisdictions, the BC Government, health authorities, and other partners to deliver awareness and educational programs that encourage home and building owners to choose zero emission building solutions. These programs would highlight how health is improved by reducing emissions of indoor air contaminants; the benefits of using qualified installers; permitting requirements for heating, cooling and ventilation systems; and the consumer protections provided by municipal permits.	Metro Vancouver	  	2022 – 2023
<b>2.2.8 Training and Education in Zero Emission Buildings.</b> Work with industry stakeholders and other governments to ensure industry training and certification meets the growing market demand for zero emission building design, technology, installation and operation.	Construction Industry	  	2022 – 2023
SUPPORTING CORPORATE ACTIONS			
<b>2.2.9 Share Lessons from Transitioning Metro Vancouver Corporate Buildings to Zero Emissions.</b> Develop and promote case studies about low carbon upgrades completed in Metro Vancouver corporate buildings, including Metro Vancouver Housing buildings, to show the benefits and feasibility of electric and resilient buildings.	Metro Vancouver	  	2023 – 2024

<b>2.2.10 Test New Zero Emission Building Technologies.</b> Test new zero emission building technologies in Metro Vancouver corporate buildings, including Metro Vancouver Housing buildings. These pilot projects would include the installation, use and monitoring of building technologies that are not yet widely used in the region.	Metro Vancouver	  	2022 – 2023
---	-----------------	---	-------------




### Strategy 2.3 Make Wood Heating Systems Cleaner.

Residential indoor wood burning is responsible for more than 25% of fine particulate matter emissions in the region – more than any other single source. Since heating generally occurs in the fall and winter, wood smoke can contribute even more to fine particulate matter levels in the air that residents breathe during those times of the year. In more densely populated areas, the smoke from a single chimney can impact many more neighbours, compared to rural areas. Metro Vancouver’s *Residential Indoor Wood Burning Emission Regulation* requires that, by 2025, most residents in urban areas may only burn wood in an appliance that meets performance standards to ensure fine particulate matter emissions are low. Enhancing wood stove exchange and education programs will help achieve the 2030 buildings target for fine particulate matter.

<b>Potential Impacts of Strategy in 2030</b> No greenhouse gas reductions are expected Reduce annual health-harming air contaminants by up to <b>20 tonnes</b>	<b>Key Partners</b> <ul style="list-style-type: none"> <li>- Member jurisdictions</li> <li>- BC Government</li> </ul>
--	---

Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
<b>MAJOR REGIONAL ACTIONS</b>			
<b>2.3.1 Enhance Wood Stove Exchange Program.</b> Advocate to the BC Government, Government of Canada, energy utilities and other regional partners to increase funding for wood stove exchange incentives, aligned with the Metro Vancouver’s residential indoor wood burning regulation. Larger incentives should be available for low income households that use wood stoves as a primary heating source, and for households switching to electric heating.	BC Government, Government of Canada	  	2023 – 2024
<b>SUPPORTING REGIONAL ACTIONS</b>			
<b>2.3.2 Enhance Wood Burning Education.</b> Enhance existing awareness and educational programs about how to reduce emissions from residential indoor wood burning.	Metro Vancouver	  	2023 – 2024






<b>2.3.3 All Wood Stoves are Certified.</b> Advocate to BC Government and Government of Canada to require that new wood burning stoves and devices imported into BC, as well as existing stoves and devices sold in BC, are certified by the Canadian Standards Association or the US Environmental Protection Agency. This should include enforcement mechanisms to limit sales of uncertified devices through private sales.	BC Government	  	2024 – 2025
--	---------------	---	-------------




#### *Strategy 2.4 Shift to Zero Carbon District Energy Systems.*

District energy systems provide heating and cooling to a network of residential and commercial buildings more efficiently, and generally with lower emissions than individual building heating and cooling systems. There are currently 18 district energy systems in the region, running on natural gas, recovered heat and biomass, and more systems are under development. Developing a long-term emissions pathway to transition district energy systems to clean, renewable energy will help achieve the 2030 buildings targets for greenhouse gases, nitrogen oxides and fine particulate matter. Metro Vancouver is currently exploring opportunities to provide clean, renewable energy to these systems; more information is available in the *Climate 2050 Roadmaps*.

<i>Potential Impacts of Strategy in 2030</i> Reduce annual greenhouse gases by up to <b>80,000 tonnes</b> Reduce annual health-harming air contaminants by up to <b>20 tonnes</b>	<i>Key Partners</i> <ul style="list-style-type: none"> <li>- Member jurisdictions</li> <li>- Energy utilities</li> </ul>
---	--

Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
<b>MAJOR REGIONAL ACTIONS</b>			
<b>2.4.1 Emission Requirements for District Energy Systems.</b> Develop a regulatory pathway to achieve zero carbon district energy systems by 2050, working with member jurisdictions, BC Government and energy utilities. Any regulation should also require that emissions from district energy systems would not lead to local air quality that exceeds Metro Vancouver's ambient air quality objectives, when also considering background levels. These requirements should align with Action 2.1.1 on large buildings.	Metro Vancouver	  	2023 – 2024


















SUPPORTING REGIONAL ACTIONS			
<b>2.4.2 Low Carbon District Energy Policies.</b> Work with member jurisdictions with district energy systems to assess the feasibility of using sewer heat and biogas generation from Metro Vancouver and other member municipalities.	Metro Vancouver	  	2023 – 2024

*Strategy 2.5 Accelerate the Transition to Lower Embodied Emissions in Buildings.*

**Embodied emissions** are the greenhouse gas emissions associated with resource extraction, manufacturing and distribution of products. Using construction materials with lower embodied emissions will reduce global emissions of greenhouse gases. Local governments in the region are establishing requirements for embodied emissions of construction materials. Convening a regional embodied emissions working group, and setting embodied emissions requirements in the building code and for new public buildings, will help accelerate the transition to lower embodied emissions in buildings.

<i>Potential Impacts of Strategy in 2030</i> Greenhouse gas impacts to be developed during implementation No regional air quality impacts are expected	<i>Key Partners</i> <ul style="list-style-type: none"> <li>- Member jurisdictions</li> <li>- BC Government</li> <li>- Construction/renovation industry</li> </ul>
--	---

Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
MAJOR REGIONAL ACTIONS			
<b>2.5.1 Incorporate Embodied Emissions into the BC Building Code.</b> Advocate to BC Government that future BC Building and Retrofit Code updates would include stringent embodied emissions performance targets for new construction and retrofits, and would incentivize the use of materials with low embodied emissions through consideration of cost and material availability.	BC Government	  	2023 – 2024
<b>2.5.2 Use Building Materials with Low Embodied Emissions.</b> Advocate to BC Government and member jurisdictions to create procurement policies that prioritize the use of building materials with low embodied emissions, including BC forest products.	BC Government, member jurisdictions	  	2022 – 2023

SUPPORTING REGIONAL ACTIONS			
<b>2.5.3 Set Embodied Emission Targets for New Public Buildings.</b> Advocate to public sector organizations in the region to establish embodied emission reduction targets for new construction projects, ahead of BC Building and Retrofit Code changes.	Member jurisdictions	  	2023 – 2024
<b>2.5.4 Regional Working Group to Reduce Embodied Emissions in Buildings.</b> Work with member jurisdictions, the BC Government, construction industry and other regional partners to develop a regional working group focused on reducing the embodied emissions in new construction and building retrofits. The working group should support accelerated policy development, establish a regional baseline for embodied emissions, and would also align with the Building Decarbonization Coalition (see Action 2.2.3).	Metro Vancouver	  	2022 – 2023
SUPPORTING CORPORATE ACTIONS			
<b>2.5.5 Strengthen Metro Vancouver’s Corporate Sustainable Design Requirements.</b> Update Metro Vancouver's <i>Sustainable Infrastructure and Buildings Policy</i> to include increasingly stringent embodied emission requirements and greenhouse gas performance limits. These requirements should align with the corporate low carbon procurement policies in Action 3.3.4.	Metro Vancouver	  	2023 – 2024

### Issue Area 3: Industry and Business

The region's diverse industrial facilities and businesses contribute to our local economy, providing jobs to residents and products to supply chains and consumers. For this Issue Area, "Industry and Business" includes industrial facilities, non-road equipment, building construction and demolition, and small and medium businesses.

#### CALL OUT BOX

Regional industrial and business operations generate 25% of greenhouse gases and 65% of volatile organic compounds. Industrial facilities generate 15% of regional fine particulate matter and non-road equipment generates over 40% of regional diesel particulate matter. These emissions come from burning fuel, chemical and other manufacturing processes, product off-gassing, wind-blown particulate matter, and fugitive leaks from process equipment and piping. Some industrial and business activities create odorous air contaminants.

Industrial facilities and businesses are innovating to support clean technology solutions. Opportunities to reduce emissions from industry and business include transitioning to clean, renewable energy; adopting more low and zero emission technologies; replacing older non-road equipment; and supporting low and zero emission solutions for small and medium businesses. More background on climate change, and industry and business is included in the *Climate 2050 Industry Roadmap*.

### Long-term Goals

1. The industrial and business sector is carbon neutral.
2. All industrial and business operations minimize air contaminant emissions using lowest achievable emission technologies.

### 2030 Targets







- Industrial facilities
  - o 35% reduction in greenhouse gas emissions, from 2010 levels
  - o 10% reduction in fine particulate matter emissions, from 2020 levels
  - o 10% reduction in nitrogen oxides emissions, from 2020 levels
- Non-road
  - o 35% reduction in greenhouse gas emissions, from 2010 levels
  - o 50% reduction in diesel particulate matter emissions, from 2020 levels



















## Strategies and Actions













### Strategy 3.1 Accelerate Emission Reductions from Industrial Facilities.

Over 1,000 industrial facilities and related commercial operations operate under Metro Vancouver permits and regulations, which have historically focused on emissions of health-harming air contaminants. These operations make cement, concrete, and forest products, refine petroleum, distribute gasoline, paint vehicles and more. There are significant technical challenges to decarbonizing some large industrial facilities, particularly the high heat requirements needed for some manufacturing processes. Integrating greenhouse gas requirements into Metro Vancouver's permits and regulations, along with cleaner fuels and more stringent emission requirements, will help achieve the 2030 emission targets for industrial facilities.

<p><i>Potential Impacts of Strategy in 2030</i></p> <p>Reduce annual greenhouse gases by up to <b>520,000 tonnes</b></p> <p>Reduce annual health-harming air contaminants by up to <b>2,100 tonnes</b></p>	<p><i>Key Partners</i></p> <ul style="list-style-type: none"> <li>- BC Government</li> <li>- Government of Canada</li> <li>- Industrial facilities</li> </ul>
--	---

Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
<b>MAJOR REGIONAL ACTIONS</b>			
<b>3.1.1 More Stringent Greenhouse Gas Requirements for Large Industrial Emitters.</b> Advocate to the BC Government to implement more stringent requirements for BC-based industrial facilities with significant greenhouse gas emissions. This could include increases to or expansion of the carbon tax, as well as mandatory carbon offsets. Requirements would be supported by incentives under Action 3.1.3.	BC Government	  	2022 – 2023
<b>3.1.2 Integrate Greenhouse Gases into Emission Regulations and Permits.</b> Develop and implement processes to integrate greenhouse gas reduction requirements into new emission regulations, amendments of existing emission regulations, new permits, and permit amendments. Integration would consider greenhouse gas regulations implemented by the BC Government, as well as the benefits and tradeoffs of reducing greenhouse gases versus improving regional air quality. Integration could include greenhouse gas emission limits and fees, and could require permitted industrial facilities to evaluate opportunities to transition to clean, renewable energy, better utilize waste heat, or to phase out the use of some fossil fuels.	Metro Vancouver	  	2022 – 2023










<b>3.1.3 Industrial Emission Reduction Incentives.</b> Advocate to the BC Government and Government of Canada to enhance or develop incentives for industrial facilities to reduce emissions of greenhouse gases and other air contaminants. Incentives could include rebates on carbon tax or energy efficiency upgrades, as well as tax credits. Incentives should be based on emission reductions that meet or exceed relevant industrial emission benchmarks.	BC Government, Government of Canada	  	2022 – 2023
<b>3.1.4 Implement Renewable Gas Content Requirements.</b> Advocate to the BC Government to establish content requirements for renewable gas, in line with targets in the provincial <i>CleanBC</i> plan. Renewable gas includes renewable natural gas, which has a lower carbon intensity than natural gas from fossil fuels.	BC Government	  	Ongoing
<b>3.1.5 Develop Sector-Specific Regulations.</b> Develop and update sector-specific regulations to accelerate emission reductions from specific industrial, commercial or business sectors. Sectors targeted would be based on air quality and climate change impacts, emission reduction potential, emerging issues and other factors.	Metro Vancouver	  	Ongoing
SUPPORTING REGIONAL ACTIONS			
<b>3.1.6 Provincial and Federal Industrial Emission Standards.</b> Advocate to the Government of Canada and the BC Government to continue developing stringent emission standards for industrial facilities to help improve air quality. Industrial sectors could include chemicals, petroleum refining, pipelines, shipping of bulk goods, and wood products.	Government of Canada, BC Government	  	2023 – 2024
<b>3.1.7 Carbon Tariffs.</b> Advocate to the Government of Canada and the BC Government to establish carbon tariffs or carbon border tax adjustments for imported industrial, manufactured and agricultural goods. This will help industrial facilities and businesses in the region to compete fairly against imported goods with higher carbon content.	Government of Canada, BC Government	  	2022 – 2023
<b>3.1.8 Regional Industrial Emissions Working Group.</b> Work with the BC Government, local First Nations, regional industry, business associations, academic institutions, port terminals and other partners to explore the opportunities for establishing a regional industrial emissions working group. If established, the working group would collectively identify the best opportunities to both minimize air quality impacts from industrial facilities and reduce industrial greenhouse gas emissions. The working group could help accelerate emission control innovation at industrial facilities, including supporting pilot projects.	Metro Vancouver	  	2022 – 2023













<b>3.1.9 Improve Volatile Organic Compound Content Limits.</b> Advocate to Government of Canada to implement more stringent volatile organic compound content limits for architectural and automotive paints, household products, industrial chemical products and other products that release significant amounts of volatile organic compounds.	Government of Canada	  	Ongoing
<b>3.1.10 Reduce Air Quality Impacts from Odorous Air Contaminants.</b> Continue to develop and implement a regional odour management framework, including measures to prevent, collect, control and disperse odorous air contaminants from industries and businesses. Odorous air contaminants are made up of many different compounds, some of which are immediately harmful to human health. This could include development of an emission regulation for organics processing facilities, which can be a source of odorous air contaminants.	Metro Vancouver	  	Ongoing
<b>3.1.11 Phase out High Global Warming Refrigerants.</b> Advocate to the Government of Canada to accelerate the phase out of halocarbons that have a high global warming potential, including refrigerants and blowing agents. This would support Action 2.1.8 on enhancing compliance with existing halocarbon regulations.	Government of Canada	  	2024 – 2025
<b>3.1.12 Improved Emission Controls at Petroleum Storage and Loading Facilities.</b> Advocate to the Government of Canada and the BC Government to explore the opportunities to reduce volatile organic compound emissions at federally and provincially regulated land- and marine-based facilities for storing and distributing petroleum products.	Government of Canada, BC Government	  	2025 – 2026

### *Strategy 3.2 Reduce Non-Road Emissions and Support Early Adoption of Zero Emission Non-Road Equipment.*

Almost 850,000 non-road equipment units are used in the region, primarily for construction and commercial operations, cargo-handling, and lawn and garden maintenance. They are a regional source of harmful diesel particulate matter, nitrogen oxides and greenhouse gases. Metro Vancouver's *Non-Road Diesel Engine Emission Regulation* (and the Vancouver Fraser Port Authority's related program) are helping to manage emissions from older, higher-emitting non-road diesel engines. More stringent emission requirements for new and existing non-road engines will help achieve the 2030 non-road targets for greenhouse gases and diesel particulate matter. The BC Government and Government of Canada should support development and commercialization of zero emission non-road engines, which would reduce air contaminant emissions over the long term.

<p><i>Potential Impacts of Strategy in 2030</i></p> <p>Reduce annual greenhouse gases by up to <b>220,000</b> tonnes</p> <p>Reduce annual health-harming air contaminants by up to <b>200</b> tonnes</p>	<p><i>Key Partners</i></p> <ul style="list-style-type: none"> <li>- BC Government</li> <li>- Government of Canada</li> <li>- Vancouver Fraser Port Authority</li> </ul>
--	---













Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
<b>MAJOR REGIONAL ACTIONS</b>			
<p><b>3.2.1 Tighten Metro Vancouver’s Emission Regulation for Non-Road Diesel Engines.</b> Update Metro Vancouver’s emission regulation for non-road diesel engines with more stringent requirements that could cover additional air contaminants, equipment types, fuels and engine sizes. These updates should incentivize the early adoption of zero emission non-road equipment. Any updates should be coordinated with Vancouver Fraser Port Authority to align requirements as much as possible.</p>	Metro Vancouver	  	Ongoing
<p><b>3.2.2 Emission Standards for New Non-Road Equipment.</b> Advocate to the Government of Canada to adopt more stringent fuel economy and emission standards for new non-road equipment. Cleaner non-road equipment standards will improve regional and local air quality and increase the availability of low and zero emission non-road equipment.</p>	Government of Canada	  	2022 – 2023
<p><b>3.2.3 Funding for Cleaner Non-Road Equipment.</b> Advocate to the BC Government and Government of Canada to enhance funding (e.g., incentives, loans, tax credits) to replace or retrofit existing non-road equipment, to reduce emissions of health-harming air contaminants and greenhouse gases. Higher incentives should be available for zero emission equipment. (Action 4.1.5 advocates for funding for cleaner agricultural non-road equipment.)</p>	BC Government, Government of Canada	  	2022 – 2023




SUPPORTING REGIONAL ACTIONS			
<b>3.2.4 Identify Infrastructure Needs for Zero Emission Non-Road Equipment.</b> Work with member jurisdictions, energy utilities, Vancouver Fraser Port Authority and other regional partners to identify the regional infrastructure needs to support a long-term transition of zero emission non-road equipment. This would consider the refueling and charging needs for different types of non-road equipment, and should align with similar actions for passenger vehicles and medium and heavy duty trucks (Actions 1.1.3 and 1.3.6).	Energy utilities, Metro Vancouver, member jurisdictions	  	2025 – 2026
<b>3.2.5 Encourage Cleaner Non-Road Equipment for Construction.</b> Advocate to member jurisdictions to encourage the use of low or zero emission non-road equipment for construction. For example, builders and developers using cleaner non-road equipment could receive development benefits such as lower building permit fees.	Member jurisdictions	  	2023 – 2024
<b>3.2.6 Awareness Program on Zero Emission Non-Road Equipment.</b> Work with member jurisdictions and other regional partners to develop and implement an awareness and outreach program for residents and businesses about the benefits of zero emission non-road equipment. The program would include regularly updated information on the availability of zero emission equipment, and could include guidance on “right-sizing” equipment.	Metro Vancouver, member jurisdictions	  	2023 – 2024
SUPPORTING CORPORATE ACTIONS			
<b>3.2.7 Transition Corporate Non-Road Fleet to Zero Emissions.</b> Transition Metro Vancouver’s corporate non-road fleet to zero carbon emissions by 2040, and zero emissions by 2050. (Action 2.1.11 covers Metro Vancouver’s corporate on-road fleet.)	Metro Vancouver	  	Ongoing

*Strategy 3.3 Reduce Emissions through Procurement and from Small and Medium Businesses.*

Businesses in the region have been helping to improve regional air quality, as well as reduce their greenhouse gas emissions. Additional technical support and guidance will help businesses adopt cleaner operating practices. Developing regional guidance on buying low carbon products will help reduce the embodied greenhouse gas emissions of goods and services. These steps will help achieve the 2030 regional targets to improve air quality and reduce greenhouse gas emissions. Key partners for this strategy include member jurisdictions, local businesses, the Government of Canada and the BC Government.









Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
MAJOR REGIONAL ACTIONS			
<b>3.3.1 Regional Low Carbon Procurement.</b> Work with member jurisdictions and other regional partners to develop and implement regional guidance on procurement to prioritize low carbon products, equipment and services for construction and other projects. The guidance could outline best practices, available certifications, calculation methods, greenhouse gas targets and emission disclosure requirements. The guidance should align with Strategy 2.5 on reducing embodied emissions in buildings, as well as Action 3.3.4.	Metro Vancouver, member jurisdictions	  	2023 – 2024
SUPPORTING REGIONAL ACTIONS			
<b>3.3.2 Air Quality Best Management Practices for Businesses and Organizations.</b> Develop and promote a best practices guide for small and medium businesses and similar organizations about how they can help improve regional air quality. The guide would fill gaps identified in coordination with local businesses and other regional partners. The guide would also reflect practices identified in Metro Vancouver’s corporate guidance (Action 3.3.5).	Metro Vancouver	  	2025 – 2026
<b>3.3.3 Integrate Climate Considerations into Standard Business Practices.</b> Advocate to the Government of Canada and the BC Government to integrate climate considerations into financial reporting and other standard business practices. Integration could include public disclosure of business carbon footprints and climate-related risks, as well as changes to legislation or accounting standards. These practices would push businesses and industrial facilities to prioritize management of climate risks in operations and practices.	Government of Canada, BC Government	  	2023 – 2024
SUPPORTING CORPORATE ACTIONS			
<b>3.3.4 Low Carbon Corporate Procurement.</b> Adopt low carbon procurement guidance as a Metro Vancouver corporate standard, in alignment with Action 3.3.1. This would show how procurement can support low carbon (and resilient) buildings, infrastructure and services. This action aligns with Action 2.5.5 on updates to Metro Vancouver’s Sustainable Infrastructure and Buildings Policy.	Metro Vancouver	  	2022 – 2023

<b>3.3.5 Corporate Opportunities to Reduce Emissions of Health-harming Air Contaminants.</b> Explore and develop Metro Vancouver guidance to reduce corporate impacts on regional air quality. The guidance could identify practices that reduce emissions health-harming air contaminants from activities such as construction, demolition, solvent use, painting and surface coating, road asphalt and more.	Metro Vancouver	  	2025 – 2026
--	-----------------	---	-------------

#### Strategy 3.4 Explore Opportunities for Technological Carbon Capture

Long term modelling of regional greenhouse gas emissions indicates that climate actions focusing only on reducing emissions are likely insufficient for the Metro Vancouver region to reach carbon neutrality by 2050. Additional removal of carbon dioxide from the atmosphere is expected to be necessary, to avoid the worst impacts of climate change. While natural carbon sequestration can be increased in the region, its potential impact is expected to be limited. (This is described in more detail in the *Climate 2050 Nature & Ecosystems Roadmap*.) As such, technological carbon capture will be needed. Initial research on the opportunities for these technologies in the region will support the 2030 greenhouse gas target for industrial facilities.

<b>Potential Impacts of Strategy in 2030</b> Reduce annual greenhouse gases by up to <b>50,000 tonnes</b> No regional air quality impacts are expected	<b>Key Partners</b> <ul style="list-style-type: none"> <li>- BC Government</li> <li>- Industrial facilities</li> <li>- Academic Institutions</li> </ul>
--	---

Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
MAJOR REGIONAL ACTIONS			
<b>3.4.1 Carbon Capture in Metro Vancouver Region.</b> Explore the potential opportunities for carbon capture technologies in the region, including pilot projects and uses of captured carbon dioxide.	Metro Vancouver	  	Ongoing
SUPPORTING REGIONAL ACTIONS			
<b>3.4.2 Develop Carbon Capture Standards.</b> Advocate to the BC Government to develop technical standards for carbon capture technologies.	BC Government	  	2023 – 2024

## Issue Area 4: Agriculture

Agriculture contributes to the regional economy and provides fresh, healthy food for local consumption and export. Protecting agricultural land supports regional food security and provides ecosystem services, which are public benefits that include flood management, carbon sequestration and wildlife habitat. Agricultural activities also generate emissions of greenhouse gases and other air contaminants.

### CALL OUT BOX

Agricultural activities generate 4% of regional greenhouse gas emissions, primarily from heaters and boilers in greenhouses, agricultural equipment, and livestock. Some agricultural activities cause emissions of ammonia, fine particulate matter and volatile organic compounds, which impact regional air quality, visual air quality, and human health. The main sources of these emissions are poultry and cattle manure, ammonia fertilizers, fuel combustion, open-air burning, wind erosion of soils, and fugitive dust.

Odours can come from normal farm practices such as manure application. Some agricultural practices generate odorous air contaminants, which are generally more challenging to manage than nuisance odours.

Additional information on climate change and agriculture is outlined in the *Climate 2050 Agriculture Roadmap*, including opportunities on climate adaptation and enhancing carbon sequestration on agricultural lands.

### Long-term Goals

1. The agricultural sector is carbon neutral and maximizes carbon sequestration.
2. The agricultural sector minimizes air contaminant emissions continues using best available management practices and technologies, and clean, renewable energy.













### 2030 Targets



















- 35% reduction in greenhouse gas emissions, from 2010 levels
- 10% reduction in fine particulate matter, from 2020 levels

### Strategy 4.1 Reduce Emissions from Agriculture Sector.

The BC Government and Government of Canada support emission reductions in agriculture through Environmental Farm Plans and Beneficial Management Practices. Improving energy efficiency in greenhouses and switching to clean, renewable energy for greenhouses and agricultural equipment will help achieve the 2030 agriculture emission targets for greenhouse gases and fine particulate matter. Alternatives to burning agricultural vegetative waste and enhanced beneficial management practices will help achieve 2030 targets for greenhouse gases and fine particulate matter. Increasing the production of renewable natural gas through anaerobic digestion of agricultural and other waste will help to displace natural gas from fossil fuels in sectors where zero emission solutions are more challenging.

<p><i>Potential Impacts of Strategy in 2030</i></p> <p>Reduce annual greenhouse gases by up to <b>150,000</b> tonnes</p> <p>Reduce annual health-harming air contaminants by up to <b>50</b> tonnes</p>	<p><i>Key Partners</i></p> <ul style="list-style-type: none"> <li>- BC Government</li> <li>- Agriculture community</li> <li>- Member jurisdictions</li> </ul>
---	---

Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
<b>MAJOR REGIONAL ACTIONS</b>			
<b>4.1.1 Reduce Emissions from Greenhouses.</b> Work with the BC Government, BC Agricultural Council, BC Greenhouse Growers Association and member jurisdictions to explore opportunities to reduce emissions from greenhouses. Opportunities could include improving energy performance and transitioning to using more clean, renewable energy.	BC Government, Metro Vancouver, member jurisdictions	  	2024 – 2025
<b>4.1.2 Reduce Open-Air Burning.</b> Work with the agricultural producers to reduce barriers to adopting alternatives to open-air burning of agricultural vegetative waste. These alternatives would complement open-air burning regulatory requirements.	Metro Vancouver	  	Ongoing
<b>SUPPORTING REGIONAL ACTIONS</b>			
<b>4.1.3 Outreach Program on Reducing Agricultural Emissions.</b> Develop and implement an awareness and outreach program on reducing agricultural emissions. The program would be developed with the agriculture community, member jurisdictions and BC Government, and would supplement existing agricultural outreach and support programs.	Metro Vancouver, member jurisdictions	  	2025 – 2026
<b>4.1.4 Enhance Funding for Environmental Farm Plans.</b> Advocate to the Government of Canada and BC Government to enhance the funding for developing and implementing Environmental Farm Plans. This program helps agricultural operations reduce emissions of particulate matter, ammonia, nitrous oxide, methane and odorous air contaminants. This should include continued development and promotion of beneficial management practices, as well as providing incentives and technical guidance to farms to support adoption of low emission practices and technologies.	Government of Canada, BC Government	  	2023 – 2024

<p><b>4.1.5 Incentives for Farmers to Transition to Lower Emission Equipment.</b> Advocate to the BC Government and Government of Canada to enhance or develop incentives (or tax credits) for cleaner agricultural equipment. This would help accelerate the transition to lower emission equipment (e.g., a harvester with better emission controls) or encourage the installation of improved emission controls on existing equipment (e.g., diesel particulate filters). Higher incentives should be available for zero emission equipment to increase their adoption. (Action 3.2.3 advocates for incentives for cleaner non-road equipment for non-agricultural uses.)</p>	BC Government, Government of Canada	  	2023 – 2024
<p><b>4.1.6 Pilot Study with Zero Emission Agricultural Equipment.</b> Work with the BC Government and the agricultural sector to develop a pilot study for zero emission agriculture equipment such as an electric tractor. The study could identify the long-term pathways for wider adoption of zero emission agricultural equipment, including infrastructure requirements.</p>	BC Government, Metro Vancouver	  	2026 – 2027
<p><b>4.1.7 Regulatory Requirements for Cannabis Industry.</b> Develop an emission regulation to reduce air quality impacts from the cannabis industry. Regulatory requirements would be based on air quality impacts, emission reduction potential, and other factors.</p>	Metro Vancouver	  	Ongoing
<p><b>4.1.8 Streamline Emission Requirements for Anaerobic Digestion Facilities.</b> Develop an emission regulation for anaerobic digestion of manure, other agricultural waste and commercial food waste. The regulation would maintain equivalent protections for regional air quality and human health as the existing permit process, and would provide a simpler path to regulatory compliance.</p>	Metro Vancouver	  	2023 – 2024
<p><b>4.1.9 Expand Anaerobic Digestion of Agricultural Waste.</b> Advocate to the BC Government, Government of Canada, energy utilities and member jurisdictions to expand development of anaerobic digestion facilities to process manure, other agricultural waste and commercial food waste. This could include financial incentives (and tax credits) and removal of barriers in existing regulations. Any expansion should avoid the loss of agricultural land in the Metro Vancouver region.</p>	BC Government	  	2022 – 2023
<p><b>4.1.10 Encourage Local Agriculture.</b> Advocate to member jurisdictions and other regional partners to continue encouraging more local food production, prioritizing agricultural practices that reduce emissions or help sequester carbon.</p>	Member jurisdictions	  	Ongoing

## Issue Area 5: Health

Emissions are the air contaminants that emission sources release into the air; they are most concentrated near the source and are dispersed over time and distance. Exposure refers to the air contaminants that residents breathe where they live, study, play and work. Managing exposure to health-harming air contaminants reduces their impacts on residents and communities in the Metro Vancouver region.

### CALL OUT BOX

#### Indoor air quality

Metro Vancouver will continue to work with the BC Government, health authorities and member jurisdictions to improve indoor air quality. Health authorities are responsible for managing indoor air quality. Areas of concern include the impact of airtight buildings, infiltration of air contaminants from outdoors, and the impact of indoor sources such as gas stoves, wood burning, and consumer products.

### Long-term Goal

1. Residents in the region do not experience disproportionate impacts from air quality and climate change.
















### 2030 Targets

- Under development

### Strategies and Actions

#### *Strategy 5.1 Reduce Residents' Exposure to Harmful Air Contaminants.*

Managing exposure to health-harming air contaminants reduces their impacts on residents and communities in the Metro Vancouver region. Integrating health impact assessments and protecting indoor air quality can reduce the amount of air contaminants residents breathe from medium and heavy duty trucks, wildfires and other sources. The key partners for this strategy include health authorities, member jurisdictions and the BC Government.

Actions to be Completed by 2030	Lead Agency(ies)	Potential Impacts of Actions	Start Year(s)
MAJOR REGIONAL ACTIONS			
<b>5.1.1 Integrate Health Impact Assessments into Major Projects.</b> Work with member jurisdictions, health authorities, BC Government and Government of Canada to integrate health impact assessments into review processes for major transportation, development and industrial projects. Integration would be supported by guidance on how to reduce residents' exposure to harmful air contaminants, such as from medium and heavy trucks. Guidance could include recommendations for urban form and land use, infrastructure and ventilation design, and siting of emission sources.	Member jurisdictions, health authorities	  	2024 – 2026
<b>5.1.2 Protect Against Wildfire Smoke Impacts.</b> Work with health authorities, member jurisdictions and other regional partners to further protect against smoke from wildfires. Protections could include actions to prevent wildfires, more “clean air” shelters in public buildings (e.g., community centres, libraries), resources to help residents use home air filters, and providing high quality information to the public during advisories.	Metro Vancouver, health authorities	  	2022 – 2026
<b>5.1.3 Strengthen Relationships with First Nations on Air Quality Issues.</b> Work to strengthen relationships with local First Nations to improve understanding of air quality concerns in First Nations communities in the region (e.g., transportation and industrial emissions), along with potential solutions.	Metro Vancouver	  	Ongoing
SUPPORTING REGIONAL ACTIONS			
<b>5.1.4 Health and Air Quality Awareness.</b> Work with health authorities and other health partners to develop awareness and outreach activities to inform residents and businesses about the links between air quality and personal and public health, including impacts on vulnerable populations. Outreach should ensure information reaches the populations who are most vulnerable to air quality impacts.	Health authorities, Metro Vancouver	  	2022 – 2023
<b>5.1.5 Enhance Social Support Programs to Consider Air Quality Impacts.</b> Advocate to the BC Government and Government of Canada to enhance social support programs to consider air quality impacts. Enhancements should support residents that are at higher risk from exposure to air contaminants, such as through poor building ventilation and heating systems.	BC Government, Government of Canada	  	2022 – 2024



## Issue Area 6: Measure, Monitor and Regulate

Metro Vancouver drives continuous improvement in air quality and greenhouse gas management through a fair, efficient and effective management program. Measuring emissions and monitoring ambient air quality provide the foundation for Metro Vancouver's air quality and greenhouse gas management program. Metro Vancouver authorizes emissions through permits and regulations, and promotes compliance through various mechanisms. Public communication ensures that residents and businesses are aware of and understand air quality and climate change issues. Metro Vancouver adapts its methods as needed to respond to technological advances, changing regulatory regimes and emerging issues.

This issue area outlines how Metro Vancouver currently operates as an air quality and greenhouse gas authority, as well as identifying future directions. The actions associated with measurement, monitoring and regulation cut across Issue Areas 1 to 5; many of the actions in those issue areas will require measurement or tracking on an individual issue area basis.

### Long-term Goals

1. Metro Vancouver implements world-leading and innovative air quality and greenhouse gas management services and solutions.
2. Metro Vancouver residents have a high awareness and accurate understanding of climate change and air quality issues, and can identify opportunities to take action through behaviour change, purchasing decisions and citizen advocacy.

### 2030 Targets

- 98% reliability of ambient air quality monitoring network

#### *Strategy 6.1 Implement Leading Management Practices to Continually Improve Air Quality and Greenhouse Gas Emissions.*

Emerging and innovative technologies such as low cost sensors, big data and machine learning are creating opportunities to extend the reach of our existing monitoring network, and improve management of local impacts. Continuing to improve management practices and processes could streamline emission authorizations and reviews for regulated entities. Enhancing communications with the public will help achieve the public awareness goal.

Up to date information on any of the actions or directions in this strategy are available on Metro Vancouver's website ([www.metrovancouver.org](http://www.metrovancouver.org), search "air quality and climate change").

CURRENT ACTIONS	FUTURE DIRECTIONS
<b>6.1.1 Air Quality and Greenhouse Gas Management.</b> Work with member jurisdictions, health authorities, BC Government and other partners on air quality, visual air quality and	<ul style="list-style-type: none"><li>• Explore the adoption of service establishment bylaws to support regional climate change programs.</li></ul>



greenhouse gas management. Approaches include strategic planning, guidance, tools, dispersion modelling guidelines, public reporting, industrial proposal reviews, etc.	<ul style="list-style-type: none"> <li>• Pursue legislative changes enable non-regulatory approaches to support emission reductions from businesses.</li> <li>• Explore and implement innovative technologies and approaches to improve air quality and greenhouse gas management, such as machine learning.</li> <li>• Explore the benefits of adopting regional carbon budgets to guide climate planning.</li> <li>• Continue to update <i>Climate 2050 Roadmaps</i> in response to changing science, technology, public opinion and partnership opportunities.</li> </ul>
<b>6.1.2 Ozone Management.</b> Implement targeted actions under existing <i>Regional Ground Level Ozone Strategy</i> to minimize ozone impacts in the Lower Fraser Valley, working with regional partners.	<ul style="list-style-type: none"> <li>• Update <i>Regional Ground-Level Ozone Strategy</i> and continue to implement targeted actions to reduce impacts of ozone on regional air quality.</li> </ul>
<b>6.1.3 Odour Management.</b> Implement existing regional odour management framework. Framework addresses key sources of odorous air contaminants, odour monitoring, complaint management and public outreach.	<ul style="list-style-type: none"> <li>• Continue development of sector-specific regulations that address air contaminants, including odorous air contaminants.</li> <li>• Develop odour monitoring capacity within the region.</li> </ul>
<b>6.1.4 Visual Air Quality Management.</b> Implement existing visual air quality management program for the Lower Fraser Valley, working with regional partners.	<ul style="list-style-type: none"> <li>• Continue to develop and implement policies and programs to improve visual air quality in the Lower Fraser Valley.</li> </ul>
<b>6.1.5 Complaint Management.</b> Review and respond to air quality complaints. Responding can include communication with the alleged source, site visits, air quality monitoring and compliance or enforcement action.	<ul style="list-style-type: none"> <li>• Streamline complaint response process to identify and resolve new air quality issues.</li> </ul>
<b>6.1.6 Emissions Inventories and Related Data Sets.</b> Track and forecast regional emissions of air contaminants, including greenhouse gases, to measure performance, track progress towards goals and targets, and guide policy and regulatory development. The primary inventory is the Lower Fraser Valley regional emissions inventory developed every 5 years; specialized approaches include inventories of hazardous air pollutants, and additional tracking of greenhouse gases.	<ul style="list-style-type: none"> <li>• Track regional greenhouse gas emissions on annual basis.</li> <li>• Develop a consumption-based emissions inventory for greenhouse gases.</li> <li>• Improve understanding of emissions from refrigerants and halocarbons, natural volatile organic compounds, large sources of fugitive particulate matter, and natural gas leakage, automated vehicles.</li> <li>• Continue to work with member jurisdictions and others regional partners on developing, aligning, and sharing regional data sets.</li> </ul>
<b>6.1.7 Air Quality Monitoring.</b> Measure levels of key air contaminants and visual air quality across the region, working with regional partners. Monitoring includes fixed and temporary sites, as	<ul style="list-style-type: none"> <li>• Enhance monitoring network with low cost and portable sensors, near-road and community monitoring, and carbon dioxide monitoring.</li> </ul>

well as specialized monitoring studies. Review monitoring network every 5-10 years to respond to regional changes, emerging issues and help protect human health and the environment.	<ul style="list-style-type: none"> <li>• Measure the changing climate and the impacts to air quality, including visual air quality.</li> <li>• Develop and implement a user-friendly open data portal, so the public and researchers can more easily access and use data collected by Metro Vancouver.</li> <li>• Explore options to improve rapid monitoring capabilities during air quality emergencies.</li> </ul>
<b>6.1.8 Ambient Air Quality Objectives.</b> Develop and update ambient air quality objectives, establishing acceptable thresholds for concentrations of air contaminants. Concentrations are compared to objectives to determine achievement of the objectives.	<ul style="list-style-type: none"> <li>• Develop new and updated objectives based on current health research and best practices.</li> <li>• Explore expected impact of <i>Clean Air Plan</i> actions on achievement of ambient air quality objectives.</li> </ul>
<b>6.1.9 Air Quality Advisories.</b> Develop and issue air quality advisories and bulletins to inform the public during periods of degraded air quality, working with regional partners	<ul style="list-style-type: none"> <li>• Continue to work with regional partners on managing air quality advisories and bulletins, and enhancing public awareness.</li> </ul>
<b>6.1.10 Bylaw and Regulation Development.</b> Develop and amend bylaws and emission regulations to protect human health and the environment. Regulatory development uses best available evidence and includes engagement with the public, stakeholders and other governments.	<ul style="list-style-type: none"> <li>• Continue to develop and implement tools to assess costs and benefits for new or significantly modified emission regulations.</li> <li>• Introduce expanded regulatory requirements for greenhouse gas emissions (Action 3.1.2).</li> </ul>
<b>6.1.11 Regulatory Authorizations and Compliance.</b> Authorize emissions through regulations and air permits. Promote compliance with regulatory requirements through inspections, report reviews and, where necessary, issuing notices of violation, tickets or orders. Identify opportunities in permits and regulations to reduce emissions and impacts, and work to address emerging air quality issues through existing regulatory tools.	<ul style="list-style-type: none"> <li>• Develop a framework for issuing administrative penalties.</li> </ul>
<b>6.1.12 Public Communication.</b> Communicate with the public, stakeholders and other governments about local and regional air quality and climate change issues, and provide resources to support emission reductions. Some current approaches include the annual Caring for the Air report, Air Quality Health Index, annual Air Quality Monitoring Reports, <a href="http://www.AirMap.ca">www.AirMap.ca</a> , <a href="http://www.CleanAirBC.ca">www.CleanAirBC.ca</a> , public opinion research, and others.	<ul style="list-style-type: none"> <li>• Improve online air quality and climate change communication tools.</li> <li>• Develop and promote a climate literacy online learning tool to support citizen advocacy and personal choices.</li> <li>• Develop metrics to track public awareness of air quality and climate change issues.</li> </ul>
<b>6.1.13 Environmental Assessments.</b> Provide technical feedback and mitigation	<ul style="list-style-type: none"> <li>• Advocate that environmental assessments improve consideration of upstream and</li> </ul>

recommendations to environmental and impact assessments for major projects conducted under provincial and federal regulations, and through inter-agency referrals.	downstream emissions, and recognize Metro Vancouver's recommended conditions.
<b>6.1.14 Specialized Studies.</b> Conduct specialized studies on emerging areas of concern in local and regional air quality and climate change, such as air quality near major roads and regional climate projections.	<ul style="list-style-type: none"> <li>• Improve understanding of the impacts and interactions between air contaminants and the region's natural environment (working with researchers).</li> </ul>

DRAFT

## Glossary

**Active transportation** includes self-powered modes of transportation such as walking, biking, skateboarding, in-line skating/rollerblading, jogging and running, wheel chairing, snowshoeing and cross-country skiing.

**Air contaminants** means any substance that is emitted into the air and that (a) injures or is capable of injuring the health or safety of a person; (b) injures or is capable of injuring property or any life form; (c) interferes or is capable of interfering with visibility; (d) interferes or is capable of interfering with the normal conduct of business; (e) causes or is capable of causing material physical discomfort to a person; or (f) damages or is capable of damaging the environment.

**Ambient air quality objectives and standards** are health-based targets which define the acceptable outdoor concentration of key air contaminants. Metro Vancouver, the BC Government and Government of Canada adopt objectives and standards that become more stringent over time, to drive continuous improvement in air quality.

**Anaerobic digestion** breaks down waste products in the absence of oxygen to create biogas, which can be converted into renewable natural gas.

**Carbon dioxide** (CO<sub>2</sub>) is the primary driver of climate change, and is produced mainly by burning fossil fuels.

**Carbon neutral region** means that the region generates no net greenhouse gas emissions. This is achieved through the deepest greenhouse gas emission reductions possible across all economic sectors, and any remaining emissions are balanced out by the carbon dioxide that the plants, trees, and soil of the region remove from the atmosphere, or potentially through technological means.

**Carbon sequestration** is the removal of carbon dioxide from the air and the long-term storage of carbon to mitigate climate change.

**Clean, renewable energy** is low or zero emission energy that is replenished over days or years. In Metro Vancouver, clean, renewable energy is primarily electricity from renewable sources such as hydro or solar.

**Climate change adaptation** means anticipating, planning for and responding to the adverse effects of climate change and taking appropriate action to prevent or minimize the damage it can cause, or taking advantage of opportunities that may arise. It has been shown that well planned, early adaptation action saves money and lives later.

**Diesel particulate matter** is a form of fine particulate matter from diesel engines that is classified as carcinogenic.

**District energy** systems provide heating and cooling to a network of residential and commercial buildings more efficiently, and generally with lower emissions than individual building heating and cooling systems.

**Embodied emissions** are greenhouse gas emissions associated with the construction of goods and products, including the raw materials and the transport of the good or product to where it is sold.

**Equity** is the promotion of fairness, justice and the removal of structural barriers that may cause or aggravate disparities experienced by different groups of people.

**Fine particulate matter** (PM<sub>2.5</sub>) is made up of tiny solid or liquid particles that float in the air and can penetrate deep into the lungs and even into the bloodstream. Fine particulate matter can damage people's health by aggravating existing lung and heart diseases, increasing the risk of cancer and reducing life expectancy.

**Greenhouse gases** are air contaminants that trap heat and are the cause of climate change. Greenhouse gases include carbon dioxide, methane, nitrous oxide, halocarbons, black carbon and ozone. Limiting or preventing greenhouse gas emissions and removing these gases from the atmosphere is critical to avoiding catastrophic climate change (sometimes referred to as "climate change mitigation").

**Ground-level ozone** (O<sub>3</sub>) can have harmful impacts on everyone, especially children, the elderly, and people with lung and heart conditions. It is primarily formed when nitrogen oxides and volatile organic compounds react in the air on hot and sunny days.

**Health-harming air contaminants** are air contaminants that can harm public health and reduce residents' quality of life and life expectancy by causing heart and lung diseases, cancer, asthma, and other impacts. Health-harming air contaminants include fine and coarse particulate matter, diesel particulate matter, ground-level ozone, nitrogen dioxide, sulphur dioxide, volatile organic compounds and ammonia.

**Low carbon building upgrades** include upgrading building insulation and windows, sealing out drafts and switching to electric heating and cooling. These upgrades can significantly reduce energy consumption and emissions.

**Marine vessels** include ocean-going marine vessels (e.g., container, bulk, tanker, fishing, cruise and other specialty vessels), harbour vessels and passenger ferries.

**Medium and heavy duty trucks** are mostly freight vehicles such as long-haul trucks and cube vans, but can also include buses and refuse trucks.

**Methane** (CH<sub>4</sub>) is a short-lived greenhouse gas and is 25 times more effective than carbon dioxide at trapping heat in the atmosphere.

**Mobility pricing** refers to how we pay to get around. Some types of mobility pricing (e.g., decongestion charging, low emission zones) are used to manage demand for roads and reduce emissions.

**Nitrogen dioxide** (NO<sub>2</sub>) can damage people's health by aggravating existing lung diseases like asthma and bronchitis and reducing immunity to lung infections. It is formed during high-temperature fuel combustion.

**Nitrogen oxides** (NO<sub>x</sub>) are a group of gases, which includes nitrogen dioxide, that are produced during high-temperature fuel combustion, and can contribute to the formation of ground-level ozone and fine particulate matter.

**Nitrous oxide** (N<sub>2</sub>O) is a long-lived greenhouse gas, and is about 300 times more effective than carbon dioxide at trapping heat in the atmosphere.

**Non-road equipment** is any machine with an internal combustion engine that is not used or intended for transportation on public roads. Examples include stationary or mobile equipment such as loaders, cranes, generators, tractors and lawn mowers.

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

**Right-sizing fleets** means aligning the type and number of fleet vehicles to the true needs of the fleet. Right-sizing fleets reduces costs and emissions.

**Sulphur dioxide** (SO<sub>2</sub>) is emitted during the combustion of sulphur-containing fuels. Exposure to high levels of sulphur dioxide can damage people's health by aggravating asthma and increasing respiratory symptoms.

**Sulphur oxides** (SO<sub>x</sub>) are a group of gases, which includes sulphur dioxide, that are emitted during the combustion of sulphur-containing fuels. They can also react with other substances in the air to form particulate matter.

**Visual air quality** is how clear the air looks to the average observer. Metro Vancouver and its partners measure visual air quality on a scale from "very poor" to "excellent" at five sites in the Lower Fraser Valley.

**Volatile organic compounds** (VOC) are compounds that readily become vapours or gases; they are emitted during fuel combustion and from many consumer, commercial and industrial products. They have direct and indirect impacts on human health and contribute to the formation of ground-level ozone.

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

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

**Zero emission vehicles** (ZEVs) release no air contaminants from their tailpipes. Electric vehicles are the most common type of zero emission vehicle; others include hydrogen fuel cell vehicles.

**ZEV-first** is a procurement policy where priority is given to purchasing zero emission vehicles, if they are available.

Metro Vancouver is a federation of 21 municipalities, one Electoral Area and one Treaty First Nation that collaboratively plans for and delivers regional-scale services. Its core services are drinking water, wastewater treatment and solid waste management. Metro Vancouver also regulates air quality, plans for urban growth, manages a regional parks system and provides affordable housing. The regional district is governed by a Board of Directors of elected officials from each local authority.

Member jurisdictions of Metro Vancouver include:

- Village of Anmore
- Village of Belcarra
- Bowen Island Municipality
- City of Burnaby
- City of Coquitlam
- City of Delta
- Electoral Area A
- City of Langley
- Township of Langley
- Village of Lions Bay
- City of Maple Ridge
- City of New Westminster
- City of North Vancouver
- District of North Vancouver
- City of Pitt Meadows
- City of Port Coquitlam
- City of Port Moody
- City of Richmond
- City of Surrey
- Tsawwassen First Nation
- City of Vancouver
- District of West Vancouver
- City of White Rock

## Attachment 2 to the Report ‘Draft *Clean Air Plan*’ dated Feb 10, 2021

### Engagement Plan for the Draft *Clean Air Plan*

#### Introduction

Metro Vancouver is committed to engaging with the public, stakeholders and other governments, including First Nations, and incorporating their feedback into the *Clean Air Plan*.

The proposed engagement process will be conducted in accordance with the Metro Vancouver Board Policy on Public Engagement and builds on the work completed to date to develop the draft *Clean Air Plan*. The engagement plan is designed to reach a broad audience to discuss the purpose and benefits of the *Clean Air Plan*. Engagement will also seek feedback from specific sectors and organizations, which could include support, concerns about implementation or impacts, and ideas for innovation and collaboration.

Due to public health regulations, engagement activities will be conducted using virtual and online means, and staff are planning creative and engaging materials to encourage feedback. Feedback will be reported to the Committee, highlighting how it informed the final *Clean Air Plan*.

#### Engagement Objectives

- Share information with the public on the purpose and benefits of the *Clean Air Plan*.
- Provide meaningful opportunities for the public to provide feedback.
- Have meaningful conversations with specific sectors and organizations (e.g., those impacted by the proposed actions, responsible for implementation, aligned sectors, experience with equity assessment) about their support, specific concerns or impacts and thoughts on collaboration and implementation

#### Outcomes

- A broad audience is aware of their opportunity to provide input into the draft *Clean Air Plan*, and the purpose and benefits are highlighted.
- Specific sectors and organizations are aware, have the opportunity to speak with staff, and are requested to provide feedback.
- Feedback is received, recorded, and where required, staff have responded.
- Feedback is considered in revising the draft *Clean Air Plan*, and the feedback and any revisions are highlighted to the Board when presenting the final *Clean Air Plan* for adoption.

#### Audience and Anticipated Feedback

Audience categories (with examples)	Anticipated feedback
Other governments, including: <ul style="list-style-type: none"> <li>• First Nations</li> <li>• Member jurisdictions</li> <li>• Provincial agencies</li> <li>• Federal agencies</li> <li>• Neighbouring regional districts</li> </ul>	<ul style="list-style-type: none"> <li>• Aware of the <i>Clean Air Plan</i> purpose and benefits</li> <li>• Support, concerns or impacts such as:               <ul style="list-style-type: none"> <li>○ Support the <i>Clean Air Plan</i> in general</li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>○ Support or concern for specific actions</li> <li>● Identify aligned initiatives</li> <li>● Input on further alignment, implementation or collaboration</li> <li>● Any other feedback will be considered</li> </ul>
<p>Specific sectors and organizations as represented in the <i>Clean Air Plan</i> database. The list below includes categories and a few <u>examples</u> of the 500+ database:</p> <ul style="list-style-type: none"> <li>● Agencies/ organizations with a role in implementation: <ul style="list-style-type: none"> <li>○ BC Hydro</li> <li>○ TransLink</li> <li>○ Vancouver Fraser Port Authority</li> </ul> </li> <li>● Sector-specific audiences for the buildings, industry, transportation and agriculture issue areas: <ul style="list-style-type: none"> <li>○ Building Owners and Managers Association</li> <li>○ TransLink</li> <li>○ FortisBC</li> </ul> </li> <li>● Industry and business associations: <ul style="list-style-type: none"> <li>○ LandlordBC</li> <li>○ Cement Association of Canada</li> <li>○ Business Council of BC</li> <li>○ Building Officials' Association of BC</li> <li>○ Engineers and Geoscientists BC</li> </ul> </li> <li>● Vancouver Coastal, Fraser and First Nations health authorities and other health partners</li> <li>● Metro Vancouver advisory committees <ul style="list-style-type: none"> <li>○ Agriculture Advisory Committee</li> <li>○ Lower Fraser Valley Air Quality Coordinating Committee</li> </ul> </li> <li>● Municipal advisory committees <ul style="list-style-type: none"> <li>○ Municipal agricultural advisory committees</li> <li>○ Municipal environmental advisory committees</li> </ul> </li> <li>● Individuals with expertise and influence <ul style="list-style-type: none"> <li>○ In-region academics</li> <li>○ NGOs (e.g., Resilient Cities, Canadian Centre for Policy Alternatives, David Suzuki Foundation, Fraser Basin Council)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Aware of the <i>Clean Air Plan</i> purpose and benefits</li> <li>● Support, concerns or impacts such as: <ul style="list-style-type: none"> <li>○ Support the <i>Clean Air Plan</i> in general</li> <li>○ Support or concern for specific actions (e.g., investments, fees, policies, and expectations)</li> <li>○ Comments on alignment or misalignment with other initiatives</li> </ul> </li> <li>● Input on implementation, collaboration or innovation</li> <li>● Any other feedback will be considered</li> </ul>
<p>Public as reached through:</p> <ul style="list-style-type: none"> <li>● Interest in previous engagement</li> <li>● Increase reach through existing communications channels such as newsletters, social media promotion, and paid advertising</li> <li>● Request to members to amplify to residents</li> </ul>	<ul style="list-style-type: none"> <li>● Aware of the <i>Clean Air Plan</i> purpose and benefits</li> <li>● High level comments and feedback <ul style="list-style-type: none"> <li>○ Support the <i>Clean Air Plan</i> in general</li> <li>○ Concerns about the <i>Clean Air Plan</i> in general</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Comments on specific actions</li> <li>● Any other feedback will be considered</li> </ul>
<p>Youth</p> <ul style="list-style-type: none"> <li>● Might include students, teachers, student leaders and early career</li> <li>● Introduce the <i>Clean Air Plan</i> and call for feedback at upcoming Youth4Action events</li> <li>● Reach youth through preferred social media platforms and existing corporate youth social media channels</li> </ul>	<ul style="list-style-type: none"> <li>● Aware of the <i>Clean Air Plan</i> purpose and benefits</li> <li>● High level comments and feedback <ul style="list-style-type: none"> <li>○ Support the <i>Clean Air Plan</i> in general</li> <li>○ Concerns about the <i>Clean Air Plan</i> in general</li> <li>○ Comments on specific actions</li> </ul> </li> <li>● Any other feedback will be considered</li> </ul>
<p>Other areas such as equity, resilience and prosperity will also be considered as the <i>Clean Air Plan</i> continues to develop.</p>	<ul style="list-style-type: none"> <li>● Comments on draft specific or related content</li> <li>● Suggestions for Metro Vancouver to consider as these areas are further integrated into the Air Quality and Climate Change program</li> <li>● Potential for collaboration</li> <li>● Any other feedback will be considered</li> </ul>

## Tactics and Timing

Tactic	Timing
<p><b>Inform audiences</b> that the draft <i>Clean Air Plan</i> is published, purpose and benefits, and options for providing comments.</p> <ul style="list-style-type: none"> <li>● Publish an engaging web resource to house: <ul style="list-style-type: none"> <li>○ Draft <i>Clean Air Plan</i></li> <li>○ Plain language summary of the draft Plan</li> <li>○ Highlight purpose and benefits</li> <li>○ Highlight major actions</li> <li>○ &lt;5 minute engaging introductory video</li> <li>○ Options for providing comment</li> </ul> </li> <li>● Correspondence to stakeholder audience to include: <ul style="list-style-type: none"> <li>○ Link to web resource</li> <li>○ Link to introductory video</li> <li>○ Invitation to join a public or sector specific virtual forum</li> <li>○ Invitation for a meeting with staff</li> <li>○ Request and options for providing feedback</li> <li>○ Specific mail out to agricultural audience based on previous engagement</li> </ul> </li> <li>● Promote information to broader audience via: <ul style="list-style-type: none"> <li>○ Social media</li> <li>○ Newsletters</li> <li>○ Request member outreach to residents</li> <li>○ Paid advertising (radio, online community papers)</li> </ul> </li> </ul>	<p>First week of April</p>

<b>Answer questions and clarify information</b> <ul style="list-style-type: none"> <li>• Host four webinars to walk through the draft <i>Clean Air Plan</i> and answer any questions <ul style="list-style-type: none"> <li>○ 1 public, focus on purpose and benefits</li> <li>○ 1 industry focused</li> <li>○ 1 buildings focused</li> <li>○ 1 transportation focused</li> </ul> </li> <li>• Offer to meet (virtually) with <ul style="list-style-type: none"> <li>○ other governments</li> <li>○ specific sectors and organizations</li> <li>○ other relevant audiences</li> </ul> </li> <li>• Respond to email queries to project email and moderate social media</li> </ul>	Virtual forums – last week of April / first week May  Virtual meetings – schedule as requested  Respond to queries and moderate social media – ongoing
<b>Ensure specific sectors and organizations are aware, have the opportunity to speak with staff, and are requested to provide feedback</b> <ul style="list-style-type: none"> <li>• Phone or email direct offers to have a virtual meeting and conversation with audiences the project team deems essential to hear from (e.g. implementation, collaboration, alignment, higher impact etc.)</li> </ul>	Late April through mid-May
<b>Compile feedback</b> <ul style="list-style-type: none"> <li>• Collect and review feedback</li> <li>• Create a table that can be filtered for theme and audience</li> </ul>	Start late May through early June
<b>Analyze/ incorporate into draft <i>Clean Air Plan</i></b>	Early June
<b>Final <i>Clean Air Plan</i> to MVRD Board</b> <ul style="list-style-type: none"> <li>• Include summary of engagement and feedback and how feedback was applied</li> </ul>	July

---

To: Climate Action Committee

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

Date: February 10, 2021 Meeting Date: March 3, 2021

Subject: **Draft *Climate 2050 Buildings Roadmap***

---

**RECOMMENDATION**

That the MVRD Board authorize staff to proceed with engagement on the draft *Climate 2050 Buildings Roadmap*, as presented in the report dated February 10, 2021, titled “Draft *Climate 2050 Buildings Roadmap*”.

---

**EXECUTIVE SUMMARY**

This report presents the draft *Climate 2050 Buildings Roadmap*, the first in a series of ten *Climate 2050 Roadmaps* that will guide our region’s policies and collective actions to transition to a carbon neutral, resilient region by 2050. The draft *Buildings Roadmap* lays out strategies and actions that will accelerate the transition to a zero emissions and resilient building stock by 2050. Preliminary modelling results estimate that completing these aggressive but achievable actions will have a significant impact on greenhouse gas emissions, but over time, more work will need to be done to identify and undertake additional actions in order to reach our 2030 and 2050 climate targets. Future work will include establishing methods and key data sources to quantify the impact of the resiliency actions in the *Buildings Roadmap*. The draft will inform further engagement, with the intention to bring an updated *Buildings Roadmap* for endorsement by the MVRD Board in Fall 2021.

**PURPOSE**

To seek MVRD Board authorization to proceed with engagement on the draft *Climate 2050 Buildings Roadmap*.

**BACKGROUND**

On September 28, 2018, the MVRD Board adopted the *Climate 2050 Strategic Framework* and directed staff to begin the development process of the *Climate 2050 Roadmaps*. On October 4, 2019, the MVRD Board authorized staff to begin an integrated engagement process for *Climate 2050* and the *Clean Air Plan*, using a series of issue area discussion papers related to the roadmaps. This report responds to the above direction, and provides information on activities planned through the end of 2021. On January 15, 2021, the Climate Action Committee endorsed its 2021 work plan that directed staff to present the *Buildings Roadmap* for Board approval.

This report presents the draft *Climate 2050 Buildings Roadmap* (Attached), which will be the subject of engagement activities with the public, stakeholders and other governments, including First Nations, on greenhouse gas reduction and climate resiliency in the regional building stock.

## CLIMATE 2050 STRATEGIC FRAMEWORK

*Climate 2050* is an overarching long-term strategy that will guide our region's policies and collective actions to transition to a carbon neutral and resilient region over the next 30 years. Metro Vancouver is implementing *Climate 2050* through ten issue area Roadmaps, which will describe long-term goals, targets, strategies and actions to reduce regional greenhouse gases and ensure that this region is resilient to climate change impacts. Implementation of the Roadmaps will be driven by Metro Vancouver's management plans and other policies, including the *Clean Air Plan* (Report 5.1 in this agenda) as well as forthcoming updates to the regional growth strategy, liquid waste management plan and solid waste management plan.

## CLIMATE 2050 BUILDINGS ROADMAP

The *Climate 2050 Buildings Roadmap* presents a robust plan for this region to have a zero emissions and resilient building stock by 2050. In laying out the pathway, the *Buildings Roadmap* discusses the following issues:

- **challenges** to reaching zero emissions and resilient buildings, including goals and targets for greenhouse gas emissions reductions and climate resiliency for new and existing buildings by 2030 and 2050;
- **key sources** of greenhouse gas emissions from buildings and the expected impacts to buildings and occupants from a changing climate;
- **barriers** and **opportunities** to reduce emissions and increase resiliency that shape the strategies and actions in the Roadmap; and,
- **benefits** of zero emissions heating/cooling and taking an integrated approach to zero emissions and resilient buildings.

The *Buildings Roadmap* lays out 37 actions for reducing emissions and increasing resiliency, organized under the following 7 strategic areas:

1. Signal the Transition to Zero Emission Buildings through Requirements and Standards
2. Accelerate Demand for Zero Emission Buildings through Research, Education and Incentives
3. Shift to Zero Carbon District Energy Systems
4. Accelerate the Transition to Lower Embodied Emissions in Buildings
5. Support water conservation and non-potable water reuse to increase resilience to shifting precipitation patterns
6. Support the uptake of building design and retrofit solutions to reduce the impact of heatwaves and wildfires
7. Encourage the uptake of design and retrofit solutions that increase resilience to severe storms and flooding in buildings

The *Buildings Roadmap* proposes an implementation timeline to encourage swift early action on key issues. Given the short timelines and ambitious targets, staff have continued to work with all levels of government and other partners to take action while planning and developing the *Buildings Roadmap*.

The goals, strategies and actions in the draft *Buildings Roadmap* incorporate public and stakeholder feedback, previously summarized in a report on engagement for the Clean Air Plan and Climate 2050 roadmaps received by the Climate Action Committee on November 13, 2020.

Staff are currently working to further integrate equity considerations into the *Buildings Roadmap*. Staff intend to carry out additional work with partners to conduct an equity review before presenting the *Buildings Roadmap* for Board endorsement.

Prior to proceeding with engagement, the draft *Climate 2050 Buildings Roadmap* will be formatted to match the look and feel of other *Climate 2050* documents.

### **Potential impact on greenhouse gas emissions**

Initial modelling of key actions in the draft *Buildings Roadmap*, as described in the staff presentation on “*Carbon Neutral Modelling to Support Clean Air Plan/Climate 2050*” received by the Climate Action Committee on November 13, 2020, indicates that greenhouse gas emissions from the building sector could be reduced by 15% below the 2010 regional total by 2030, and 80% by 2050. These potential emission reductions reflect aggressive but achievable actions, but do not alone achieve the 2030 or 2050 targets to reduce regional greenhouse gas emissions from this sector.

As discussed in the *Climate 2050 Strategic Framework*, all roadmaps, including the *Buildings Roadmap* are intended to serve as “living, breathing” documents that chart the path to achievement of the region’s climate action goals and targets. It is expected that the strategic areas and actions will be updated dynamically, responding to changes in policy, technology, science, opportunities and innovations, and performance measurement and indicators. In the coming years, staff will continue to work with residents, businesses and governments to further accelerate these actions. Additional actions to accelerate the transition to resilient, zero emission buildings will be identified.

### **Relationship between the *Buildings Roadmap* and *Clean Air Plan***

The *Clean Air Plan* will be Metro Vancouver’s air quality and greenhouse gas management plan, building on the 2011 *Integrated Air Quality and Greenhouse Gas Management Plan*. The *Clean Air Plan* supports *Climate 2050*’s vision of a carbon neutral region by identifying the initial actions needed to meet the region’s 2030 greenhouse gas target – a 45% reduction in greenhouse gas emissions from 2010 levels by 2030. Greenhouse gas reduction actions in the *Buildings Roadmap* will also be included in the *Clean Air Plan*, which is the subject of Report 5.1 in the March 2021 Climate Action Committee agenda package.

### **ENGAGEMENT PROCESS**

Metro Vancouver is committed to engaging with the public, stakeholders and other governments, including First Nations, that could be impacted by the *Climate 2050 Buildings Roadmap*, and will incorporate feedback into the final roadmap.

The engagement will be conducted in accordance with the Board Policy on Public Engagement and will build on the work completed to date to develop the draft *Buildings Roadmap*. Many of the GHG reduction actions in the *Buildings Roadmap* parallel the *Clean Air Plan* and will be brought forward through the *Clean Air Plan* engagement and adoption processes. The resiliency content in the roadmap is planned to be brought forward for public input in fall 2021, along with the resiliency actions in the upcoming draft *Industry and Transportation Roadmaps*.

The engagement is designed to reach a broad audience with the purpose and benefits of zero emissions and resilient buildings, and also to seek out feedback from specific sectors and organizations, where this feedback might include for example; support, concerns about

implementation or impacts, and ideas for innovation and collaboration. Due to public health regulations, engagement is expected to be conducted through virtual means, and staff are planning creative and engaging materials to encourage feedback. This feedback will be reported to the Committee, highlighting how it informed the updated draft *Buildings Roadmaps*.

## **ALTERNATIVES**

- 1) That the MVRD Board authorize staff to proceed with engagement on the draft *Climate 2050 Buildings Roadmap*, as presented in the report dated February 10, 2021, titled “Draft *Climate 2050 Buildings Roadmap*”.
- 2) That the MVRD Board receive for information the report dated February 10, 2021, titled “Draft *Climate 2050 Buildings Roadmap*”, and provide alternate direction to staff.

## **FINANCIAL IMPLICATIONS**

Under Alternative 1, the overall resources required to develop and engage on *Climate 2050 Roadmaps* have been approved in program budgets for 2021, including staff time and consulting expenditures. Funding for enhanced engagement on *Climate 2050* has been requested from the Sustainability Innovation Fund, and at time of writing, awaits MVRD Board approval. Continued alignment of engagement activities and deliverables for the *Climate 2050 Roadmaps* with the development of the *Clean Air Plan* is intended to make the best use of resources available, as well as minimize time commitments for interested parties providing feedback.

## **CONCLUSION**

Metro Vancouver’s draft *Buildings Roadmap* lays out strategies and actions to transition to a zero emissions and resilient building stock by 2050.

If endorsed by the Board, Metro Vancouver intends to seek feedback on the draft *Buildings Roadmap* from the public, stakeholders and other governments, including First Nations. This engagement will be undertaken in coordination with engagement on the draft *Clean Air Plan*.

Staff recommend Alternative 1, for the Board to endorse the draft *Climate 2050 Buildings Roadmap* for the purposes of public engagement, and authorize staff to proceed with the public engagement process. Engagement is intended to provide sufficient opportunity to interested parties to learn about the draft strategies and actions in the *Buildings Roadmap* and provide feedback. Feedback from engagement will inform the development of a final *Buildings Roadmap* for Committee and Board consideration, scheduled for the fourth quarter of 2021.

## **Attachment**

*Climate 2050 Buildings Roadmap*, draft dated February 10, 2021 (44037101)

43843056



Brock Commons, University of British Columbia. Photo courtesy of [www.naturallywood.com](http://www.naturallywood.com)

## Climate 2050 Roadmap

# Buildings

A Pathway to Zero Emissions and Resilient Buildings

March 2021



**Metro Vancouver** is a federation of 21 municipalities, one Electoral Area and one Treaty First Nation that collaboratively plans for and delivers regional-scale services. Its core services are drinking water, wastewater treatment and solid waste management. Metro Vancouver also regulates air quality, plans for urban growth, manages a regional parks system and provides affordable housing. The regional district is governed by a Board of Directors of elected officials from each local authority.

Metro Vancouver's Member Municipalities and Population



## **We heard you loud and clear.**

This Roadmap was drafted in the winter of 2020-21, based on feedback received from a broad range of individuals, organizations and stakeholder groups between 2019 and 2020. Engagement was centred around the Metro Vancouver *Buildings Discussion Paper* to support *Climate 2050*, introduced for public and stakeholder comment in late 2019, just as BC began its response to the COVID-19 pandemic.

Public feedback is valued and project teams will continue to seek input on this draft Roadmap through the spring and summer of 2021. We will create online feedback opportunities, and will continue to ensure feedback is reflected as we move forward with implementing these actions. Documents, feedback forms, and direct email links to the project team are all posted to the Metro Vancouver website, [metrovanancouver.org](https://metrovanancouver.org), search “Climate 2050 Buildings Roadmap”.

COVID-19 has had an impact on our traditional engagement methods. Metro Vancouver assesses work plans on a case by case basis to determine if the COVID-19 pandemic response requires an adjustment to any work plans, including engagement components. For climate change programs and initiatives, this means continuing with work plans that protect human health and the environment, but adjusting how we approach engagement.

Goals and targets in Metro Vancouver’s climate-related plans are science-based and remain a priority. The interim target of a 45% reduction in greenhouse gas emissions below 2010 levels by 2030 has a time horizon of less than ten years. Pursuing a carbon neutral region by 2050 requires taking bold action now. Across the globe, the pandemic response has had an unexpected benefit of significant environmental improvements in terms of greenhouse gas emissions. This provides a glimpse of what is possible and what we can achieve with coordinated efforts and common goals in a time of crisis.

## The Roadmap at a Glance

Buildings are where we spend most of our lives. They provide us shelter, places to play, create, congregate, and so much more. They are also contributing to climate change. One quarter of all greenhouse gas emissions in the region comes from burning natural gas to heat our homes and buildings.

Buildings also last a long time. Decisions that we made a century ago about design and construction are affecting our greenhouse gas emission levels today. Similarly, the decisions we make today will determine the amount of emissions they create well beyond 2050.

The Climate 2050 Buildings Roadmap is about ambitious and necessary change in our buildings. It lays out seven key strategies and 37 actions that will reduce our greenhouse gas emissions and increase the resiliency of our new and existing buildings, in pursuit of a carbon neutral and resilient building stock by 2050.

The seven Strategies are:

1. Signal the Transition to Zero Emission Buildings through Requirements and Standards
2. Accelerate Demand for Zero Emission Buildings through Research, Education and Incentives
3. Shift to Zero Carbon District Energy Systems
4. Accelerate the Transition to Lower Embodied Emissions in Buildings
5. Support water conservation and non-potable water reuse to increase resilience to shifting precipitation patterns
6. Support the uptake of building design and retrofit solutions to reduce the impact of heatwaves and wildfires
7. Encourage the uptake of design and retrofit solutions that increase resilience to severe storms and flooding in buildings

To achieve a carbon neutral building stock in this region, we are going to have to make some difficult decisions and investments today, or risk passing them on to our children and grandchildren at higher cost and consequence.

We are not alone in this challenge. All over the world, cities are starting to make big decisions that will transition buildings to be more efficient, and to use clean and renewable energy. Here in our region, zero emissions buildings are possible today. Many of Metro Vancouver's member municipalities have committed to ambitious targets and bold leadership to respond to the global climate crisis. This plan responds to the challenge to come together, think big, and act now.

# Table of Contents

Visioning Zero Emissions and Resilient Buildings in 2050.....	6
The Challenge.....	6
Goals .....	7
Climate Impacts on Buildings.....	8
Emissions from Buildings in Metro Vancouver .....	10
Zero Emissions, Resilient Buildings .....	12
Healthy Buildings .....	15
Taking a Whole Building Approach .....	16
Zero Emissions Heating and Cooling.....	17
Barriers and Opportunities .....	18
The Journey to Zero Emissions, Resilient Buildings .....	22
Zero Emissions Buildings Strategies.....	22
Resilient Buildings Strategies .....	29
Setting the Path Ahead .....	31
Measuring our Progress.....	32
Feedback and Engagement Process.....	35
Glossary.....	36

# Climate 2050 Buildings Roadmap

A pathway to zero emissions, resilient buildings in Metro Vancouver

## Visioning Zero Emissions and Resilient Buildings in 2050

Our vision is that in 2050, Metro Vancouver residents live in resilient, healthy, zero emissions buildings across the region. Many buildings use so little energy that most of it can be generated on site, and some buildings even send unused energy back to the grid. Cities each retain their unique cultural, geographic and economic qualities, but are similarly compact in their development, with accessible and thriving local services. Buildings are healthy, comfortable and smart – allowing building occupants to easily control and automate equipment and appliances.

In response to climate change, flood protection, increased shading, air filtration and cooling have become a standard in nearly every building, and all public buildings are places for anyone seeking clean and cool air. Our region is known globally as a leader in zero emission and resilient buildings, and we are supported by a thriving circular economy and highly trained green buildings workforce.

## The Challenge

This Roadmap is about ambitious and necessary change in our built environment. It presents a robust plan for this region to have a clean and sustainably powered building stock by 2050.

Buildings contribute approximately 25% of the greenhouse gas emissions in the region, mostly through burning natural gas for space and water heating. Buildings also last a long time – decisions that we made 100 years ago about the design, construction and retrofit of buildings are affecting our greenhouse gas emission levels today. Similarly, the decisions we make today will determine the amount of emissions they create well beyond 2050.

### **Call out Box: What is a Carbon Neutral Region?**

A carbon neutral region means that we have achieved the deepest greenhouse gas emissions reductions possible across all economic sectors, and any emissions left are balanced out by the carbon dioxide removed from the atmosphere by the plants, trees, and soil in the region, as well as by potential carbon capture technologies that are under development.

A carbon neutral region is the best option for future generations to maintain a good quality of life, beyond 2050. We have to make some difficult decisions and investments today or pass them on to our children and grandchildren at higher cost and consequence. Metro Vancouver and many of its member municipalities have committed to ambitious targets and bold leadership to respond to the climate crisis. This plan responds to the global challenge to come together, think big, and act now.

## Goals

Metro Vancouver's *Climate 2050 Strategic Framework* has set the following targets to respond to climate change:

- Infrastructure, ecosystems, and communities are resilient to the impacts of climate change
- Target a 45% reduction in emissions from 2010 levels, by 2030
- Carbon neutral region by 2050

Meeting these goals means setting similar goals in each of the Climate 2050 Roadmaps, in order to ensure that each sector in the region plays as strong a role as possible in getting to carbon neutral.

Metro Vancouver has set the following goals for all buildings in this region, out to 2030 and 2050.

### **Goal – Zero Emissions Buildings**

All buildings are zero emissions from heating and cooling by 2050.

#### **Targets**

By 2030:

- A 35% reduction in greenhouse gas emissions from buildings, relative to 2010 levels.
- All new buildings are zero emissions in their operations.
- All new buildings produce 40% less embodied emissions from construction.

By 2050:

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

### **Goal – Resilient Buildings**

Residents are protected by buildings that are resilient to high temperatures, harmful air quality, severe storms and flooding by 2050.

#### **Targets**

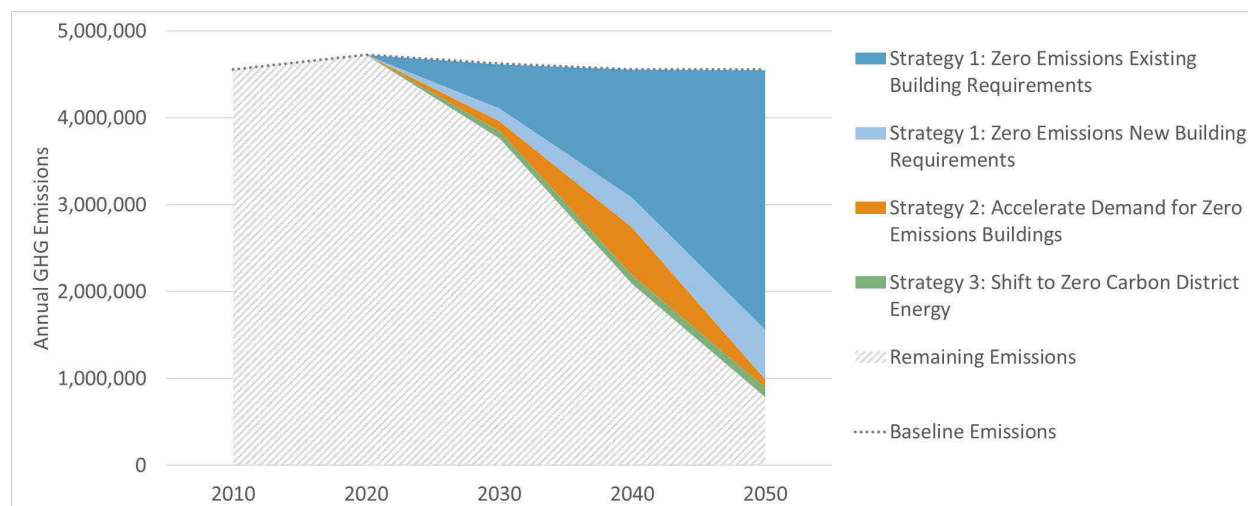
By 2030:

- All new buildings utilize world-leading water conservation methods.
- Metro Vancouver's most vulnerable residents in the region have access to buildings with cooling and clean air during extreme heat and wildfire events.
- All new buildings include cooling and air filtration adequate to protect against extreme heat and harmful outdoor air quality events.
- All new buildings are constructed to be resilient to riverine, coastal and urban flooding, and extreme storms.

By 2050:

- All Metro Vancouver's residents have access to buildings that:
  - protect against extreme heat and harmful outdoor air quality events,
  - are resilient to riverine, coastal and urban flooding, and extreme storms, and
  - utilize world-leading water conservation methods.

The diagram below shows key strategies in this Roadmap that will significantly reduce GHGs and how, collectively, they will close the gap on a carbon neutral building stock.



Many of the actions identified in this Roadmap will need to be led by other levels of government (e.g., national, provincial, and local) and industry. Metro Vancouver has a long history of working with all levels of government towards common goals. Fortunately, many of the organizations needed to make this transition are already actively working toward similar goals, including: the Provincial Government and its CleanBC Plan; the Federal Government’s recently strengthened climate plan called *A Healthy Environment and a Healthy Economy*; Metro Vancouver’s member organization’s own community and corporate climate plans; utilities; and, increasingly, industry associations.

#### Call out Box: The Connection between Climate and Air Quality

The *Clean Air Plan* is Metro Vancouver’s air quality and greenhouse gas management plan. Actions in the Plan will reduce air contaminant emissions and impacts, including greenhouse gases, in our region over the next 10 years, and in doing so support the interim target of a 45% reduction in greenhouse gas emissions by 2030, and establish the foundation for the 30-year goal of a carbon neutral region by 2050. This management plan also addresses air quality targets for the region.

Residents in the region generally experience good air quality. However, health researchers have demonstrated that there are no known safe levels for some air contaminants that are harmful to human health. Through burning fuels for heating and hot water, buildings generate 9% of all nitrogen oxides emissions in the region and 25% of fine particulate matter emissions, both of which are health-harming air contaminants.

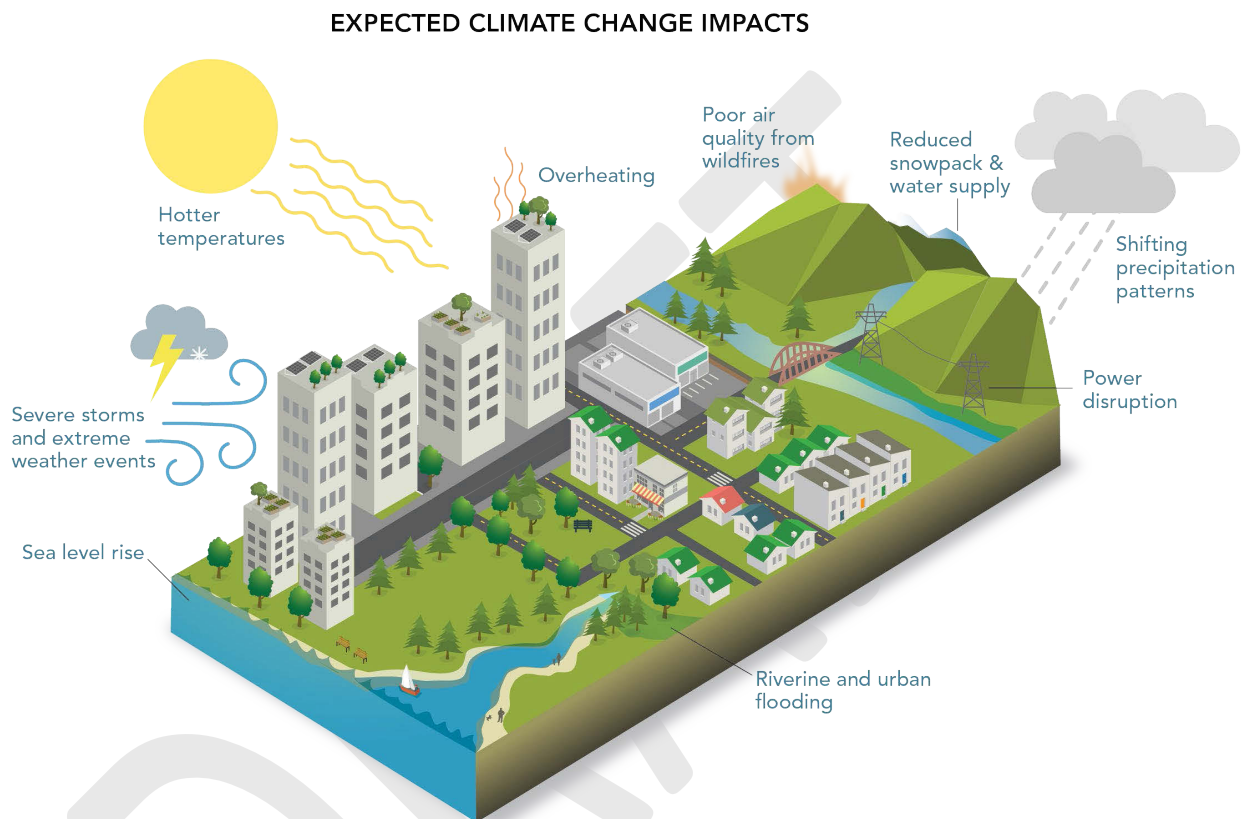
Actions in this Roadmap and the *Clean Air Plan* will help reduce all of these emissions to protect human health.

#### Climate Impacts on Buildings

Climate change, while less evident day-to-day, is already impacting our health and our environment, and those impacts will become more evident in coming years. We spend most of our time in buildings and the impacts of a changing climate will also change how well our buildings work for us – the need for cooling



in extreme heat, air filtration during wildfire smoke events, and water conservation and flood protection for droughts and severe storms. These impacts can harm some neighbourhoods, households and individuals more than others, and solutions must consider that some are better able to prepare for and protect themselves from climate change. Metro Vancouver's goal is that zero emission and resilient buildings be standard practice by 2050, both for new construction and major retrofits.



Based on climate projections to the 2050s we can expect the following changes and impacts:

### Climate Changes

- **Hotter temperatures** overall, with higher daytime and nighttime temperatures, and more hot summer days. This will lead to increased frequency and severity of heatwaves, wildfires and droughts.
- **Shifting precipitation patterns**, including more rainfall in every season except the summer, and less precipitation falling as snow.
- **Severe storms and extreme weather events**, including high winds and heavy rainfall.
- **Sea level rise**, with 0.5 metres expected by 2050, which will impact coastal communities in our region. While sea level rise is an important aspect of climate change with significant regional impacts, it is not directly addressed in this report because it is being addressed through other Metro Vancouver initiatives.



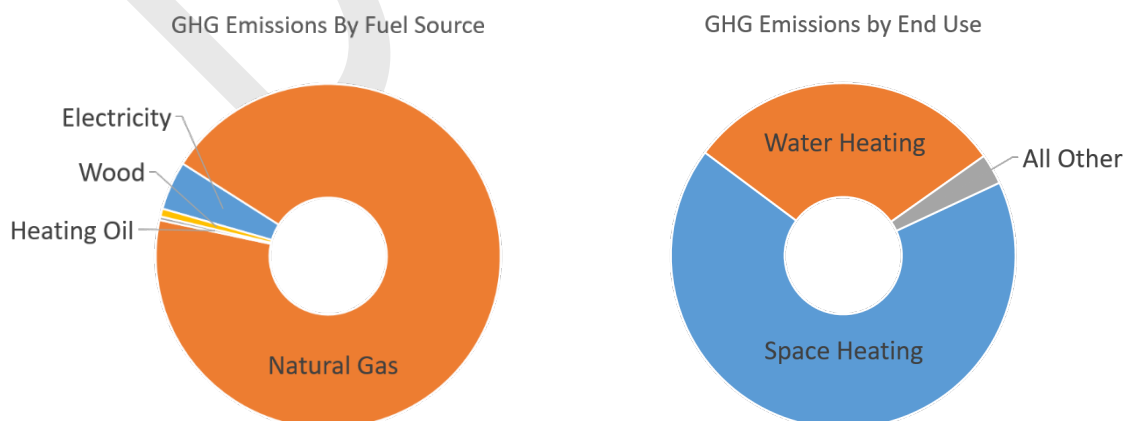
## Impacts Felt

- **Overheating** in buildings where cooling solutions do not exist or are inadequate. This poses particular risk to vulnerable populations and those without the means to cope. Reducing this risk requires a thoughtful combination of passive and mechanical cooling measures.
- **Dangerous indoor air quality** from wildfire smoke events, which can compound with existing sources of contamination (e.g., ground-level ozone, pollution from traffic and industry). Reducing this risk requires thoughtful ventilation and filtration design, and minimizing sources of pollutants wherever possible.
- **Reduced water supply as a result of** reduced snowpack and hotter, drier summers strain drinking water supplies during times of year when demand is the greatest. Reducing this risk requires policies and measures to manage demand, support water conservation and facilitate non-potable water reuse.
- **Riverine and urban flooding** from periods of extreme rainfall, which can cause immediate and long-term damage to buildings. This can be addressed through site selection, structural design decisions, strategic location of key mechanical systems, and careful materials selection.
- **Power disruption** due to overloaded grids from increased demand from cooling, and from shock events including flooding and storms. This can be addressed through demand management and the installation of low-carbon backup power solutions.

## Emissions from Buildings in Metro Vancouver

There are nearly 500,000 buildings throughout Metro Vancouver that collectively have more than 185 million square meters (2 billion square feet) of floor space.

Together, these buildings are the second largest source of greenhouse gas emissions in Metro Vancouver after transportation, emitting over 4 million tonnes per year, which is approximately 25% of the region's total annual emissions. Even with programs and incentives in place, greenhouse gas emissions from buildings have actually risen 10% since 2010 in Metro Vancouver. This increase is due in large part to the widespread and continued use of natural gas to heat space and water in many of our new and existing buildings. The graphic below shows that in our region, over 90% of the greenhouse gas emissions from buildings come from burning natural gas while close to 3% comes from out-of-region electricity generation, and on the right, that space and water heating are responsible for nearly all of the natural gas use in buildings.



Electricity is also commonly used in certain building types for space and water heating. Hydro-produced electricity also produces some GHGs, but one unit of natural gas produces at least 16 times more GHGs than one unit of electricity, as shown below.



BC Hydro Electricity  
3 kg of GHGs/GJ



Natural Gas  
50 kg of GHGs/GJ

Given the above information, it is clear that to achieve our target of zero emissions buildings, we need to shift away from the use of natural gas in favour of clean and renewable energy for space and water heating in existing buildings.

For new construction, zero emissions space and water heating systems are available for nearly every type of home and building. It is also much more straightforward to design a new building to be zero emissions than it is to retrofit an existing one. New construction needs to move swiftly towards zero emissions space and water heating systems – for example, high-efficiency electric heat pumps. This will avoid yet more costly retrofits to get to zero emissions.

For existing buildings, technologies are also widely available to electrify most buildings that use natural gas for space and water heating. The transition for existing buildings will be more gradual primarily because space and water heating equipment is only replaced every 10 to 20 years, and even less frequently for large commercial, residential, and public sector buildings. This equipment lifetime makes it critical to ensure the right equipment goes in at the next opportunity.

## Zero Emissions, Resilient Buildings

Zero emissions resilience involves considering and balancing, wherever possible, the three necessary sides of climate change action:

- 1) **Reducing** greenhouse gas emissions that are accelerating climate change,
- 2) **Increasing resilience** and our ability to recover by preparing for, and responding to the effects of climate change that we cannot avoid, and
- 3) **Protecting the health** of the occupants of buildings.

A “zero emissions and resilient building” is a building that emits no greenhouse gas emissions and better withstands the negative effects of a changing climate, ensuring occupant comfort and health are maintained.

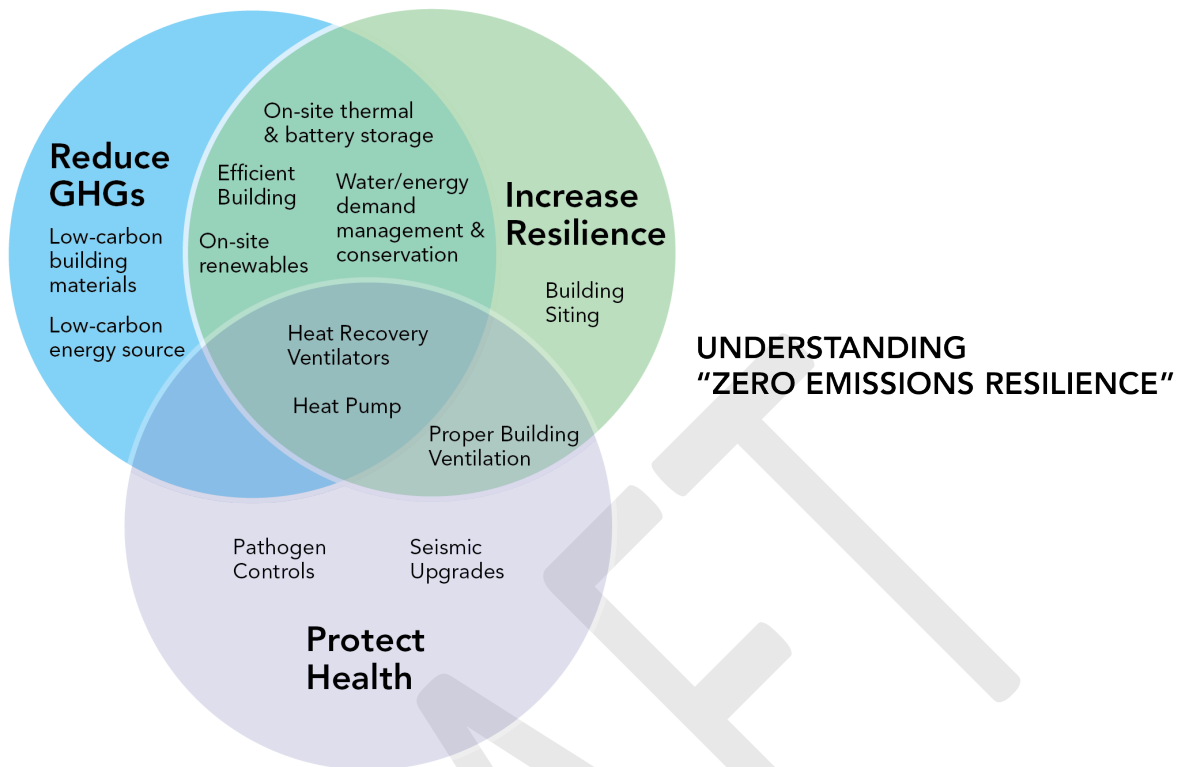
Looking to 2050, this Roadmap seeks to achieve a zero emissions and resilient building stock. By applying these desired outcomes simultaneously at the building and site level, we can identify ways to reduce emissions and vulnerability to climate change impacts at the same time.

### **Call out Box: What is the difference between “Zero Carbon”, “Zero Emissions” and “Embodied Emissions”?**

**“Zero Carbon” or “Zero Carbon Emissions”** refers to no greenhouse gas emissions at the point of use. A zero carbon fuel source either produces no greenhouse gas emissions, or any greenhouse gas emissions produced are offset by renewable energy (either generated onsite or purchased).

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

**“Embodied Emissions”** are greenhouse gas emissions associated with the construction of goods and products, including the raw materials and the transport of the good or product to where it is sold. Metro Vancouver is working to understand how embodied emissions – emissions from the construction and creation of materials for buildings – can be tracked to ensure we are reducing emissions beyond those created in our region.



The diagram above shows a number of different strategies for addressing greenhouse gas reductions and resilience. All of these strategies work together to provide both a carbon reduction and resilience benefit. The figure also shows which of these strategies contribute to direct health benefits for building occupants.

Applying a zero emissions resilience lens offers benefits, including:

- Identifying strategies that achieve emissions reductions and increased resiliency simultaneously (e.g., heat pumps can both reduce emissions and provide a source of mechanical cooling that improves thermal comfort for occupants, particularly during heatwaves);
- Avoiding conflicting strategies (e.g., adding backup diesel generators to a building can enhance resilience, but will also increase greenhouse gas emissions and contribute to poor air quality);
- Prioritizing building strategies that lead to zero emissions resilience aligns climate action goals with public health and safety objectives.

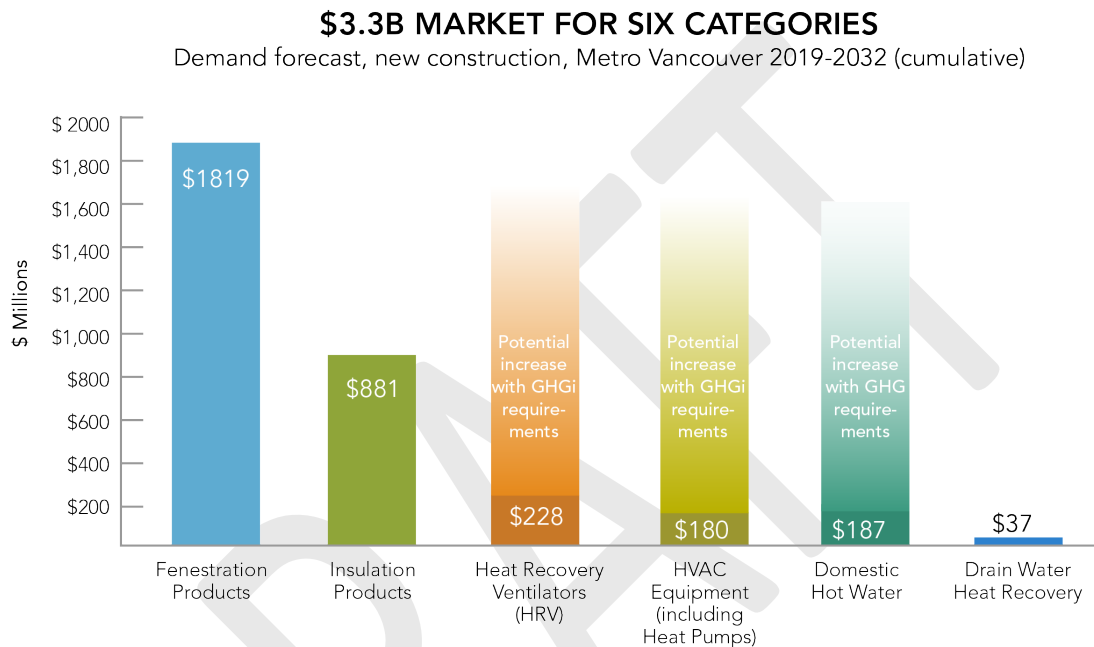
Many opportunities to achieve a building stock that is both zero emissions and resilient exist today and all organizations should seek these multiple benefits.

#### Economic Benefits of Zero Emissions Buildings

Recent studies show the broader economic benefit of improving building efficiency and reducing greenhouse gas emissions:

- The proposed BC Retrofit Code, which will require energy saving retrofits during renovations, is estimated to lead to the creation of more than 4,400 direct jobs and nearly 6,000 indirect jobs between 2019 and 2039 and contribute over \$8.3 billion to the province's GDP. See the "Barriers and Opportunities to get to Zero Emissions Buildings" section to learn more about the BC Retrofit Code.

- The Vancouver Economic Commission estimates that the BC Energy Step Code could help unlock a \$3.3 billion market for high-performance windows, insulation, and equipment in Metro Vancouver by 2032, as shown in the chart below. High-efficiency mechanical equipment alone could support 770 local jobs on an annual basis from 2019-2032 and increase further if stricter greenhouse gas emissions requirements are put in place.
- Building electrification across the entire State of California is estimated to lead to an average of 64,200 to 104,000 new jobs annually by 2045 after accounting for losses in the natural gas sector.



Source: Vancouver Economic Commission. Green Building Market Forecast: Demand for Building Products, Metro Vancouver, 2019-2032 (2019)

Economic benefits of accelerating building decarbonization must consider economic inequities. These might be costs, or access to training, employment, investment and innovation or others. Over time, factors such as increased supply, improved industry knowledge and capacity, and technology improvements should support equitable benefits.

### Social Equity

In some cases, shifting towards zero emissions and resilient buildings may cost some more than others, and we must ensure no one is left behind in this transition. Metro Vancouver will continue to incorporate the voices and needs of a full range of communities to ensure that fairness and equity are of the highest priority. Organizations responsible for building-related climate policies must consider whether inequity is created or magnified, and address these inequities to ensure a just transition.

Metro Vancouver will develop a strategic approach to assessing equity in our climate action. This will include community input, health impact assessments and other equity evaluation tools so that all residents benefit from these changes.

## Healthy Buildings

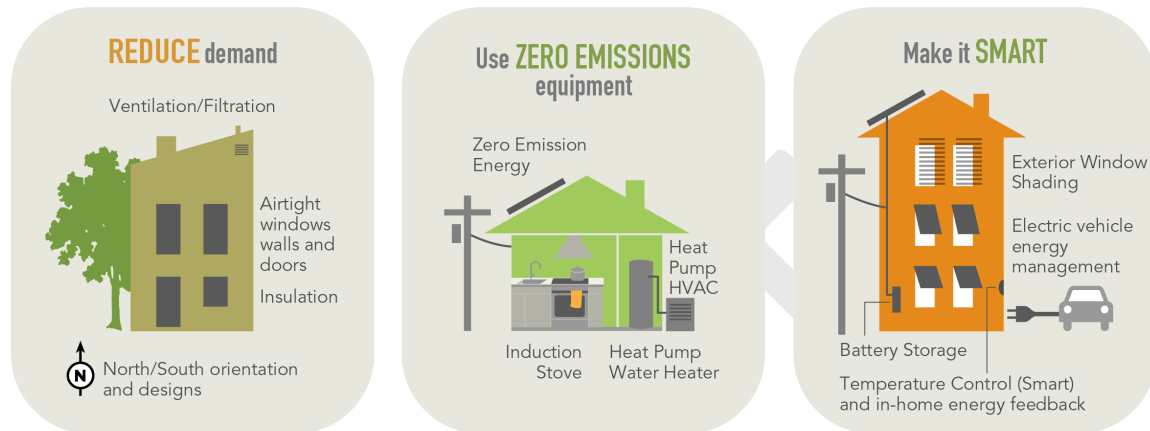
Health must be considered alongside emissions reductions and resiliency. Many of the ways that we make our buildings zero emissions and resilient are also the ways we make them healthier. Health outcomes will be a driving force behind how we craft our response.

We spend the majority of our lives indoors, so the quality of our buildings plays an ever greater role in our health and wellness. Fortunately, high-performance buildings can have a positive effect on the full spectrum of wellness, including our physical, mental, emotional and social health, including the following:

- **Thermal comfort:** Prolonged thermal discomfort can negatively impact physical health (e.g., overheating, heatstroke) and mental health for occupants. Ensuring that buildings remain comfortable in our warming climate requires analysis of future climate projections, and incorporation of passive and active cooling systems that meet future needs.
- **Air quality:** Indoor air quality plays a major role in health and wellbeing. Outdoor air pollution from wildfire smoke, traffic and other sources can enter buildings that have leaky envelopes. In new construction and retrofits, this can be limited by prioritizing an airtight envelope and ensuring that adequate ventilation and filtration systems are in place that promote energy efficiency as well as a healthy and safe indoor environment.
- **Acoustic comfort:** Better designed, insulated, and airtight buildings can reduce sound. Exposure to sounds such as traffic and mechanical systems can disrupt concentration and productivity, and has been linked to sleep disturbance and hypertension.

## Taking a Whole Building Approach

Taking a whole building approach to achieving zero emissions and resilient buildings means looking for opportunities to reduce how much energy a building needs to operate, and how to improve its overall resiliency to a changing climate. This is in addition to using clean and renewable energy sources.



### 1. Reduce Energy Demand

One of the first steps to pursuing zero emissions and resilient buildings is to look for opportunities to reduce how much energy the building needs for heating and cooling. Measures that improve the envelope (or shell) of the building to keep hot or cold air inside, such as weather sealing, improved insulation and windows, and heat recovery systems, will have a direct reduction in energy demand. Since electricity is more expensive than natural gas in BC, keeping the heat inside the building will make the switch to zero emissions electric heat pumps a better economic choice.

### 2. Use Zero Emissions Energy

With total energy demand reduced, the next important step is to select a heating system that uses low carbon or zero emissions energy. Although renewable fuel sources already exist (e.g., electricity and renewable gas), high-efficiency, all-electric buildings have a number of advantages. A building that uses BC's clean and renewable electricity for its space and water heating ensures long-term and deep greenhouse gas emissions reductions.

For buildings that will be harder to electrify, the same technologies used today for natural gas space and water heating can continue to be used over the next few years because renewable gas can be used to power this equipment without any modifications. It should therefore be considered as a transitional fuel on the path to achieving a zero emissions electric home or building.

Metro Vancouver is considering what role clean, renewable sources of energy will play in the region's transition to carbon neutral within the *Climate 2050 Energy Roadmap*.

### 3. Make It Smart

In BC, electrifying our buildings will likely increase the amount of electricity needed during peak heating periods and place additional pressure on provincial and local electricity grids. Some of this pressure can be alleviated by taking advantage of smart grid features and other in-home

technologies that automate some building systems to use less energy. For example, electric storage batteries located in buildings could be charged by on-site renewables or via the electricity grid during periods of low demand. This stored energy could then be used during times of high demand, making better use of the energy capacity that BC already has in place. Buildings with on-site energy storage and low energy demand will also be better equipped to withstand any short-term power losses that could result from major storm events.

Similarly, appliances and water heaters equipped with demand response technologies could provide BC Hydro with an opportunity to encourage the use of this equipment during off peak periods and to help ensure services such as space heating and cooling are prioritized during periods of unusually high demand.

Given the high cost of upgrading provincial and local electricity grids, measures such as these can go a long way to maintaining competitive electricity rates and overall resiliency while a market-wide shift to zero emissions buildings takes place.

### Zero Emissions Heating and Cooling

In most cases, installing high-efficiency electric heating and cooling equipment will be the quickest, most economical, and most permanent way to achieve a zero emissions building. Of the various categories of high-efficiency electric technologies already available, heat pumps carry the most promise for achieving significant emissions reductions in homes and buildings.

#### How do Heat Pumps Work?

Electric heat pumps provide both heating during the winter and cooling during the summer with the help of the air outside your home. A heat pump operates similarly to your refrigerator or air conditioner. In the winter, a heat pump extracts heat from the outside air (or ground, depending on the type) and brings it into your home. In the summer, it pulls heat from inside your home and moves it outside, effectively cooling the indoor space. By using refrigerants to help move the heat, heat pumps are by far the most energy efficient technology available for space heating and cooling and hot water heating. For every unit of energy it takes to run, a heat pump typically provides three to five units of heating or cooling, at temperatures above 0°C (in other words, they are 300-500% efficient). Low temperature heat pumps operate very well below 0°C, but efficiency gains get closer to conventional electric heating as temperatures drop. In contrast, an electric baseboard heater converts each unit of electrical energy into a single unit of heat energy (100% efficient), and a high performance natural gas furnace provides slightly less than a single unit of heat energy (about 95% efficient).

This very high efficiency means that electric heat pumps are not only a zero emissions solution for buildings, they also operate using less electricity while providing both heating and cooling to homes and other buildings.

In addition to being zero emissions, heat pumps provide air conditioning in the summer. This makes these buildings more resilient to the longer, hotter, drier summers that are predicted for the Metro Vancouver region as a result of climate change.

Heat pumps also help to filter indoor air, a feature that is especially important during wildfire smoke events that are becoming increasingly common during the summer months. During a wildfire smoke event it is also important that buildings remain cool and comfortable with the windows closed, because of the need to minimize the amount of unfiltered outdoor air that enters the building. Maintaining a comfortable indoor air temperature is easily achieved with a heat pump. Although a conventional air conditioning unit



could provide similar services, it is often more straightforward and economical to have a single system that can do both the heating and cooling for a building.

**Call out Box: Managing Refrigerants to Reduce Greenhouse Gas Emissions**

As heat pumps become more widely used in BC, it will be important to work with other government and industry partners to ensure that the refrigerants used in this equipment do not create unintended environmental harm. Many of the refrigerants permitted today have very high “global warming potential” – or GHG emissions equivalent. Releasing a single kilogram of these gases into the atmosphere can equal the impact of hundreds or thousands of kilograms of carbon dioxide, the most common greenhouse gas.

Fortunately, international efforts are underway to reduce the global warming potential of refrigerants, and the Government of Canada requires industry to participate in refrigerant management stewardship, but more needs to be done to further reduce releases of refrigerants from existing equipment. In the meantime, more and more models of heat pumps with low global warming potential refrigerants are becoming available.

**District Energy Systems**

Metro Vancouver is home to at least 18 different District Energy Systems. A District Energy System is a utility that provides heating services to buildings within a concentrated geographic area (e.g., university campus, hospital, downtown core, high-density neighbourhood). Pipes carry hot water or steam from a centralized heating plant to the system’s connected building network. Different renewable and non-renewable fuel sources are used by district energy systems, but the most common fuel used is natural gas. In order to achieve zero emissions for buildings connected to district energy system, all new and existing systems will need to convert to clean and renewable sources of energy such as electricity and waste heat, heat from data centres, air conditioning, and Metro Vancouver’s sewer pipes. Once converted, all of the buildings connected to the district energy system will minimize their own emissions and will benefit from the emissions reductions at the plant. These systems present unique opportunities to decarbonize clusters of buildings throughout the region.

**Barriers and Opportunities**

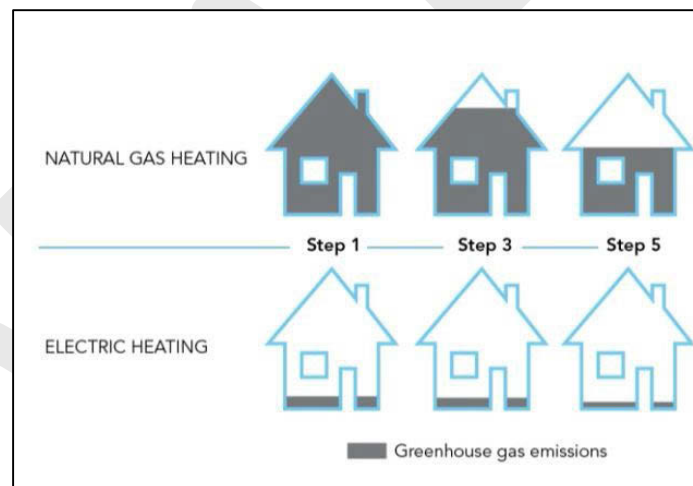
**New Construction**

For new construction, most of the technologies to make new residential and commercial buildings zero emissions are already commercially available. Modern, high-efficiency building techniques and technologies also mean far less energy is needed to meet a building’s space and water heating needs than in the past. Many of the region’s local governments have adopted the BC Energy Step Code and have signaled their intention to continue to increase energy performance requirements, but challenges remain in the new buildings sector, including the following:



The BC Energy Step Code allows local governments to set increasingly stringent energy efficiency requirements for new construction, leading to net-zero energy ready buildings by 2032. There is a big opportunity for the Step Code to include GHG limits in new buildings.

- **The Energy Step Code does not include GHG emission limits.** Local governments are not currently permitted to include GHG emissions limits that would restrict the use of fossil fuels in new buildings. As a result, many of the high-efficiency new homes built in the region are being built with natural gas heating systems that will emit higher levels of GHG emissions for the foreseeable future. As shown in the image below, even at Step 1, the lowest step, electric heating results in a more than 90% reduction in GHGs compared to natural gas heating, due to BC's clean, renewable hydroelectricity. The BC Government has signaled an intent to regulate the GHG performance of new buildings. Ensuring this happens is a critical step towards zero emissions buildings.



- **Embodied emissions aren't being measured.** Embodied emissions are currently a blind spot for the building industry. The greenhouse gas emissions generated from the production and installation of building materials can have a significant impact on the overall emissions of the building. Government and the building industry needs to better understand the impact that building material choice has on the embodied emissions of a building and work to reduce it.
- **Building knowledge and capacity in skilled trades.** As bold policies are introduced for zero emission buildings, the real pace of change will be set by the people who build them. Knowledge building and training through schools and trade associations will help to ensure that everyone working in the sector has the skills they need to confidently make every new building zero emissions.

## Existing Buildings

Although many of the solutions needed to convert existing buildings to zero emissions are readily available, the transition will be more gradual and challenging for existing buildings. Some of the main reasons for this are listed below:

- **Existing heating equipment is only replaced every 10 to 20 years.** One of the Building Roadmap's biggest logistical challenges is that the transition will require most existing natural gas space and/or water heating systems to be replaced with high-efficiency electric heat pumps. Most of these systems only get replaced once every 10 to 15 years for water heaters and 15 to 20 years for furnaces. Requiring these systems to be replaced more rapidly than this would place a financial burden on many building owners.
- **No limits on greenhouse gas emissions from buildings.** New buildings are constructed to the requirements in the Building Code, which locks in the greenhouse gas emissions and energy use of the building until it undergoes a major renovation. Other than the City of Vancouver, there are virtually no regulatory requirements in BC to encourage building owners to take action to reduce the greenhouse gas emissions in their building at the point of renovation.

**Call out Box: BC Retrofit Code.** As of 2021, the BC Government is considering a code for alterations to existing buildings that would include energy efficiency, earthquake safety, and occupant health and safety, to be introduced in 2024. This code would follow and harmonize with the introduction of a Government of Canada model code for retrofits in 2022. Existing buildings are a much larger source of greenhouse gas emissions than new buildings. Placing greenhouse gas limits on retrofits is a game-changing opportunity to transition to zero emissions buildings.

- **Complexity and cost impede decision-making.** For many home and building owners, the steps needed to reduce the greenhouse gas emissions from their building can be time consuming and overwhelming, and can dissuade them from switching to clean, renewable energy. These issues are compounded for older buildings where additional steps may need to be taken to improve their overall efficiency (such as improved insulation, air leak sealing, high-efficiency windows, heat recovery, or converting a steam heating system to a lower temperature one) before an electric heat pump can be effectively used.
- **Availability of clean, renewable energy.** Electrification is a key decarbonization strategy for buildings to meet emission reduction targets, and provides co-benefits such as reduced emissions, improved air quality, cooling in homes and increased energy efficiency. Electricity in BC is currently abundant, but as more buildings electrify, there may be capacity constraints for electrical supply that need to be resolved. For some existing heating systems that are harder to electrify quickly, such as district energy and high-temperature water or steam boilers, the most straightforward path to reduce greenhouse gas emissions, at least in the next few years, will be to use renewable natural gas. The main challenge will be to ensure that there is a sufficient supply of cost-competitive renewable natural gas if it is to be used as a strategy to decarbonize large portions of the building sector. The provincial CleanBC Plan has set a goal for renewable gas to make up 15% of the province's natural gas supply by 2030. It currently makes up less than 0.5% of FortisBC's total gas supply. A provincial study estimates that the short-term potential in the

province is less than 2% of the natural gas currently consumed in BC. Given the scale of the challenge to decarbonize buildings, every available clean, renewable form of energy will play an important role.

- **Costs of retrofitting to zero emissions.** Similar to the new construction sector, many zero emissions solutions are available for most building types, but the cost of providing these solutions can be considerably higher when compared to simply replacing one fossil fuel system with another. Costs can be higher in a building with high heating demand, which is often older buildings. Affordability is exacerbated in rented or leased spaces. In these cases, a key cost reduction measure is to retrofit the building to reduce heating demand before replacing the heating systems. For many buildings in the region, incentives to support both the capital cost of retrofits as well as the ongoing energy costs will need to be explored.

### **Low Awareness of the Benefits of Constructing and Renovating to Zero Emissions Standards**

Across new and existing buildings, there is a low level of awareness about the benefits of electrification and other low and zero emissions building options. For example, most people are not aware that natural gas is responsible for almost all of the greenhouse gas emissions that come from buildings. Nor are they aware of the climate, health and resiliency benefits associated with high-efficiency electric heat pumps. Often the zero emissions and resiliency solutions for any new or existing building are hidden inside and behind the walls. A huge opportunity exists to amplify the benefits and success stories of zero emissions buildings.

Each of the barriers that have been raised here are addressed within the strategies and actions in the next section of this Roadmap.

## The Journey to Zero Emissions, Resilient Buildings

**Call out Box:** Linkages to other Climate 2050 Roadmaps.

There are many linkages between buildings and other issue areas. You can find additional information on some topics in the following:

**Waste Roadmap** – additional consideration of embodied emissions, building materials as part of the circular economy, and final disposal of building materials.

**Land-use and Growth Management Roadmap** – ideas that shape the form and location of buildings in the region, which influences their emissions and resilience.

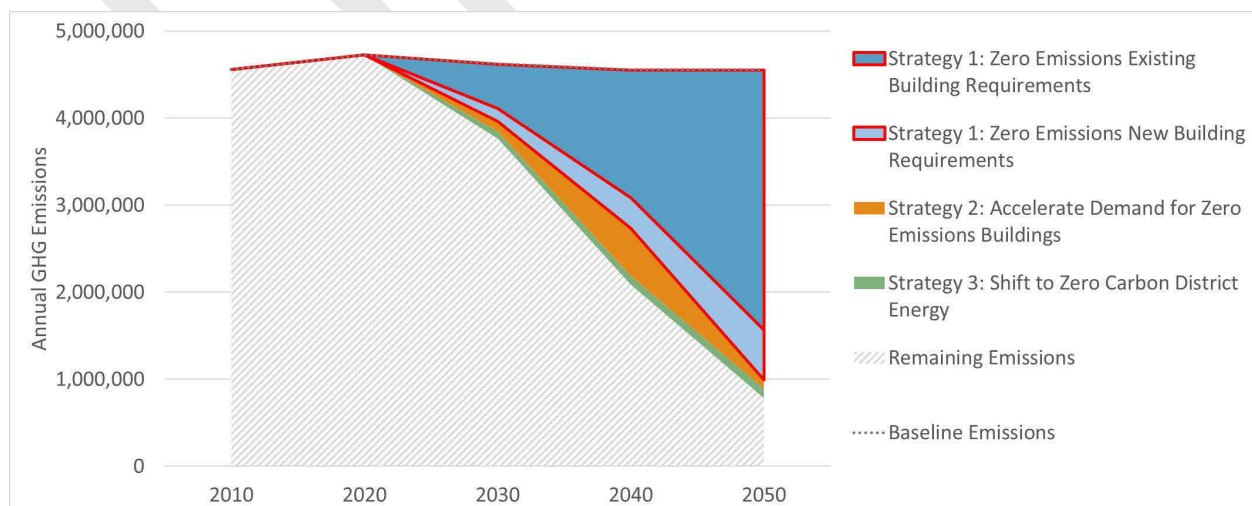
**Energy Roadmap** – availability of clean, renewable energy for use by buildings between now and 2050.

**Industry Roadmap** – emissions produced in the construction and demolition of buildings.

### Zero Emissions Buildings Strategies

#### Strategy 1: Signal the Transition to Zero Emission Buildings through Requirements and Standards.

Space and water heating using natural gas contributes about 25% of the greenhouse gas emissions in the region. To meet our targets we must send clear and early signals about future requirements for buildings. The BC Energy Step Code and upcoming Retrofit Code will improve the energy performance of new and renovated buildings, and both should require that most heating and cooling uses clean, renewable electricity. Equipment efficiency standards and the climate impacts of refrigerants must also be addressed, along with a clear mandate for BC Hydro to support electrification of buildings, will accelerate the transition to zero emissions buildings.



<p><i>Potential Impacts of Strategy</i></p> <p>Reduce annual greenhouse gases by up to 650,000 tonnes in 2030</p> <p>Reduce annual greenhouse gases by up to 3.5 million tonnes in 2050</p>	<p><i>Key Partners</i></p> <ul style="list-style-type: none"> <li>- Federal Government</li> <li>- BC Government</li> <li>- Member jurisdictions</li> <li>- BC Hydro</li> </ul>
---	--

- 1.1 **Greenhouse Gas Performance Requirements for Existing Large Buildings. (BIG MOVE)**  
Develop regulatory requirements for existing large buildings to meet greenhouse gas emission performance targets, which would reach zero carbon emissions before 2050. Requirements would apply to all existing large commercial and large residential buildings, and would include energy consumption benchmarking, reporting and performance requirements in coordination with BC Government regulatory requirements. These requirements would help to achieve Metro Vancouver's air quality objectives and align with emissions requirements for district energy systems. (see Strategy 2.4).
- 1.2 **Greenhouse Gas Performance Requirements for Existing Houses and Townhomes. (BIG MOVE)**  
Develop regulatory requirements for existing homes and townhomes to meet greenhouse gas emission performance targets, which would reach zero carbon emissions before 2050 in coordination with BC Government regulatory requirements. These requirements would help to achieve Metro Vancouver's air quality objectives.
- 1.3 **New Buildings Highly Efficient and Electric. (BIG MOVE)**  
Work with the BC Government to establish greenhouse gas performance requirements for new buildings, through the BC Energy Step Code or other legislation, reaching zero emissions by 2030. These requirements should allow local governments to voluntarily adopt zero emissions targets earlier. These requirements would apply to new homes, townhomes, and large commercial and residential buildings.
- 1.4 **Require Greenhouse Gas Reductions During Renovations. (BIG MOVE)**  
Advocate to the BC Government to establish the BC Retrofit Code with increasingly stringent greenhouse gas performance requirements for buildings undergoing significant renovations.
- 1.5 **Energy Labels for Homes and Buildings.**  
Work with the BC Government to develop requirements that every building and home in the Metro Vancouver region obtain an energy and greenhouse gas emissions label, and to require public disclosure of that label when a property is constructed or listed for sale, rental or lease. These labels provide information to accelerate the uptake of low carbon upgrades.
- 1.6 **Manage Indoor Air Quality in Building Codes.**  
Work with the BC Government, health authorities and member jurisdictions to ensure that indoor air quality impacts of air tight buildings are safely managed in future updates to building codes.
- 1.7 **High Performance Heating and Cooling Equipment Import and Sale Standards.**  
Advocate to the Government of Canada and the BC Government to establish energy efficiency standards for new and imported heating and cooling equipment that has a rated energy performance of 100% or more and minimum greenhouse gas requirements for refrigerants, by 2030. This would ensure that buildings are conserving energy while reducing emissions.

1.8 **Significantly Reduce Refrigerant Leaks in Building Equipment.**

Advocate to the BC Government to enhance compliance with the requirements of the *BC Ozone Depleting Substances and other Halocarbons Regulation*. This would likely involve enhanced outreach to help reduce refrigerant leaks and ensure effective refrigerant management in heating and cooling systems in buildings.

1.9 **Value Zero Emissions and Resilient Buildings in Lending Practices.**

Work with the BC Government and Government of Canada to establish guidelines for the valuation of low and zero emissions, resilient buildings. This would support lenders to provide competitive “Green Mortgages” and “Green Loans” for low carbon and resilient properties.

1.10 **Building Electrification Mandate for BC Hydro.**

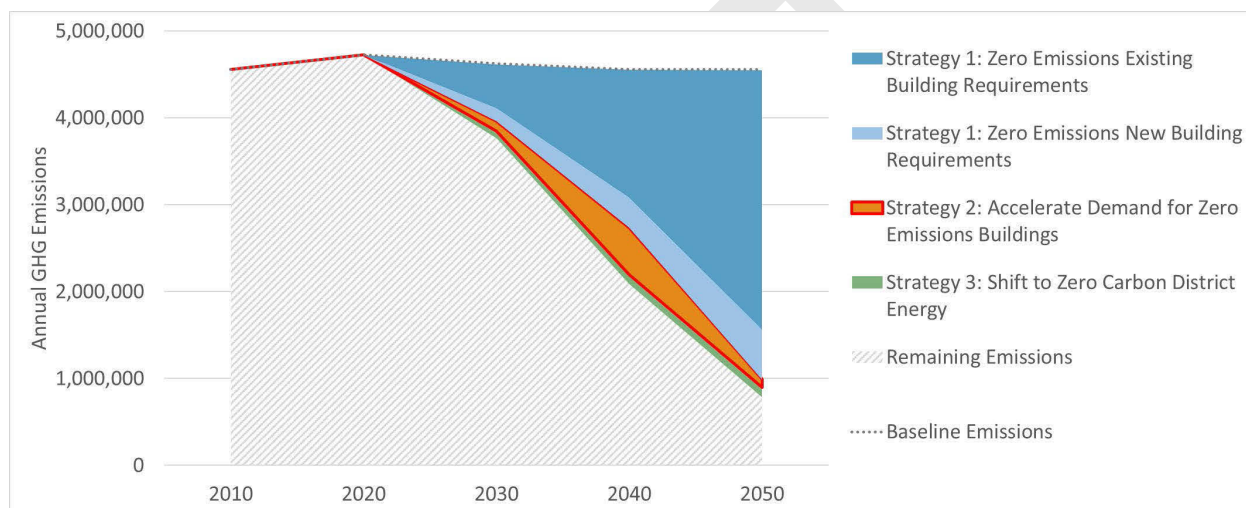
Advocate to the BC Government to direct BC Hydro and the BC Utilities Commission to promote and accelerate building electrification and to reduce emissions.

DRAFT



## Strategy 2: Accelerate Demand for Zero Emission Buildings through Research, Education and Incentives.

Many technologies, like heat pumps and heat recovery systems, exist today to electrify most buildings that currently use natural gas for heating. Current technical support programs and incentives help home and building owners to adopt these technologies, as well as to improve the energy performance of buildings. A regional Building Decarbonization Coalition will help significantly expand existing programs so more home and building owners can reduce their building emissions. These programs must work directly with community partners to identify the best ways to involve all communities in the region so everyone can benefit from zero emission buildings. Increased technical support and expanded incentives will underpin greenhouse gas requirements by supporting home and building owners to make informed decisions and reduce their emissions.



### Potential Impacts of Strategy

Reduce annual greenhouse gases by up to 110,000 tonnes by 2030

Reduce annual greenhouse gases by up to 90,000\* tonnes by 2050

*\*annual reductions in 2050 are lower because the effectiveness of Strategy 2 peaks around 2040 (up to 540,000 tonnes) as shown in the graph above.*

### Key Partners

- Federal Government
- BC Government
- Member jurisdictions
- BC Hydro

### 2.1 Building Decarbonization Coalition. (BIG MOVE)

Work with governments, energy utilities, construction industry, academia, non-governmental organizations and other regional partners to develop a Building Decarbonization Coalition. The Coalition would collaborate to address major barriers and create opportunities to accelerate the transition to zero emission homes and large buildings. The Coalition would also align its work with the regional working group focused on reducing embodied emissions in new and existing buildings (see Action 4.4).

### 2.2 Online Decision Support Tools for Low Carbon Upgrades. (BIG MOVE)

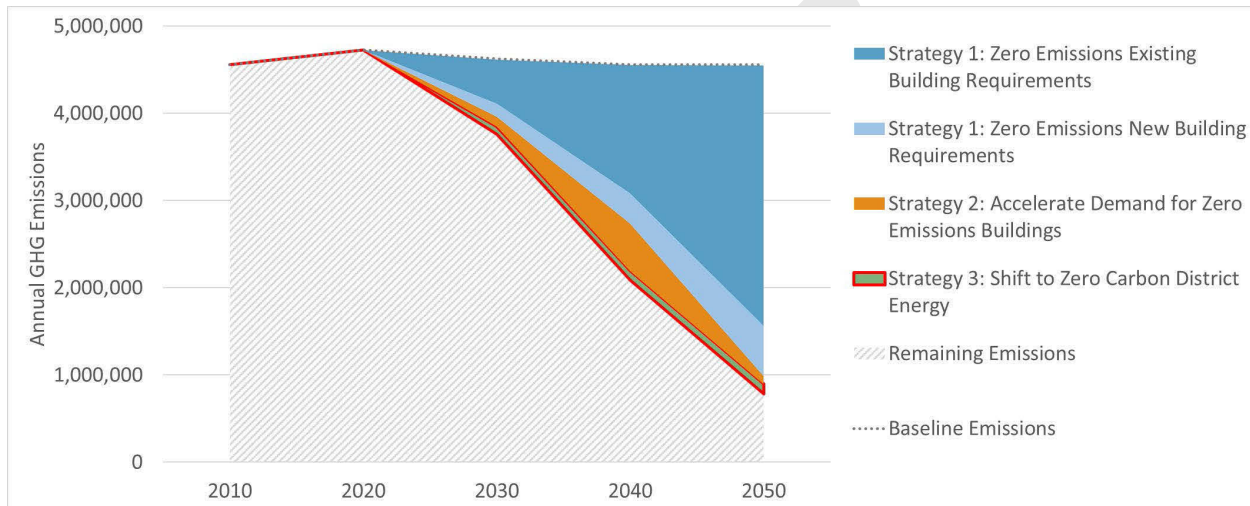
Work with the BC Government, Government of Canada and member jurisdictions to develop simple online tools that help home and large building owners choose low carbon solutions. Online support tools will be supported by energy advisor services (see action 2.3).



- 2.3 **Energy Advisor Services for Homes and Large Buildings. (BIG MOVE)**  
Work with the BC Government to expand energy advisor services for homes and large building owners. The expansion would help simplify the customer journey for home and building owners considering retrofits, so they can more easily access technical support and financial incentives.
- 2.4 **Expand Low Carbon Upgrade Incentives.**  
Advocate to the BC Government and Government of Canada to continue providing fuel-switching and energy efficiency incentives (including tax credits). The incentives should be expanded to support more whole building electrification solutions for older homes and buildings, including reducing the operating costs of fuel switching. Specific incentives should support rental and non-market housing building owners to conduct low carbon upgrades while avoiding increased evictions or significant cost increases for renters.
- 2.5 **New Financing Tools for Low Carbon Upgrades.**  
Work with member jurisdictions, BC Government, Government of Canada, energy utilities and other partners to develop strategic financing tools for home and building owners to accelerate low carbon building upgrades. These tools allow owners to spread the cost of a retrofit over a longer period, making the retrofits more affordable. Examples include Property Assessed Clean Energy (PACE) financing, on-bill financing and other related mechanisms. The tools should be available for homes, townhomes, and large commercial and residential buildings.
- 2.6 **Make Electricity Upgrades Faster and Cheaper.**  
Advocate to BC Hydro to work with member jurisdictions, trade associations and other regional partners to streamline electricity service upgrades, to reduce costs and installation timelines.
- 2.7 **Increase Public Awareness of the Benefits of Zero Emissions and Resilient Buildings.**  
Work with member jurisdictions, the BC Government, health authorities, and other partners to deliver awareness and educational programs that encourage home and building owners to choose zero emissions and resilient buildings solutions. These programs would highlight the health improvements achieved by reducing emissions of indoor air contaminants, the benefits of using qualified installers, permitting requirements for HVAC systems, and the consumer protections provided by municipal permitting processes.
- 2.8 **Training and Education in Zero Emissions and Resilient Buildings.**  
Work with industry stakeholders and other governments to ensure industry training and certification meets the growing market demand for zero emissions and resilient building design, technology, installation and operation.
- 2.9 **Share Lessons from Transitioning Metro Vancouver Corporate Buildings to Zero Emissions. (CORPORATE LEADERSHIP)**  
Publish case studies about low carbon upgrades completed at Metro Vancouver corporate buildings, including Metro Vancouver Housing buildings, to show the benefits and feasibility of electric and resilient buildings.
- 2.10 **Test New Zero Emission Building Technologies. (CORPORATE LEADERSHIP)**  
Test new zero emission building technologies in Metro Vancouver corporate buildings, including Metro Vancouver Housing buildings. These pilot projects would include the installation, use and monitoring of building technologies that are not yet widely used in the region.

### Strategy 3: Shift to Zero Carbon District Energy Systems.

District energy systems provide heating and cooling to a network of residential and commercial buildings more efficiently and generally with lower greenhouse gas emissions than individual building heating and cooling systems. There are currently 18 district energy systems in the region, running on natural gas, recovered heat and biomass, and more systems are under development. Developing a long-term emissions pathway to transition district energy systems to clean, renewable energy will set a path for entire district energy neighbourhoods to become zero emissions in the future.



#### Potential Impacts of Strategy

Reduce annual greenhouse gases by up to 80,000 tonnes by 2030  
Reduce annual greenhouse gases by up to 110,000 tonnes by 2050

#### Key Partners

- Member jurisdictions
- Energy utilities

#### 3.1 Emissions Requirements for District Energy Systems. (BIG MOVE)

Develop a regulatory pathway to achieve zero carbon district energy systems by 2050, working with member jurisdictions, BC Government and energy utilities. Regulatory design will also support Metro Vancouver's air quality objectives.

#### 3.2 Low Carbon District Energy Policies.

Work with member jurisdictions with district energy systems to assess the feasibility of using sewer heat and biogas generation from Metro Vancouver and its member municipalities.

### Strategy 4 Accelerate the Transition to Lower Embodied Emissions in Buildings.

Embodied emissions are the greenhouse gas emissions associated with resource extraction, manufacturing and distribution of buildings products. Using construction materials with lower embodied emissions will reduce global emissions of greenhouse gases. Local governments in the region are establishing requirements for embodied emissions of construction materials. Establishing a regional

embodied emissions working group, and setting requirements in the building code and for new public buildings, will help accelerate the transition to lower embodied emissions in buildings.

<p><i>Potential Impacts of Strategy</i></p> <p>To be developed as Strategy is implemented</p>	<p><i>Key Partners</i></p> <ul style="list-style-type: none"> <li>- Member jurisdictions</li> <li>- BC Government</li> <li>- Construction/Renovation industry</li> </ul>
---	--

#### 4.1 **Incorporate Embodied Emissions into the BC Building Code. (BIG MOVE)**

Advocate to the BC Government for future BC Building and Retrofit Code updates to develop low embodied emissions performance targets for new construction and retrofits, as well as incentivize the use of materials with low embodied emissions through consideration of cost and material availability.

#### 4.2 **New Public Buildings Set Embodied Emission Reduction Targets.**

Advocate to public sector organizations across the region to establish embodied emission reduction targets into new construction projects ahead of provincial Code changes.

#### 4.3 **Use Building Materials with Low Embodied Emissions.**

Advocate to the BC Government and member jurisdictions to create procurement policies that prioritize the use of building materials with low embodied emissions, including BC forest products.

#### **Callout Box: Buildings and the circular economy**

The construction, retrofit and demolition of buildings creates a lot of unnecessary emissions and waste. In our current “take-make-dispose” economy, demolition material is too damaged to use in new construction. New approaches such as thinking of buildings as “material banks” could help the region transition to a circular economy that keeps building materials circulating at their highest potential value. Through circular design and circular business models we can decrease embodied emissions while increasing economic activity for deconstruction. A small building deconstruction economy is already starting in Metro Vancouver – by setting embodied emissions targets in buildings we can support further growth of the circular economy for the built environment in our region.

#### 4.4 **Regional Working Group to Reduce Embodied Emissions in Buildings.**

Work with member jurisdictions, BC Government, industry and other regional partners to develop a regional working group focused on reducing the embodied emissions in new construction and building retrofits. The working group would support accelerated policy development, establish a regional baseline for embodied emissions, and would also align with the Building Decarbonization Coalition (see Action 2.1).

#### 4.5 **Strengthen Metro Vancouver’s Corporate Sustainable Design Requirements. (CORPORATE LEADERSHIP)**

Update Metro Vancouver's Sustainable Infrastructure and Buildings Policy to include increasingly stringent embodied emissions requirements and greenhouse gas performance limits. These requirements should align with the corporate low carbon procurement policies in Action 4.3.

## Resilient Buildings Strategies

### Strategy 5: Support water conservation and non-potable water reuse to increase resilience to shifting precipitation patterns

As summers become hotter and drier in the future and water supply is impacted, the region will look to buildings to play a role in better water conservation practices. On-site non-potable water systems have a great deal of potential to reduce demand for potable water in Metro Vancouver. To make these systems more viable, however, there is a need to improve industry understanding on how to appropriately install and maintain them. Guides and resources aimed at key industry and stakeholder groups will support the training that will be required for successful implementation.

#### 5.1 **Apply Leading Water Efficiency Standards to Buildings. (BIG MOVE)**

Advocate for updates to the BC Building and Plumbing Code to require the highest efficiency standards for water use in buildings. Ongoing updates to strengthen standards for water efficiency in buildings should reflect the continuous improvement in technologies and practices for construction and plumbing.

#### 5.2 **Broaden Applications of Non-Potable Water Use in Buildings.**

Advocate to member jurisdictions and other agencies for the development of standardized on-site non-potable water use, working towards a One Water approach. Metro Vancouver will support member jurisdictions to identify barriers and solutions for the application of these standards across building types.

**Callout Box: A One Water Approach** is where water and wastewater utilities shift away from the traditionally separated silos of drinking water, waste water and storm water, towards an integrated systems approach. This is based on the fundamental concept that all water systems are interconnected and opportunities exist to leverage the interconnections of our water resources.

#### 5.3 **Support Capacity Building of Non-Potable Water Use Applications on Building Sites.**

Work with member jurisdictions, the BC Government, industry and other regional partners to develop educational resources for the buildings industry and trades that increase the capacity to install and maintain on-site non-potable systems, which have a high potential to reduce demand for potable water in Metro Vancouver.

## Strategy 6: Support the uptake of building design and retrofit solutions to reduce the impact of heatwaves and wildfires

Metro Vancouver has already experienced the challenges of heatwaves and extended periods of poor air quality from wildfires, and this is expected to increase in the future. These events carry with them a host of health and safety risks (e.g., overheating, and aggravating existing respiratory diseases), especially for populations with pre-existing health conditions and limited access to resources. To reduce the impact that heat and wildfire smoke has on our residents, we need a network of publicly accessible buildings that can provide cool, clean indoor air, where people can seek shelter. At the same time, our new and existing buildings will need to meet higher standards for cooling, airtightness and filtration.

### 6.1 **Require Cooling Measures in New Buildings and Major Retrofits. (BIG MOVE)**

Advocate to BC Government to require cooling measures in new construction and significant retrofits to meet current and future cooling demands.

#### **Call out Box: Cooler Buildings for a Hotter Future**

As the climate warms, enhanced cooling will be necessary to ensure thermal comfort for building occupants. Starting with passive design is key to simultaneously reducing cooling demand and energy costs, through strategies such as orientation, solar shading and high-performance glazing. After maximizing passive measures, mechanical systems such as heat pumps can help to meet additional cooling needs. These measures should be applied in combination at new construction projects and major retrofits, with designs that account for both present and future conditions.

### 6.2 **Apply Leading Standards for Ventilation and Filtration in New Buildings. (BIG MOVE)**

Advocate to the BC Government to establish increasingly stringent code requirements for ventilation and filtration systems in new construction. These requirements will reduce the impacts of poor indoor air quality, including wildfire smoke events.

### 6.3 **Expand the Network of Public Buildings that can serve as Cool, Clean Air Centres.**

Work with regional partners to conduct public outreach about buildings that our most vulnerable residents can rely on for cool and clean air during extreme heat events and periods of poor air quality, and identify facilities that could be feasibly upgraded to serve this function.

### 6.4 **Understand Climate Risk and Resilience for Public Buildings Across the Region.**

Work with member jurisdictions, health authorities and other regional partners to conduct a regional vulnerability assessment for public buildings in Metro Vancouver to understand where risks are the highest and where adaptive capacity already exists.

### 6.5 **Integrate Resiliency into Low Carbon Upgrade Solutions.**

Work with member municipalities, BC Government and other regional partners to integrate resiliency solutions for existing buildings into the support services proposed in Strategy 2.

## Strategy 7: Encourage the uptake of design and retrofit solutions that increase resilience to severe storms and flooding in buildings

As our climate changes, severe storms with heavy precipitation and high winds will occur more frequently and with greater magnitude. It will be important to ensure that new buildings are designed to withstand the impact of these shock events, and to reduce damage and avoid financial burden. Metro Vancouver and its partners can serve as key actors in developing and disseminating information on these options to industry and other stakeholders.

**Call out box: Different kinds of flooding in the region.** Metro Vancouver is expected to see increased flooding in the future. There are three types of flooding that can impact buildings in our region:

**Coastal flooding** happens when strong winds push ocean waves beyond the natural tidal area. Low lying areas can be particularly vulnerable to coastal flooding.

**Riverine flooding** happens when water levels run over the natural or artificial banks of a stream or river, such as the Fraser.

**Urban flooding** happens when severe precipitation overwhelms the drainage system of a city or town and causes water to collect in the streets, causing damage to buildings and infrastructure.

### 7.1 Update Climate Projections to Future-Proof Buildings.

Work with the BC Government to update planning and design tools for building design, based on future climate modeling, to ensure buildings are capable of withstanding anticipated climate conditions, including heavy precipitation, flooding and increased wind speeds.

### 7.2 Provide Education on Retrofit Options that can Increase Resilience to Severe Storms and Flooding.

Work with member municipalities, BC Government and other regional partners to communicate to industry the retrofit solutions that reduce the risks associated with severe storms and flooding. This work should be integrated with the industry training and education work in action 2.8.

## Setting the Path Ahead

**Call out Box:** The “Setting the Path Ahead” section will eventually be found on Metro Vancouver’s Climate 2050 webpages under “Buildings”, and will serve as a companion to the Buildings Roadmap. This will allow Metro Vancouver to track progress towards targets, and add and adjust strategies and actions in response to performance measurement.

Zero emissions, efficient buildings are better for the environment and better for the people who work, live and play in them. There is strong potential and a critical need to achieve significant greenhouse gas emissions reductions in Metro Vancouver’s building sector over the next three decades. The first place to start is to ensure that all new buildings constructed are zero emissions.

By expediently addressing new construction, all levels of government, utilities, and industry can then focus on the longer-term task of decarbonizing the region’s existing building stock. Achieving this will require careful coordination between key stakeholders, and increased market awareness about the opportunities and benefits of efficient buildings powered by clean and renewable energy. Support for training and



knowledge sharing will make it easier for building owners and building professionals to make this shift, backed by effective regulations to ensure that all buildings eventually participate.

The timeline below includes all of the actions included in this Roadmap. Although there is much work to be done, there are a few critical actions that, if started over the next two years, will make a major difference to accelerating the region's drive to zero emission and resilient buildings.

Climate 2050 Buildings Roadmap Action Timeline			
Strategy	2021-2023	2024-2029	2030-Beyond
1. Signal the Transition to Zero Emission Buildings Through Requirements and Standards		GHG Performance Requirements for Existing Large Buildings	
		GHG Performance Requirements for Existing Houses & Townhomes	
		New Buildings Efficient and Electric	
		Require Greenhouse Gas Reductions During Renovations	
		Energy Labels for Homes and Buildings	
		Manage Indoor Air Quality in Building Codes	
			High Perform. Heating and Cooling Equip.
		Significantly Reduce Refrigerant Leaks in Building Equipment	
			Value Zero Emissions and Resilient Buildings in Lending Practices
		Building Electrification Mandate for BC Hydro	
2. Accelerate Demand for Zero Emissions Buildings through Research, Education & Funding		Building Decarbonization Coalition	
		Online Decision Support Tools for Low Carbon Upgrades	
		Energy Advisor Services for Homes and Large Buildings	
		Expand Low Carbon Upgrade Incentives	
		New Financing Tools for Low Carbon Upgrades	
		Make Electricity Upgrades Faster and Cheaper	
		Increase Public Awareness of the Benefits of Zero Emissions and Resilient Buildings	
		Training and Education in Zero Emissions and Resilient Buildings	
		Share Lessons from Transitioning Metro Vancouver Corporate Buildings to Zero Emissions	
		Test New Zero Emission Building Technologies	
3. Shift to Zero Carbon District Energy Systems		Emissions Requirements for District Energy Systems	
		Low Carbon District Energy Policies	
4. Accelerate the Transition to Lower Embodied Emissions in Buildings		Incorporate Embodied Emissions into BC Building Code	
		New Public Buildings Set Embodied Emission Reduction Targets	
		Use Building Materials with Low Embodied Emissions	
		Regional Working Group to Reduce Embodied Emissions in Buildings	
		Strengthen Metro Vancouver's Corporate Sustainable Design Requirements	
5. Water Conservation & Non-Potable Water Reuse		Apply Leading Water Efficiency Standards to Buildings	
		Broaden Applications of Non-Potable Water Use in Buildings	
		Support Capacity Building of Non-Potable Water use Applications on Building Sites	
6. Design & Retrofit Solutions for Heatwave and Wildfire Resiliency		Require Cooling Measures in New Buildings and Major Retrofits	
		Apply Leading Standards for Ventilation and Filtration in New Buildings	
		Expand the Network of Public Buildings that can serve as Cool, Clean Air Centres	
		Understand Climate Risk and Resilience for Public Buildings Across the Region	
7. Design & Retrofit Solutions for Storm and Flooding Resiliency		Integrate Resiliency into Low Carbon Upgrade Solutions	
		Update Climate Projections to Future-Proof Buildings	
		Provide Education on Retrofit Options that can Increase Resilience to Severe Storms and Flooding	

## Measuring our Progress

The table below lists examples of some of the performance indicators that could be used to help Metro Vancouver measure regional progress towards meeting the targets set out for this purpose. The performance indicators used will depend on the availability of this information from other organizations. Because the Buildings Roadmap is calling for actions from many different partners and stakeholders, data sharing will be foundational to understanding the pace of progress towards our common goals, and will help governments to continue to shape equitable and cost-effective pathways to a zero emissions future.

Roadmap Element	Key Performance Indicator	Data Source	Data is Currently Collected
<b>Regional GHG impact</b>	tCO <sub>2</sub> e attributed to the building sector	Regional GHG inventory	Yes
	tCO <sub>2</sub> e attributed to the building sector	Aggregated utility data for building energy sales	Yes
<b>Zero Emissions Buildings Standards</b>	Number of municipalities adopting minimum GHG performance requirements (medium term)	BC Government	No
	Number of retrofit code permits with energy/climate measures	Local Governments	No
<b>Demand for Zero Emissions Buildings</b>	Numbers of high-efficiency electric equipment sold in BC	HRAI & CIPH shipment data Technical Safety BC Municipal mechanical system permits	No
	New buildings with low-carbon energy systems	Local Government building permits	Yes
	Distribution of building level GHG intensity scores (medium term KPI)	Building Energy Benchmarking Home Energy Scores	No
	Number of incentives (number of incentives and total dollar value).	CleanBC, Utilities	Yes
	Number of self-reported heat pump systems and fuel switches	Residential End Use Survey & Commercial End Use Survey (medium term KPI)	Yes
	Number of installed heat pump systems	Local government and Technical Safety BC Installation Permits	Yes
	Number of builders and retrofit trades companies operating in BC	North American Industry Classification Systems (NAICS) company registry	Yes
	Number of CleanBC Program Registered Contractors in different regions of BC	BC Government	Yes
	Number and sector distribution of Building Electrification Coalition members	Coalition	No
	Number of products, efficiency ratings and purchase cost	Shelf/industry survey	No
	Net present value of newly installed high-efficiency electric systems in buildings	Various	No
	Number of new products – year over year	Shelf/industry survey	No
	Number and types of products going through certification process	Canadian Standards Association (CSA)	No
<b>Zero Carbon District Energy Systems</b>	tCO <sub>2</sub> e attributed to district energy systems	Metro Vancouver District Energy Reporting Data	Yes
<b>Lower Embodied Emissions</b>	TBD	TBD	TBC
<b>Water Conservation &amp; Reuse</b>	TBD	TBD	TBC
<b>Heatwave &amp; Wildfire Resilience</b>	Numbers of high-efficiency electric equipment sold in BC	HRAI & CIPH shipment data Technical Safety BC Municipal mechanical system permits	No
	Number of new buildings with low-carbon energy systems	Local Government building permits	Yes
	Percentage of buildings self-reporting heat pump systems and fuel switches	Residential End Use Survey & Commercial End Use Survey (medium term KPI)	Yes



Roadmap Element	Key Performance Indicator	Data Source	Data is Currently Collected
	Percentage of buildings self-reporting mechanical air filtration systems	Residential End Use Survey & Commercial End Use Survey (medium term KPI)	No
	Number of installed heat pump systems	Local government and Technical Safety BC Installation Permits	Yes
<b>Storm and Flooding Resilience</b>	TBD	TBD	TBC

DRAFT

## Feedback and Engagement Process

This Roadmap was generated with input from many organizations, including other orders of government, and residents across the region. The project team is continuously assessing that input, and many of the recommendations are reflected in the structure and content of this Roadmap.

This Roadmap reflects current policies and the best ideas, approaches and technologies available. As with all climate planning, it must be viewed as an iterative, *dynamic* path forward. The goals remain clear, and new policies, ideas, approaches and technologies must be anticipated and reflected in the Roadmap.

The project team continues to be open to feedback, at any time, in this Buildings Roadmap and any other aspect of the climate action initiatives led or coordinated through Metro Vancouver. Send any comments direct to the Project Team through [Climate2050@metrovancover.org](mailto:Climate2050@metrovancover.org) or phone 604-432-6200.

DRAFT

## Glossary

**Carbon dioxide** (CO<sub>2</sub>) is the primary driver of climate change, and is produced primarily by burning fossil fuels.

**Carbon neutral region** means that the region generates no net greenhouse gas emissions. This is achieved through the deepest greenhouse gas emissions reductions possible across all economic sectors, and any remaining emissions are balanced out by the carbon dioxide that the plants, trees, and soil of the region remove from the atmosphere, or potentially through technological means

**Carbon sequestration** is the removal of carbon dioxide from the air and the long-term storage of carbon to mitigate climate change.

**Clean, renewable energy** is low or zero emission energy that is replenished over days or years. In Metro Vancouver, clean, renewable energy is primarily electricity from renewable sources such as hydro or solar.

**Climate resilience** describes the capacity of ecosystems, infrastructure, economies, and communities to absorb the impacts of climate change while maintaining essential services and functions needed to support health and well-being. In some cases, climate resilience involves changing services and functions so they are more sustainable.

**Common air contaminants** are air contaminants that can harm public health and reduce residents' quality of life and life expectancy by causing heart and lung diseases, cancer, asthma, and other impacts. Some air contaminants have odorous characteristics. Common air contaminants include fine and coarse particulate matter, ground-level ozone, nitrogen dioxide, sulphur dioxide, and ammonia.

**Embodied emissions** are greenhouse gas emissions associated with the construction of goods and products, including the raw materials and the transport of the good or product to where it is sold.

**Equity** is the promotion of fairness, justice and the removal of structural barriers that may cause or aggravate disparities experienced by different groups of people.

**Fine particulate matter** (PM<sub>2.5</sub>) is made up of tiny solid or liquid particles that float in the air and can penetrate deep into the lungs and even into the bloodstream. Fine particulate matter can damage people's health by aggravating existing lung and heart diseases, increasing the risk of cancer and reducing life expectancy.

**Global Warming Potential** refers to the ability of a greenhouse gas to trap heat into the atmosphere over a specific period of time (usually 100 years). In other words, how many kilograms of carbon dioxide released into the atmosphere would it take to equal a single kilogram of the refrigerant gas, if released. Some of the most common refrigerants used in heat pumps today can have GWPs that exceed 750 (e.g., R410a, R407c and R134a).

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

**Low carbon building upgrades** include upgrading building insulation and windows, sealing out drafts and switching to electric heating and cooling. These upgrades can significantly reduce energy consumption and emissions.

**Nitrogen oxides** (NO<sub>x</sub>) are a group of gases, which includes nitrogen dioxide, that are produced during high-temperature fuel combustion, and can contribute to the formation of ground-level ozone and fine particulate matter.

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

**Vulnerability** is the degree to which ecosystems, economies, infrastructure and communities are susceptible to, or unable to cope with, the adverse effects of climate change. Vulnerability varies based on exposure, sensitivity and adaptive capacity. Geographic location, socio-economic conditions, and other factors can impact susceptibility to harm and adaptive capacity.

**Vulnerability assessments** identify areas or populations most likely to be impacted by projected changes in climate and build an understanding of why these areas are vulnerable, including the interaction between climate change, non-climatic stressors and cumulative impacts. Assessments evaluate the effectiveness of previous coping strategies and target potential adaptation measures.

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

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

---

To: Regional Planning Committee

From: Erin Rennie, Senior Planner, Regional Planning and Housing Services

Date: February 19, 2021 Meeting Date: March 5, 2021

Subject: ***Metro 2050 Draft Policy Language - Goals 1 and 2***

---

### **RECOMMENDATION**

That the MVRD Board receive for information the report dated February 19, 2021, titled, “*Metro 2050 Draft Policy Language – Goals 1 and 2.*”

---

### **EXECUTIVE SUMMARY**

Metro Vancouver staff, working with the *Metro 2050* Intergovernmental Advisory Committee, have drafted content for *Metro 2050*’s Goals 1 and 2. The content has been prepared using the MVRD Board endorsed policy recommendations for each of the themed *Metro 2040* Policy Reviews.

The proposed changes to these goals focus on:

- new and enhanced policies that support focusing residential and employment growth in close proximity to public transit using a new regional tool called the “Major Transit Growth Corridors”;
- expanding the types of Urban Centres and Frequent Transit Development Areas to give member jurisdictions greater flexibility to identify areas of growth potential versus more stable neighbourhoods;
- new tools that help member jurisdictions build complete communities;
- enhancing the protection of the region’s Industrial areas; and
- providing greater clarity around the role of Employment and Rural areas.

The content of Goals 3, 4, and 5 and the Implementation section is being drafted and will be presented to the Regional Planning Committee and Board for information at the April and May meetings. A complete draft of *Metro 2050* will be presented to the Regional Planning Committee and MVRD Board in July with a recommendation that it be referred out for formal comment between August and December 2021.

### **PURPOSE**

To provide the Regional Planning Committee with the opportunity to review and comment on the draft content of Goal 1 and Goal 2 of *Metro 2050*, the updated regional growth strategy.

### **BACKGROUND**

Between September and November of 2020 the Regional Planning Committee and MVRD Board endorsed or received the recommended policy directions of 8 of the 11 *Metro 2040* Policy Reviews. The draft strategies contained in Goals 1 and 2 have been prepared based on the directions associated with the Urban Centres and Frequent Transit Development Areas, Industrial and Mixed Employment, Complete Communities, Agriculture, and Rural Areas policy reviews (Reference 1). Metro Vancouver staff have been working through the strategies of Goals 1 and 2 with the members

of the *Metro 2050* Intergovernmental Advisory Committee, and they are now ready for the Committee's review.

### **METRO 2050 INTERGOVERNMENTAL ADVISORY COMMITTEE**

The *Metro 2050* Intergovernmental Advisory Committee (IAC) is a staff advisory committee made up of planning directors from Metro Vancouver member jurisdictions, adjacent regional districts, TransLink, the Ministry of Municipal Affairs, First Nations from within the region, the Vancouver Airport Authority, the Port of Vancouver, the Agricultural Land Commission, and select post-secondary institutions. Establishing an IAC is a legislative requirement under the *Local Government Act* when creating or updating a regional growth strategy, and is intended to advise on its content and implementation. The *Metro 2050* IAC held its first meeting early in 2020, and has been meeting monthly starting in January of this year working through draft policy language goal by goal, and will continue to May 2021. Throughout this process, Regional Planning staff have also been connecting with many other agencies, organizations, First Nations, and other Metro Vancouver staff (Reference 3). Staff acknowledge and appreciate the constructive dialogue, comments and input from the many partner agencies and organizations that have been involved to date, to help make *Metro 2050* an accurate reflection of the shared region's collective vision for sustainable growth.

Given the commenting timelines on the draft content, IAC comments have been incorporated into the Goal 1 content attached to this report, but have not yet been fully incorporated into the content of Goal 2. IAC members' comments on Goal 2 will be considered and integrated into the draft content in the coming weeks, and staff will advise the Regional Planning Committee in a future report should there be any significant changes that are recommended.

### **DRAFT METRO 2050 - GOAL 1 AND GOAL 2**

*Metro 2050* is an update and not an entirely new regional growth strategy; as such, the existing text of *Metro 2040* is being used as the 'base' for the development of *Metro 2050*. For this reason, a 'marked up' version of *Metro 2040* has been prepared for ease of communicating the proposed policy changes (Attachments 1 to 12). A column down the right hand side of the drafts explains the rationale for any change, and where applicable the previous policy action reference number from *Metro 2040* is noted, and new policies are highlighted as red text. Where appropriate, staff have proposed minor 'housekeeping' changes to text throughout to provide additional clarity or update terminology as needed.

Some general changes that are being applied to content include:

- the term "municipality" has been revised to read "member jurisdiction";
- actions that were previously categorized as "requested of other agencies" have now been re-written as advocacy actions for Metro Vancouver to complete. The exception is actions for TransLink which will be a signatory to *Metro 2050*;
- new strategy rationale sections have been added documenting the intention of each individual strategy; and
- where appropriate, the linkage of any policy action or strategy to climate change mitigation and adaptation has been highlighted.

### Summary of Policy Changes

The draft version of Goal 1 includes new and enhanced policies that support focusing residential and employment growth in close proximity to public transit using a new regional tool called the “Major Transit Growth Corridors”.

The draft of Goal 1 also includes:

- new policies that enhance the coordination between members and Metro Vancouver’s utilities to support more proactive and efficient growth planning (Strategy 1.1);
- expanding the types of Urban Centres and Frequent Transit Development Areas to include High Growth Municipal Town Centres, Corridor FTDA’s, and Station Area FTDA’s (In addition, a reclassification framework is provided to provide guidance on how an FTDA’s could be reclassified to a Municipal Town Centre) (Strategy 1.2);
- new avenues that support member jurisdictions in building complete communities, for example through the use of social impact assessments (Strategy 1.3); and
- additional policy support to protect and clarify the intention of rural lands (Strategy 1.4).

The draft of Goal 2 includes:

- enhanced protection and policies to support the intensification of industrial lands in accordance with priority actions approved as part of the Regional Industrial Lands Strategy;
- renaming the “Mixed Employment” regional land use designation to “Employment” lands, and providing additional flexibility for areas in close proximity to rapid rail transit stations; and
- improved protection of agricultural lands and an emphasis on the connection between agricultural lands and climate action.

The following table outlines the current proposed policy changes relative to the existing regional growth strategy. The table will assist in understanding how much of each the sections have changed by way of the policy reviews.

Strategy Section	Current Number of Policies (Metro 2040)	Proposed Number of Text Changes (Metro 2050)	Proposed New Policies (Metro 2050)
1.1	6	1	5
1.2	9	1	16
1.3	3	1	4
1.4	17	0	2
2.1	9	3	2
2.2	5	4	5
2.3	11	1	8

\*New policy and those with text changes are highlighted in red within the report’s attachments.

\*\*These only highlight policy(ies) that have had significant text changes or have been added and do reflect the total number of policies in a section.

## **NEXT STEPS**

Staff anticipate receiving comments and revisions on the draft Goal 2 content from the *Metro 2050* Intergovernmental Advisory Committee in the coming weeks. In April 2021, staff will be presenting a staff report on Goal 3 and the Implementation section to the Regional Planning Committee and Board for review.

## **CONCLUSION**

Metro Vancouver staff, with the support of the *Metro 2050* Intergovernmental Advisory Committee, are currently drafting new and amended content for *Metro 2050*, by goal area, based on the MVRD Board endorsed policy review recommendations. The draft policy content for Goals 1 and 2 are now being presented to the Regional Planning Committee in this report for discussion. The draft strategies of *Metro 2050* build on the successes of *Metro 2040*, using the existing policy content as a 'base' to make improvements and enhancements to further the integration of land use and transportation, protect important lands, and support the effective implementation of the shared regional vision.

The content of Goals 3, 4, and 5 and the Implementation section is being drafted and will be presented to the *Metro 2050* Intergovernmental Advisory Committee at its upcoming monthly meetings, and will then be provided to the Regional Planning Committee for discussion. In accordance with the approved project schedule, in July 2021 staff will present a complete draft of *Metro 2050* to the Regional Planning Committee and MVRD Board for consideration, with a recommendation that it be referred out for formal comment between August and December 2021.

## **Attachments** (44144023)

1. *Metro 2050* Definitions Section (select paragraphs that relate to Goal 1 and 2)
2. *Metro 2050* draft Goal 1 Preamble
3. *Metro 2050* draft Strategy 1.1
4. *Metro 2050* draft Strategy 1.2
5. *Metro 2050* Table 3 Guidelines for Urban Centres and FTDA's
6. *Metro 2050* Table X Centre Type Reclassification Framework
7. *Metro 2050* draft Strategy 1.3
8. *Metro 2050* draft Strategy 1.4
9. *Metro 2050* draft Goal 2 Preamble
10. *Metro 2050* draft Strategy 2.1
11. *Metro 2050* draft Strategy 2.2
12. *Metro 2050* draft Strategy 2.3

## **References**

1. [Metro 2040 Policy Review Summaries](#)
2. [Towards Metro 2050: Updating Metro Vancouver 2040: Shaping our Future, Section E 2.4, MVRD Board, April 26, 2019](#)
3. [Metro 2050 Q3/Q4 2020 Status Update, Regional Planning Committee, November 6, 2020](#)



## Section D – Definitions

### Regional Land Use Designations and Overlays

#### (GOAL 1 / 2 CONTENT ONLY) (*Metro 2040* p9/10)

\*Note the Industrial, Employment, and Agricultural Land Use Designations and the Trade-Oriented Overlay definitions below have not yet been reviewed by the Intergovernmental Advisory Committee.

Proposed <i>Metro 2050</i> Text	Rationale for Change
<p><b>Introduction</b></p> <p>The following regional land use designations and overlays are key tools in achieving the five goals of the regional growth strategy. They establish a long-term regional land use framework and provide the basis for defining land use matters of regional significance.</p> <p>The intent statements for the regional land use designations and overlays are to be read in conjunction with applicable strategies and actions under each goal and are to be supported by member jurisdictions in their Regional Context Statements. The boundaries for the regional designations are established on a parcel-based map maintained by Metro Vancouver and are depicted on the Regional Land Use Designations map (Map 2).</p> <p>The general locations (not the parcel-based boundaries) of Urban Centre and Frequent Transit Development Area overlays, once defined by member jurisdictions are shown on Maps 2 and 4. The parcel-based boundaries of Urban Centre and Frequent Transit Development Area overlays, as determined by member jurisdictions, will be depicted on a reference map, which will be maintained in association with, but is not part of the regional growth strategy.</p>	<p>“Municipalities” replaced with “member jurisdiction”</p> <p>Minor edits for clarity.</p>
<p><b>Urban Containment Boundary</b></p> <p>The Urban Containment Boundary is a stable, long-term, regionally defined area for urban development <b>that protects Agricultural, Conservation and Recreation, and Rural areas from developments requiring utility infrastructure and from auto-oriented, dispersed development patterns. Locating housing, regional transportation and other infrastructure investments within the Urban Containment Boundary supports land development patterns that can protect food producing land, reduce energy demand and greenhouse gas emissions from commuter traffic, and secures land for adaptation to climate change and natural carbon sinks. Residential and employment infill development is encouraged within the Urban Containment Boundary.</b></p>	<p>Reworded to emphasize climate benefit of the Urban Containment Boundary. Changes made in response to feedback from IAC</p>

Urban Land Use Designations	
<p><b>General Urban</b></p> <p>General Urban areas are intended for residential neighbourhoods and centres, and are supported by shopping, services, institutions, recreational facilities and parks. Within General Urban areas, commercial, employment, and residential development should be focused in Urban Centres and Frequent Transit Development Areas. Higher density trip-generating development is to be directed only to Urban Centres and Frequent Transit Development Areas. Neighbourhood-serving shops and services are encouraged in General Urban areas outside of Urban Centres and Frequent Transit Development Areas. General Urban areas are intended to emphasize place-making, an enriched public realm, and promote transit-oriented communities, where transit, multiple-occupancy vehicles, cycling and walking are the preferred modes of transportation.</p>	<p>Adds reference to commercial and employment activities. Clarifies intended scale of development outside of Urban Centres and FTDAs.</p>
<p><b>Industrial</b></p> <p>Industrial areas are primarily intended for heavy and light industrial activities, including: distribution, warehousing, repair, construction yards, infrastructure, outdoor storage, wholesale, trade, e-commerce, emerging technology-driven forms of industry, and appropriately-related and scaled accessory uses.</p> <p>The intensification and densification of industrial activities and forms are encouraged, which are contextually appropriate to the surrounding community. Limited industrial-serving commercial uses that support the primary industrial functions are appropriate. Residential uses are not intended.</p>	<p>Expanded definition of industrial uses, but also limited non-industrial / accessory uses. Based on findings / recommendation from RILS.</p> <p>Add reference to industrial densification / intensification in the description.</p> <p>Adjust definition to be more specific / limiting in terms of non-industrial / accessory uses on industrial lands.</p>
<p><b>Employment</b></p> <p>Employment areas are intended for light industrial, commercial, and other employment-related uses to help meet the needs of the local and regional economies. They are intended to support local and regional economic activities, and complement the planned function of Urban Centres and Frequent Transit Development Areas.</p> <p>Employment areas that are located within Urban Centres and Frequent Transit Development Areas provide locations for a range and mix of employment activities and more intensive forms of commercial development.</p> <p>Residential uses are not intended in Employment lands, with the exception of sites located within 200m of rapid transit stations. The urban form associated with this exception is for residential to be located on the upper floors of mid- to high-rise buildings, while, commercial and light industrial uses are to be located on the ground or lower floors. Residential uses are intended to support other regional growth strategy objectives regarding the provision of affordable rental housing near transit.</p>	<p>Throughout, rename the term 'Mixed Employment' to 'Employment'.</p> <p>Delete reference to no residential, as per new provision may allow residential in certain cases.</p> <p>Proposed new provision to allow residential (emphasis on affordable rental) on Employment lands within 200m of rapid transit stations and other criteria as outlined in the goal and implementation policy sections.</p>

<p>Employment areas located outside of Urban Centres and Frequent Transit Development Areas are primarily intended for light industrial and commercial uses that require larger-format buildings not consistent with the character of a dense transit oriented neighbourhood, Urban Centre, or FTDA.</p>	
<p><b>Non-Urban Land Use Designations</b></p>	
<p><b><u>Agricultural</u></b></p> <p>Agricultural lands are intended for agriculture production and agricultural-related uses that are compatible with farming operations and directly support the agricultural industry. Lands designated as Agricultural reinforce the provincial Agricultural Land Reserve and local land use plans that protect the region’s agricultural land base. These lands are protected to support agricultural uses and activities over the long term.</p>	<p>To make the connection to the ALR and the importance of encouraging agricultural activities on agricultural land. ‘Agriculture production’ and ‘agriculture-related uses’ will be defined in the glossary.</p>
<p><b><u>Rural</u></b></p> <p>Rural areas are intended to protect the existing character, landscapes and environmental qualities of rural communities outside the Urban Containment Boundary. Land uses in these areas include low density forms of residential, agricultural uses and small scale commercial, industrial, institutional that do not require the provision of urban services such as sewerage or transit. As such, Rural areas are not intended as future urban development areas and generally will not have access to regional sewerage services. Rural designated land within this plan generally comprise lands with low intensity residential or built environments that are historical, remote and/or not contiguous with the urban area or may have topographic constraints, natural areas and agricultural land.</p>	<p>Clarifies the definition of Rural as recommended in the Policy Review and refined by IAC members.</p>
<p><b>Regional Overlays</b></p>	
<p><b><u>Introduction to Overlays</u></b></p> <p>Within the Urban Containment Boundary, Urban Centres and Frequent Transit Development Areas may be overlaid on any regional land use designation. Urban Centre and Frequent Transit Development Area overlays and policies enable higher density residential and commercial development for General Urban areas, and higher density commercial and industrial development for Employment areas. Where overlays cover lands other than those designated General Urban or Employment, the intent and policies of the underlying regional land use designations still apply.</p>	<p>Removing the “mixed” from the previously termed “Mixed Employment” Land Use Designation as per the Industrial and Mixed Employment Policy Review Recommendations.</p> <p>In addition, clarifies that the Urban Centre and FTDA overlay enables higher density industrial development on lands with an Employment Land Use Designation.</p>

<p><b><u>Urban Centres</u></b></p> <p>Urban Centres are intended to be the region’s primary focal points for concentrated growth and transit service. They are intended as priority locations for employment and services, higher density forms, mixed residential tenures, affordable housing options, commercial, cultural, entertainment, institutional, and mixed uses. Urban Centres are intended to emphasize place-making, an enriched public realm, and promote transit-oriented communities, where transit, cycling and walking are the preferred modes of transportation. <b>Urban Centres are priority locations for services and amenities that support a growing population.</b></p> <p>Maps 2 and 4 show the Urban Centres locations. Urban Centres boundaries are identified by member jurisdictions in their Regional Context Statements in a manner generally consistent with the guidelines in Table 3 (Guidelines for Urban Centres and Frequent Transit Development Areas). <b>As per Table 3, there are different types of Urban Centres with different scales of expected activity and growth.</b></p>	<p>Urban Centre and FTDA Policy Review Recommendation #5 adds the provision of affordable rental housing and population-serving amenities as an expected use in Urban Centres.</p> <p>Urban Centre and FTDA Policy Review Recommendation #2 introduces the new Urban Centre typology with different activity/growth expectations for different Urban Centres.</p>
<p><b><u>Frequent Transit Development Areas</u></b></p> <p>Frequent Transit Development Areas are intended to be additional priority locations to accommodate concentrated growth in higher density forms of development. <b>They are identified by member jurisdictions and located at appropriate locations within the Major Transit Growth Corridors.</b> Frequent Transit Development Areas complement the network of Urban Centres, and are characterized by higher density forms of residential, commercial, and mixed uses, and may contain community, cultural and institutional uses. Urban design for these areas promotes transit-oriented communities where transit, cycling, and walking are the preferred modes of transportation.</p> <p><b>Identifying FTDA within the Major Transit Growth Corridors 1) provides greater certainty and integration between local, regional, and transit plans, and 2) supports transit-oriented development planning across jurisdictional boundaries.</b></p> <p>Maps 2 and 4 show the location of Frequent Transit Development Areas (FTDAs), identified by municipalities in their Regional Context Statements. The Frequent Transit Development Area boundaries are established by municipalities in their Regional Context Statements in a manner generally consistent with the guidelines in Table 3 (Guidelines for Urban Centres and Frequent Transit Development Areas). <b>There are two types of FTDAs: Corridor FTDAs which are linear areas within the Major Transit Growth Corridor; and Station Area FTDAs which are nodal areas surrounding a rapid transit station. Corridor FTDAs are intended to accommodate medium development densities and forms that are consistent with bus-based rapid transit, while Station Area FTDAs are intended to accommodate higher development densities and forms that are consistent with rail-based rapid transit.</b></p>	<p>Urban Centre and FTDA Policy Review Recommendation #1 and 2 replaces the FTN with the Regional Growth Corridors as the intended locations for FTDAs.</p> <p>Introduces the two FTDA subtypes which is part of the new Urban Centre typology.</p> <p>Note: Major Transit Growth Corridors will be added as a definition to the glossary. To assist in the review of this section these corridors generally defined as: Areas for new growth, infill and intensification that are associated with the Major Transit Network (as identified by TransLink). These corridors also include urban centres.</p>

<p><b><u>Trade-Oriented Land Overlay</u></b></p> <p>The Trade-Oriented Land Overlay are industrial lands that are required to support goods movement in, out and through the Metro Vancouver region, and that keep British Columbia and Canada connected to the global supply chain.</p> <p>These important lands are occupied by such uses as: terminal facilities, distribution centres, warehouses, container storage, and freight forwarding activities that serve a national trade function and contribute to the provincial and regional economies. These operations generally require large sites and are located near major transportation infrastructure corridors and terminals</p> <p>Industrial lands with a Trade-Oriented Land Overlay are not intended for stratification tenure or small lot subdivision.</p>	<p>New definition for new trade oriented lands overlay</p> <p>This new overlay supports the implementation of the Regional Industrial Lands Strategy recommendations.</p> <p>Members will identify locations for the Trade Oriented Land Overlay using guidance to be provided by Metro Vancouver.</p>
---	--

Metro 2050 Draft Goal 1 Content Including IAC Comments | Part 2 of 8 | Feb 2021

Goal: 1 Create a Compact Urban Area	
PREAMBLE (p13)	
Proposed Metro 2050 Text	Rationale for Change
A commitment to a compact urban area within the region reflects the recognition that sprawling urban development consumes the natural landscape, necessitates costly and inefficient urban infrastructure such as sewerage services and transit, contributes to negative health impacts, and adds to the global problem of greenhouse gasses, therefore exacerbating climate change. Strategies under this goal delineate between urban and non-urban areas through the use of an Urban Containment Boundary.	Removed dated term “peak oil” Added reference to public health benefits of compact development.
To protect Rural, Conservation and Recreation and Agricultural lands, it is critical to maintain the Urban Containment Boundary and properly structure growth. This includes creating strong Urban Centres throughout the region that are well served by transit and the road network. These centres collectively make an important contribution to providing locations for employment and convenient access to shops and services close to home. Frequent Transit Development Areas, located in strategic areas within Major Transit Growth Corridors, provide an additional focus for growth, particularly for higher density residential, commercial, transit-oriented, and mixed use development. Major Transit Growth Corridors represent the priority locations for transit investment, housing and employment growth, and new Frequent Transit Development Areas, helping to bring additional certainty and greater coordination for communities, TransLink and Metro Vancouver. Together, the Urban Centres and Frequent Transit Development Areas help shape transportation demand, optimize investments in the region’s transportation system, and support the development of region-wide network of complete communities.	Going forward we will request that FTDAs are identified within Major Transit Growth Corridors. See Urban Centre and FTDA Policy Review Recommendation #1. This is because the FTN will continue to expand so significantly by the year 2050 that it will no longer be an effective framework for directing compact growth.
Complete communities are walkable, mixed use, transit-oriented communities where people can live, work, and play, at all stages of their lives. Compact and complete communities enable most people to have close access to a wide range of employment, health, social, cultural, educational and recreational services and amenities. This is integral to positive mental and physical health and well-being, and helps reduce greenhouse gas emissions and air pollution. These places also help create a strong sense of neighbourhood identity, social connection, and community resilience.	Most text taken from previous goal 4.2 rationale section.  Minor text edits.
<b>Strategies to achieve this goal are:</b>	
1.1 Contain urban development within the Urban Containment Boundary	No change
1.2 Focus growth in Urban Centres and Major Transit Growth Corridors	No change

1.3 Develop resilient and complete communities with a range of services and amenities	This strategy is being moved from Goal 4 to more closely link the provision of complete communities with the implementation of Urban Centres and FTDA's. Resiliency to replace "healthy" as a more encompassing term.
1.4 Protect Rural areas from urban development	Formerly Strategy 1.3

Metro 2050 Draft Goal 1 Content Including IAC Comments | Part 3 of 8 | Feb 2021

Goal: 1		
Strategy 1.1		
#	Proposed Metro 2050 Text	Rationale for Change
1	<b>Goal</b> Create a Compact Urban Area	No change
1.1	<b>Strategy</b> Contain urban development within the Urban Containment Boundary	No change
n/a	<b>Strategy Rationale:</b> Containing urban development, including job and housing growth, within the Urban Containment Boundary limits development sprawl and supports the efficient and cost effective provision of infrastructure (such as water, sewage and transit) and services and amenities (such as schools, hospitals, community centres, and child care). The Urban Containment Boundary helps to protect important lands such as Conservation and Recreation, Agricultural and Rural lands from dispersed development patterns. Containing urban development also supports greenhouse gas emission reductions through trip reduction and trip avoidance, while protecting some of the region's important lands for food production and carbon sequestration.	Adding a new "strategy rationale" section after each strategy will help explain the intention the subsequent policies seek to achieve.
	<b>Metro Vancouver will:</b>	
1.1.1	Direct the Greater Vancouver Sewerage and Drainage District (GVS&DD) to not allow connections to regional sewerage services to lands with a Rural, Agricultural, or Conservation and Recreation regional land use designation. Notwithstanding this general rule, in the exceptional circumstances specified below, the MVRD Board will advise the GVS&DD Board that it may consider such a connection for existing development or for new development where, in the MVRD Board's opinion, that new development is consistent with the underlying regional land use designation, and where the MVRD Board determines either: <ul style="list-style-type: none"> <li>a) that the connection to regional sewerage services is the only reasonable means of preventing or alleviating a public health or environmental contamination risk; or</li> <li>b) that the connection to regional sewerage services would have no significant impact on the goals of containing urban development within the Urban Containment Boundary, and protecting lands with a Rural, Agricultural, or Conservation and Recreation regional land use designation.</li> </ul>	Housekeeping – GVRD is now MVRD.
1.1.2	Accept Regional Context Statements that accommodate all urban development within the areas defined by the Urban Containment Boundary, and that meet or work towards Action 1.1.9.	Update cross reference from 1.1.3 to 1.1.9



**Metro 2050 Draft Goal 1 Content Including IAC Comments | Part 3 of 8 | Feb 2021**

1.1.3	In collaboration member jurisdictions, develop an Implementation Guideline to guide the process by which member jurisdictions are to provide Metro Vancouver's Liquid Waste Services with specific early and ongoing information about plans for growth that may impact the regional sewer system, as well as plans to separate combined sewer systems.	New policy requested by Liquid Waste Services.
1.1.4	Work collaboratively with the Federal Government, the Province, TransLink, BC Transit, and adjacent regional districts to study how interregional transportation connections can be supported and enhanced.	A new action to address the need for enhanced mobility between regional districts while protecting the long term stable boundaries of the UCB and emphasizing interregional growth management principles.
1.1.5	Ensure that sea level rise, flood risk, and other natural hazards have been considered and that a plan to mitigate any identified risks is in place when approving applications submitted by the respective member jurisdiction related to new sewers, drains or alterations, connections, or extensions of sewers or drains.	New action requested by LWS. Wording has been reviewed by LWS and comes directly from GVS&DD Act.
1.1.6	Advocate to the Federal Government and the Province and their agencies that they direct urban, commercial, and institutional facilities and investments within the Urban Containment Boundary, and to Urban Centres.	Formerly 1.1.4 and rephrasing as an advocacy action.
1.1.7	Advocate to the Province to ensure that any transportation plans, strategies, and infrastructure investments do not encourage the dispersal of housing and employment growth outside the Urban Containment Boundary, consistent with the goals of the regional growth strategy.	Formerly 1.1.5 and 1.1.6. Merged and moved to an "advocacy action" for MV. Separated TransLink's actions as an independent action.
1.1.8	Work with First Nations to incorporate development plans and population, employment and housing projections in to the regional growth strategy to support potential infrastructure and utilities investments.	New Policy: to ensure collaboration with First Nations groups and other levels of government.

**Metro 2050 Draft Goal 1 Content Including IAC Comments | Part 3 of 8 | Feb 2021**

	<b>Member jurisdictions will:</b>	
1.1.9	<p>Adopt Regional Context Statements that:</p> <ul style="list-style-type: none"> <li>a) Depict the Urban Containment Boundary on a map, generally consistent with the Regional Land Use Designations map (Map 2);</li> <li>b) Provide member jurisdiction population, dwelling unit, and employment projections, with reference to guidelines contained in Appendix Table A.1, and demonstrate how local plans will work towards accommodating the projected growth within the Urban Containment Boundary in accordance with the regional target of focusing 99% of residential growth inside the Urban Containment Boundary.</li> </ul>	<p>Replaced “municipalities” with “member jurisdiction”</p> <p>Reference to the target of focusing growth within the Urban Containment Boundary has been added.</p>
	<ul style="list-style-type: none"> <li>c) Include a commitment to liaise regularly with Metro Vancouver Liquid Waste Services to keep them apprised of the scale and timeframe of major development plans as well as specific plans to separate combined sewers.</li> </ul>	New policy requested by Liquid Waste Services staff to support longer term utility planning.
	<ul style="list-style-type: none"> <li>c) Integrate land use planning policies with local and regional economic development strategies, particularly in the vicinity of the port and airports, to minimize potential exposure of residents to environmental noise and other harmful impacts.</li> </ul>	New policy requested by YVR to support better public health outcomes by avoiding residential development in proximity to ports and airports.
		Action 1.1.4 has been moved to an advocacy role of MV (1.1.5).
	<b>TransLink will:</b>	
1.1.10	Continue to plan for a compact urban form within the Urban Containment Boundary when developing and implementing transportation plans, strategies, and investments.	Moved advocacy to the province to MV’s role (1.1.6). Separated TransLink’s actions as an independent action.
1.1.11	Discourage the provision of infrastructure to that would facilitate the dispersal of housing and employment growth outside the Urban Containment Boundary when preparing and implementing transportation plans, strategies, and investments.	Moved advocacy to the province to MV’s role (1.1.6). Separated TransLink’s actions as an independent action.

Goal: 1		
Strategy 1.2		
<p><b>*Note this policy language is accompanied by two proposed tables:</b></p> <p>Table X: Centre Type Reclassification Framework</p> <p>Table 3: Guidelines for Urban Centres and FTDA's</p>		
#	Proposed Metro 2050 Text	Rationale for Change
1.2	Focus growth in Urban Centres and Frequent Transit Development Areas	No change
	<p><b>Strategy Rationale:</b> Focusing growth into a network of centres and corridors reduces greenhouse gas emissions by supporting sustainable transportation options, and the distances that people have to travel to make essential trips, while improving the cost-efficiency of infrastructure investments. In addition, a compact built form is, on average, more land and energy efficient than other forms of development. Focusing growth into centres and corridors fosters the development of walkable, vibrant, and mixed use communities that can support a range of cultural amenities.</p> <p>Identifying new FTDA's only in appropriate locations within the Major Transit Growth Corridors ensures that growth is being directed to locations with high quality, frequent transit service, providing greater certainty to residents, TransLink, and member jurisdictions and greater integration of land use and transportation planning.</p>	<p>Adding a new "strategy rationale" section after each strategy will help explain the intention the subsequent policies seek to achieve.</p> <p>Introduces a new approach of only identifying new FTDA's within the Major Transit Growth Corridors which is a policy endorsed through the Urban Centre and FTDA Policy Review.</p>
	<b>Metro Vancouver will:</b>	
1.2.1	Explore, with member jurisdictions, other governments and agencies, the use of financial tools and other incentives to support the location of major commercial, office, retail, and institutional development in Urban Centres.	Replace "municipalities" with "member jurisdictions."
1.2.2	Work with member jurisdictions, TransLink, other governments and agencies to support the development and delivery of effective regional transportation networks and services that support the growth and development of Urban Centres and Major Transit Growth Corridors.	Replace "municipalities" with "member jurisdictions."

1.2.3	Maintain a reference map to provide updated information on the location and extent of Urban Centres, the Major Transit Growth Corridors, and Frequent Transit Development Areas.	Removed reference to population and employment capacity. Added the Major Transit Growth Corridors as a new geography to be mapped by Metro Vancouver.
1.2.4	Monitor progress towards the targets set out in Table 2 (Metro Vancouver Dwelling Unit and Employment Growth Targets for Urban Centres and Frequent Transit Development Areas) for Urban Centres, Major Transit Growth Corridors, and Frequent Transit Development Areas.	Added the Major Transit Growth Corridors as a new geography where growth will be monitored.
1.2.5	Accept Regional Context Statements that prioritize growth and focus higher density development primarily in Urban Centres, and additionally in Frequent Transit Development Areas, and that meet or work towards Actions 1.2.20.	No change other than updated policy action reference
1.2.6	In consultation with TransLink, accept the identification of new Frequent Transit Development Areas located within the Major Transit Growth Corridors (Map #).	New policy from Urban Centre and FTDA Policy review recommendation #1 introduces Major Transit Growth Corridors as the intended locations for new FTDA's. The rationale is to make it easier for members to identify more FTDA's in appropriate locations that support the growth and transit vision for the region. Supports the integration of corridors in regional planning and monitoring.
1.2.7	Work with TransLink, the Province, First Nations, and member jurisdictions to expand the supply of secure and affordable market and non-market rental housing within the Major Transit Growth Corridors.	New policy from Urban Centre and FTDA Policy Review Recommendation #5 responds to recent affordable housing policy research for the need to direct more affordable rental housing to frequent transit corridors.
1.2.8	Consult with TransLink and utilize the required criteria set out in the Centre Type Classification Framework (Table X) when reviewing Regional Context Statements for acceptance or proposed amendments to the regional growth strategy for the reclassification of FTDA's or Urban Centres.	New policy from Urban Centre and FTDA Policy Review Recommendation #3 is to introduce a Centre Type Reclassification Framework and the conditions under which MV would consider the reclassification of Urban Centre or FTDA type.

1.2.9	<p>Not consider a new Urban Centre in the regional growth strategy unless, in addition to the criteria listed in Centre Type Classification Framework (Table X), all of the following criteria have been met:</p> <ul style="list-style-type: none"> <li>a) It intersects with a Major Transit Growth Corridor (Map #);</li> <li>b) Appropriate supporting local or neighbourhood plans have been completed by the respective member jurisdiction, that demonstrate how the future Urban Centre will accommodate the intended regionally-significant levels of employment and residential growth, and the local and neighbourhood plans identify the adequate provision of public spaces and amenities are provided to serve the anticipated growth.</li> </ul>	<p>New policy to reflect Urban Centre and FTDA Policy Review Recommendation #5.</p> <p>This policy supports the creation of a compact urban area by discouraging new Urban Centres and laying out conditions which must be met to support the identification or reclassification of Urban Centres and FTDA's.</p> <p>This reflects that the identification of new Urban Centres distributes growth away from existing Urban Centres and should only be done after considerable planning study. Reflects that new Urban Centres require the dedication of new park land to accommodate the high densities of residents expected in Urban Centres.</p>
1.2.10	<p>Only consider the identification of a new Frequent Transit Development Area that is:</p> <ul style="list-style-type: none"> <li>a) within a Major Transit Growth Corridor; and</li> <li>b) outside known unmitigated flood and other natural hazard risk areas.</li> </ul>	<p>New policy which reflects the climate lens provided by the Climate and Natural Hazards Policy Review, discouraging new high density settlements in hazardous locations or in locations away from high quality transit.</p>
1.2.11	<p>Only consider reclassifying an Urban Centre or a Frequent Transit Development Area to a growth-intensive classification if it is outside of known and unmitigated flooding and natural hazard areas.</p>	<p>New policy which reflects the climate lens provided by the Climate and Natural Hazards Policy Review, discouraging additional growth in hazardous locations.</p>
1.2.12	<p>Develop an Implementation Guideline, in collaboration with member jurisdictions and TransLink, to be used as a resource to support transit-oriented planning throughout region.</p>	<p>Include recent policy research findings and best practices for transit oriented development.</p>

1.2.13	Advocate to the Federal Government and the Province and their agencies that they direct major office and institutional development, public service employment locations and other Major Trip-Generating uses to Urban Centres, Frequent Transit Development Areas, and locations within the Major Transit Growth Corridors where appropriate. This may include, but is not necessarily limited to: hospitals, post-secondary institutions, secondary schools, public-serving health care service facilities, and government-owned / funded affordable or supportive housing developments.	Formerly <i>Metro 2040</i> 1.2.7. Becomes an advocacy action for MV. Added examples of Major Trip-Generating uses.
1.2.14	Advocate to the Federal Government and the Province and their agencies that their procurement, disposition and development of land holdings be consistent with the goals of the regional growth strategy.	<i>Formerly Metro 2040</i> 1.2.8
1.2.15	Advocate to the Province that Metro Vancouver, member jurisdictions, TransLink, and other stakeholders be engaged early in the process on any initiatives pertaining to the planning of new or expanded major transit capital investments.	New action requesting regional input into major transit capital investments.
1.2.16	Advocate to the Province that any future or expanded rail-based rapid transit service: <ul style="list-style-type: none"> <li>a) avoid locations that are exposed to unmitigated natural hazards and climate change risk;</li> <li>b) improve place-making, safety, access, and amenities for people on foot, on bikes, and for those using mobility aids; and</li> <li>c) support the safe and efficient movement of people, goods, and service vehicles, to, from, and within Urban Centres and Frequent Transit Development Areas.</li> </ul>	Formerly <i>Metro 2040</i> 1.2.9 Becomes an advocacy action for MV. Includes climate change adaptation lens.
1.2.17	Advocate to the Federal Government and the Province to support the coordination of growth, land use, and transportation planning at the regional scale through updates to legislation, regulations, partnerships, plans, agreements, and funding programs, including the coordination between regional districts.	New policy from Urban Centre Policy Recommendation #5 to reflect the provincial interest in enhancing inter-regional connectivity.

1.2.18	Advocate to the Federal Government and the Province to support the integration of regional land use and transportation by ensuring that all housing and transportation funding programs and initiatives for this region are consistent with the goals of the regional growth strategy.	New policy from Urban Centre Policy Recommendation #5 to recognize the need for financial support from senior government to fully implement the Urban Centre and FTDA framework.
1.2.19	Advocate to the Federal Government and the Province requesting that they support local community concerns and public health by ensuring that the Vancouver Fraser Port and airport operators continue with efforts to measure, report, and manage traffic, noise, air pollution, and vibration impacts on adjacent communities.	New policy from Urban Centre Policy Recommendation #5, put forward by health authorities. Reflects new planning research on the health impacts of noise. Some of this work is underway and this policy is intended to support the continuation and enhancement of that work.
1.2.20	Advocate to the Province, Health Authorities, and TransLink, requesting continued efforts to develop guidance on community design, appropriate setbacks, and building standards along the Major Roads Network, Major Transit Network, railways, and Federal / Provincial Highways to minimize public exposure to unhealthy levels of noise, vibration, and pollution.	New policy from Urban Centre Policy Recommendation #5 to consider the need for enhanced buffering between transportation corridors and residential uses to protect public health.
1.2.21	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 not impacted by natural hazards and risks.	New Policy: to ensure collaboration with First Nations groups and other levels of government.
	<b>Member Jurisdictions will:</b>	
1.2.22	Adopt Regional Context Statements that:	Formerly 1.2.6. This policy has been reorganized. To reflect Urban Centre and FTDA Policy Review Recommendation #1 the Major Transit Growth Corridor geography is introduced as the intended location for new FTDA's.

a)	Provide dwelling unit and employment projections that indicate the member jurisdiction's share of planned growth and that contribute to achieving the regional share of growth for Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors as set out in Table 2 (Metro Vancouver Dwelling Unit and Employment Growth Targets for Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors);	Updated to include Major Transit Growth Corridor geography. Note that in most cases FTDA's will overlap with MTGCs and performance calculations will be done so as to avoid double counting growth. Changed "municipal" to "member jurisdictions."
b)	Include policies for Urban Centres and FTDA's that:	
	i) identify the location, boundaries and types of Urban Centres and Frequent Transit Development Areas on a map that is consistent with the guidelines set out in Table 3 (Guidelines for Urban Centres and Frequent Transit Development Areas) and the Regional Land Use Designations map (Map 2);	No change
	ii) focus and manage growth and development in Urban Centres and Frequent Transit Development Areas consistent with guidelines set out in Table 3 (Guidelines for Urban Centres and Frequent Transit Development Areas);	Added "and manage"
	iii) direct office development to Urban Centres through policies, economic development programs, and/or other financial incentives;	Formerly 1.2.6 b) iii). Removes policy tool examples. The word "encourage" was replaced with "direct."
	iv) reduce residential and commercial parking requirements in Urban Centres and Frequent Transit Development Areas and consider the use of parking maximums;	Formerly 1.2.6 c) iii) Introduces the concept of parking maximums.
	v) consider the identification of appropriate measures and neighbourhood plans to accommodate urban densification and infill development in Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors in a resilient and equitable way (e.g. community vulnerability assessments, emergency services planning, tenant protection policies, and strategies to enhance community social connectedness and adaptive capacity).	New policy reflecting recent resiliency research. Supports densification in Urban Centres and FTDA's through accompanying supports for community resiliency.



	vi) consider the support for provision of child care spaces in Urban Centres and Frequent Transit Development Areas;	New policy reflecting recent child care research.
	vii) consider the implementation of green infrastructure;	New policy reflecting recent research into green infrastructure and resiliency.
	viii) focus infrastructure and amenity investments (such as public works and civic and recreation facilities) in Urban Centres and FTDA's, and at appropriate locations within Major Transit Growth Corridors.	Formerly Metro 2040 action 3.3.4 c)
	ix) support the provision of community services and spaces for non-profit organizations;	New policy to support community services and the non-profit sector in Urban Centres and FTDA's.
	x) consider, where Urban Centres and Frequent Transit Development Areas overlap with Employment lands, higher density forms of commercial, light industrial and upper floor rental residential uses (residential (emphasis on affordable rental) only within 200 metres of a rapid transit station);	Introduces new provisions for residential (emphasis on affordable rental) use on upper floors of Employment lands in locations that are within 200m of a rapid transit station.
c)	<p>Include policies for General Urban areas that:</p> <p>i) identify General Urban areas and their boundaries on a map generally consistent with the Regional Land Use Designations map (Map 2); and</p> <p>ii) exclude non-residential Major Trip-Generating uses, as defined in the Regional Context Statement, from those portions of General Urban areas outside of Urban Centres and Frequent Transit Development Areas and direct non-residential Major Trip-Generating uses to Urban Centres and Frequent Transit Development Areas;</p> <p>iii) encourage infill and intensification (e.g. row houses, townhouses, mid-rise apartments, and laneway houses, etc.) within walking distance of the Frequent Transit Network, as appropriate;</p> <p>iv) encourage neighbourhood-serving commercial uses.</p>	Formerly 1.2.6 d) Reference to Local Centres is deleted.
d)	with regards to 1.2.13 include a definition of "non-residential Major Trip-Generating Uses" that includes, but is not be limited to, the following uses: office or business parks,	Urban Centre and FTDA Policy Review Recommendation #5. In M2040 municipalities defined for themselves what MTGs were. Here

	large-format retailers, outlet shopping malls, post-secondary institutions, and large-format entertainment venues.	we are providing a minimum standard for the definition and inviting municipalities to elaborate on it in the RCS.
e)	consider the identification of new FTDA's in appropriate locations for areas within Major Transit Growth Corridors, as part of the development of new or amended area or neighbourhood plans, or other community planning initiatives;	Urban Centre and FTDA Policy Review Recommendation #5. Requests that members consider identifying FTDA's within the Major Transit Growth Corridors as part of community planning processes.
f)	consider long-term growth and transportation planning coordination with adjacent municipalities, First Nations, TransLink and Metro Vancouver for transit corridors that run through or along two or more adjacent jurisdictions.	New policy to support enhanced coordination for frequent transit corridors.
		1.2.6.e) has been deleted
	<b>TransLink will:</b>	
		Policy 1.2.7 has been rephrased as an advocacy action for MV.
1.2.23	Develop procurement, disposition and development plans and actions for land holdings that support the goals of the regional growth strategy and include the provision of affordable rental housing.	Formerly 1.2.8. The advocacy action to the provincial/Federal government has been separated out and moved under Metro Vancouver's action. Additional emphasis has been placed on affordable rental housing.
1.2.24	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 locations that are at risk of known unmitigated natural hazards and climate change risks. Where risk is unavoidable, such as in existing settlements, use risk-mitigation or risk-adaptation strategies in the expansion of transit infrastructure.	Formerly 1.2.9. a) The advocacy action to the province has been separated out and moved under Metro Vancouver's action.  Incorporates a Climate and Natural Hazards Policy Review recommendation and Transport Policy Review recommendation to avoid investment of transit infrastructure into hazardous locations.
		1.2.9 b) has been deleted

**Metro 2050 Draft Goal 1 Content with IAC Comments | Part 4 of 8 | Feb 2021**

1.2.25	Work with member jurisdictions to support the safe and efficient movement of people, goods, and service vehicles, to, from, and within Urban Centres and Frequent Transit Development Areas (e.g. by enhancing the design and operation of the road network), where appropriate.	Formerly 1.2.9. c)
1.2.26	Continue to develop walking and biking infrastructure programs that prioritize improvements in Urban Centres and Frequent Transit Development Areas.	Urban Centre and FTDA Policy Review Recommendation #5 requests that TransLink enhance the value proposition for identifying FTDAs.

**Metro 2050 TABLE: 3 Guidelines for Urban Centres and FTDAs*****\*This table will replace Table 3 in Metro 2040 page 19\****

Centre Type	Function	General Expectations	Location
<b>Frequent Transit Development Area (FTDA) – All</b> ( <i>applies to both Corridor FTDAs and Station Area FTDAs</i> )	Location for additional medium and higher density transit-oriented development forms and mixed uses in alignment with the Major Transit Growth Corridors.  Location for additional employment growth. Location for affordable rental housing. Location for Major Trip Generating Uses.	Locations for transit-oriented employment and/or housing growth. Walkable and bike-friendly urban design. Managed parking supply. Transit priority measures. Provides appropriate noise, vibration, and air quality mitigation measures. Parks, green spaces, and public open spaces provided. Industrial uses are maintained. Supply of affordable rental housing is protected and expanded.	Located in appropriate locations within the Major Transit Growth Corridors.
<b>Corridor Frequent Transit Development Area</b>	Supports bus-based frequent and rapid transit. Location for medium density housing forms. Location for affordable, particularly affordable rental, housing.	Linear shaped. Minimum density of 35-80 Jobs + People/hectare.	Up to 800m from the Major Transit Growth Corridor centerline.
<b>Station Area Frequent Transit Development Area</b>	Location for office employment uses. Accommodate significant residential and employment growth. Support high-capacity rapid and frequent transit.	Restricted parking supply. Nodal shaped. Minimum density of 60-350 Jobs + People/hectare.	Up to 1200m from an existing SkyTrain or RapidBus Station.
<b>Urban Centre - All</b> ( <i>applies to MTCs, HG-MTCs, RCCs, Surrey Metro Centre, and the Metro Core</i> )	Primary hubs of activity.  Accommodates significant regional residential and employment growth. Provides a range of amenities and services. Major Road Network access. Primary locations for Major Trip Generating Uses.	Complete communities with a balanced mix of housing, employment, services, and amenities. Primary focal points for concentrated growth in the region. High intersection densities. High quality, accessible walking and cycling environment. Provision of transit priority measures and other transit-supportive road infrastructure and operations. Industrial uses are maintained. Parks, green spaces, public open spaces and ecological areas. The supply of affordable rental housing is protected and expanded.	Locations identified on the Regional Land Use Designations map (Map 2)
<b>Municipal Town Centre</b>	Centre of activity for a municipality.  Accommodates municipal residential and employment growth.	Municipally-serving shops, services, uses, and amenities. Medium to high density forms of residential uses. Employment, services, business and commercial activities, typically serving the municipal or local area. Institutional, community, cultural and entertainment uses. High and medium density forms of	Any location on the Major Transit Network.

**Metro 2050 Draft Goal 1 Content Including IAC Comments | Part 5 of 8 | Feb 2021**

		housing (in General Urban only), including affordable housing choices. Services and activities oriented to the local needs of the surrounding communities. Municipal focus for community and cultural activities. Minimum density of 20-150 Jobs + People/hectare.	
<b>High Growth Municipal Town Centre</b>	Centre of activity for a member jurisdiction.  Locations for significant levels of regional employment and residential growth.	Previously a Municipal Town Centre. High Regional Accessibility. Existing SkyTrain Transit Service. Higher density commercial Uses. High density residential uses. Minimum density of 60-200 Jobs + People/hectare.	Maximum 1,200m from a SkyTrain station. Locations in areas that are not at risk from natural hazards. Locations with high regional accessibility to jobs.
<b>Regional City Centre</b>	Sub-regional hub of activity.  Accommodates significant levels of residential and employment growth.	Sub-region serving uses (hospital, post-secondary). Office uses. Existing frequent transit services. Regional-scale employment, services, business and commercial activities. Major institutional, community, cultural and entertainment uses. High and medium density forms of housing (in General Urban only), including affordable housing choices. Provision of transit priority measures and other transit-supportive road infrastructure and operations. Minimum density of 60-350 Jobs + People/hectare.	Any location on the Major Transit Network.
<b>Metro Centre - Surrey</b>	Centre of activity South of the Fraser River.  Accommodates significant levels of regional employment and residential growth.	Existing SkyTrain Transit Service. High degree of cycling connectivity and cycling network completeness. High walkability index score. Office uses. Provision of transit priority measures and other transit-supportive road infrastructure and operations.	Surrey
<b>Metro Centre - Vancouver</b>	The Region's downtown. Region-serving uses (central business district).  Accommodates significant levels of regional employment and residential growth. Principal centre of business, employment, cultural and entertainment activity for the region.	Existing SkyTrain transit service. High degree of cycling connectivity and cycling network completeness. High walkability index score. Office uses. Region-serving uses. Provision of transit priority measures and other transit-supportive road infrastructure and operations.	Vancouver

Table X: Centre Type Reclassification Framework		
*This is a new table to be included in Metro 2050 as part of Strategy 1.2*		
Centre Type	Required Criteria for a new Urban Centre or Urban Centre reclassification	Metro 2050 Amendment Type
In order to become...	The area must meet the following criteria...	And pursue the following amendment process...
<b>Frequent Transit Development Area (FTDA) – All</b>  <i>(applies to Corridor FTDAs and Station Area FTDAs)</i>	<i>Required for reclassification to any FTDA types:</i>  Located within a Major Transit Growth Corridor. Policies supportive of, street, sidewalk and cycling network connectivity. Policies supportive of managed parking supply. Not in a known unmitigated natural hazard area. Official Community Plan (OCP) Land Use Map and policies supportive of infill and intensified residential and/or employment growth.	Type 3 or Regional Context Statement Update
Corridor FTDA	Includes the FTDA polices, and: Located within a Major Transit Growth Corridor (on Map #). Located up to 800m from the corridor centreline. Linear shaped	Type 3 or Regional Context Statement Update
Station Area FTDA	Includes the FTDA polices, and: Located within a Major Transit Growth Corridor. Located up to 1,200m from an existing SkyTrain or RapidBus station. May be nodal shaped.	Type 3 or Regional Context Statement Update
<b>Urban Centre - All</b>  <i>(applies to all Urban Centre types)</i>	<i>Required for reclassification to any Urban Centre type:</i>  Located on the Major Transit Network. Not in a known unmitigated natural hazard area. OCP Land Use Map and policies supportive of infill and intensified residential and employment growth.	
Municipal Town Centre	Includes the Urban Centre polices, and: Formerly a Frequent Transit Development Area. Evidence that the area is a primary hub of activity within a member jurisdiction. Minimum density of 60 Jobs + People / hectare. Minimum area of 40 hectares.	Type 3

**Metro 2050 Draft Goal 1 Content for IAC Review | Part 6 of 8 | January 2021**

High Growth Municipal Town Centre	Includes the Urban Centre polices, and: Existing rapid rail transit service High Regional Accessibility Not in a known unmitigated natural hazard area. Minimum 100 Jobs + People / hectare. Formerly a Municipal Town Centre or FTDA. Minimum area of 40 hectares.	Type 3
Regional City Centre and Metro Centres	Reclassification from any centre type to or from the “Regional City Centre” or to “Metro Centre” types is not contemplated by the regional growth strategy.	

## Metro 2050 Draft Goal 1 Content Including IAC Comments | Attachment 7 | Feb 2021

Goal: 1		
Strategy 1.3 (formerly Metro 2040 Strategy 4.2)		
#	Proposed Metro 2050 Text	Rationale for Change
1.3	Develop resilient, healthy, connected and complete communities with a range of services and amenities.	Resiliency added as a result of policy work. 'Healthy' added to be consistent with policies below, and 'connected' added to recognize the importance of social cohesion, from IAC input.
	<b>Strategy Rationale:</b> Creating complete communities, especially in the region's Urban Centres, with a mix of uses and affordable services and amenities, allows residents to meet most of their daily needs without leaving their neighbourhood. This supports trip reduction, healthier living, climate action, more equitable access to the key amenities that support a high quality of life, and creates resilient places with inclusion and connection.	Original text from Goal 4 Preamble related to Complete Communities. Updated to better describe updated Strategy. "affordable" and "creating resilient places with inclusion and connection" added, from IAC input.
	<b>Metro Vancouver will:</b>	
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: <ul style="list-style-type: none"> <li>• promote greater local access to affordable community services and child care, healthy food, and public spaces (including regional parks and greenways);</li> <li>• improve climate action, social equity, universal accessibility, and inclusive engagement; and;</li> <li>• encourage the provision and enhancement of urban green spaces in new and established neighbourhoods.</li> </ul>	"Affordable housing" now in Goal 4 so removed from this policy. There is no intention to provide regional strategy on culture, parks or recreation. Regional strategy, research and best practices added for: Current: regional parks and greenways, climate action, equity in regional growth management New: universal accessibility and inclusive engagement. last bullet is an Environment Policy Review Recommendation (for this



		strategy). “Connected”, “affordable community services”, “healthy” food, and ‘established neighbourhoods’ added from IAC input.
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.	Clarify who advice and assistance is for. Added GHG, community service, health and social equity aspects to complement air quality.
1.3.3	Collaborate with health authorities, academic institutions and other researchers to share best practices, research, data, and tools that can advance land use policies to: <ul style="list-style-type: none"> <li>• ensure neighbourhoods are designed for walking, cycling, rolling and social activities to promote positive mental and physical health;</li> <li>• meet community social needs and priorities;</li> <li>• reduce community exposure to climate change and air quality impacts, especially communities that are disproportionately impacted; and</li> <li>• increase equitable access and exposure to public spaces through urban green space enhancement / and retention opportunities.</li> </ul>	2nd bullet Environment Policy Review Recommendation. “Other researches”, “meet community social needs and priorities”, “air quality”, and “disproportionally impacted” added from IAC input.
1.3.4	Measure and monitor access to community services and amenities, particularly Urban Centres and Frequent Transit Development Areas (FTDAs).	Adding Performance Measures
1.3.5	Advocate to the Federal Government and the Province to ensure that growing communities are served appropriately and in a timely manner with social amenities, health, schools and educational opportunities, to avoid inequities in service levels between communities in the region.	Added to address concerns from stakeholders and RPL. “to avoid inequities...” added from IAC input.
1.3.6	Advocate to the Federal Government and the Province to ensure that community, arts, cultural, recreational, institutional, social services, health and education facilities funded or built by them are located in Urban Centres or areas with good access to transit.	Combines actions 4.2.5 and 4.2.6. ‘Agencies and authorities’ moved to glossary definition of “the province”. “Health” added and “wherever possible” deleted, from IAC input.

**Metro 2050 Draft Goal 1 Content Including IAC Comments | Attachment 7 | Feb 2021**

	<b>Member Jurisdictions will:</b>	
1.3.7	Adopt Regional Context Statements that:	These policies now to be referenced in Regional Context Statements going forward. It was optional in <i>Metro 2040</i> .
a)	support compact, mixed use, transit, walking, cycling and rolling-oriented communities;	'rolling' added to be more inclusive of mobility aids.
b)	locate and support community, arts, cultural, recreational, institutional, medical/health, social service, education and child care facilities, and locally-serving retail uses in Urban Centres or areas with good access to transit;	Supporting child care and local retail added.
c)	provide public spaces and other place-making amenities and facilities (e.g. community gardens, playgrounds, gathering places, etc.) in new and established neighbourhoods, for all ages, abilities and seasons, to support social connections and engagement.	Examples provided for clarity. "connection" more important than "interaction" (from stakeholders). "seasons" added from IAC input.
d)	<p>respond to health and climate change-related risks by providing equitable access to:</p> <p>i) recreation facilities;</p> <p>ii) green spaces and public spaces (e.g. parks, trails, urban forests, public squares, etc.); and</p> <p>iii) safe and inviting walking, cycling, and rolling environments, including resting spaces with tree canopy coverage, for all ages and abilities;</p>	<p>Greenspace broadened to include urban forest.</p> <p>Including of Climate change related risks, access to, and examples, from Environment Policy Review Recommendations.</p> <p>"resting spaces with tree canopy coverage" added from IAC input.</p>
e)	support the inclusion of community gardens (at-grade, rooftop or on balconies), grocery stores and farmers' markets to support food security, and local production, distribution and consumption of healthy food, in particular where they are easily accessible to housing and transit services;	<p>Harsh climate of green roofs rarely used for growing food, so removed.</p> <p>"Healthy food retailers" difficult to define – revised to 'healthy food'</p>
f)	ensure that the preparation of new neighbourhood and area plans considers the mitigation of significant negative social and health impacts, such as through the use of formal health and social impact methods in neighbourhood design and major infrastructure investments; and	Recommendation 4: encourage members to prepare HIAs and SIAs for new local plans. Requirement broadened to be more flexible, from IAC input.
g)	provide design guidance for existing and new neighbourhoods to promote social connections, universal accessibility, crime prevention through environmental design, and inclusivity while	Recommendation 5 – Ensure the built form of our communities helps build community for

	considering the impacts of these strategies on identified marginalized members of the community.	everyone, promotes safety and facilitates mobility for those experiencing disabilities. “Considering the impacts... on marginalized members...” added from IAC input.
h)		4.2.h) deleted Remove Local Centres (and map 11) – not mapped consistently and weak policy.
i)		4.2.i) deleted as Local Centres are not considered regionally significant.
4.2.5 and 4.2.6		4.2.5 and 4.2.6 combined and moved to 1.3.6
	<b>TransLink will:</b>	
1.3.8	Provide equitable and accessible levels of transit service to communities and employment areas.	New policy to support growth outside of urban centres and FTDA's with transit 'Equitable' and 'accessible' - perhaps we can get TL to confirm wording that is making its way into the RTS to reinforce T2050 work. “Workplaces” replaced with “employment areas” from IAC input.
1.3.9	Continue to improve sustainable mobility options for neighbourhoods outside the Urban Centres and FTDA's within the General Urban Land Use designation as shown on Map 2.	Formerly 4.2.7 but references to Local Centres and Special Employment Areas has been removed.

Goal: 1 Create a Compact Urban Area		
Strategy 1.4		
#	Proposed Metro 2050 Text	Rationale for Change
1.4	<b>Protect Rural areas from urban development</b>	
	<b>Strategy Rationale:</b> Rural designated lands are located outside the Urban Containment Boundary and are not intended for urban forms of development. Containing growth ensures the protection of natural and agricultural areas, and the efficient and cost effective provision of sewerage, transit, and other community services. The inherent benefits of urban containment also support reduced greenhouse gas emissions and increases opportunities for natural carbon sinks.	Adding a new “strategy rationale” section after each strategy will help explain the intention of subsequent policies. Additional edits made as suggested by Maple Ridge The term ‘natural carbon sinks’ comes from AQ staff.
	<b>Metro Vancouver will:</b>	
1.4.1	Direct the Greater Vancouver Sewerage and Drainage District (GVS&DD) to not allow connections to regional sewerage services to lands with a Rural regional land use designation as identified on the Regional Land Use Designations Map (Map 2). Notwithstanding this general rule, in the exceptional circumstances specified below, the MVRD Board will advise the GVS&DD Board that it may consider such a connection for existing development or for new development where, in the MVRD Board’s opinion, that new development is consistent with the Rural regional land use designation and where the MVRD Board determines either:	Update GVRD to MVRD, no other changes
a)	that the connection to regional sewerage services is the only reasonable means of preventing or alleviating a public health or environmental contamination risk; or	No change
b)	that the connection to regional sewerage services would have no significant impact on the strategy to protect lands with a Rural regional land use designation from urban development.	Minor deletion. No change
1.4.2	Accept Regional Context Statements that protect lands with a Rural regional land use designation from urban development and that meet or work towards Action 1.4.3.	Changed terminology to ‘lands with a Rural designation’ to be more accurate
	<b>Member Jurisdictions will:</b>	
1.4.3	Adopt Regional Context Statements that:	

**Metro 2050 Draft Goal 1 Content Including IAC Comments | Part 8 of 8 | Feb 2021**

a)	identify the Rural areas and their boundaries on a map generally consistent with the Regional Land Use Designations map (Map 2);	Changed terminology to 'lands with a Rural designation' to be more accurate
b)	limit development to a scale, form, and density consistent with the intent for Rural land use designation and that is compatible with on-site sewer servicing;	No change
c)	specify the allowable density and form, consistent with Action 1.4.1, for land uses within the Rural regional land use designation;	The word "regional" added
d)	support agricultural uses within the Agricultural Land Reserve, and where appropriate, outside of the Agricultural Land Reserve.	No change
e)	support the protection, enhancement, restoration, and expansion of ecosystems as defined in the Sensitive Ecosystems Inventory Map (Map xx) to maintain ecological integrity, enable ecosystem connectivity, increase natural carbon sinks and adaptation to the impacts of climate change.	New policy asks municipalities to protect sensitive ecosystems was recommended in the Policy Review. Added the word 'expansion' (IAC request) and removed the word 'sensitive' as requested by Laurie.

**Metro 2050 Draft Goal 2 Content - Awaiting IAC Feedback | February 2021**

<b>GOAL 2 - Support a Sustainable Economy</b>	
<b>PREAMBLE (p25)</b>	
<b>Proposed Metro 2040 Text</b>	<b>Rationale for Change</b>
The regional growth strategy leverages the region's existing economic strengths to provide for a prosperous future by supporting diverse commercial and industrial sectors, employment growth, ensuring well designed regional places with an emphasis on public space and transit, and recognizing the region's role as a key provincial and national gateway. The regional growth strategy supports a sustainable economy through its regional land use, urban design, and transportation policies and strategies.	Minor wording changes.
Urban Centres distributed throughout the region provide opportunities for commercial activities, services, and employment uses to be located close to where people live, and enable economic and transportation efficiencies. The design of these centres supports a strong sense of place, a public realm that promotes a positive civic image, and ensures a high quality of life through the provision of amenities and diversity of housing types. Policies discourage the dispersal of major employment and major trip-generating uses outside of Urban Centres and Frequent Transit Development Areas.	Minor wording changes.
Ongoing market pressure to convert Industrial lands to office, retail, residential, and other uses, coupled with increasing demands for land for industrial activities as the population and economy grow, has resulted in a critically diminished supply of industrial land in the region. Aside from the regional, provincial, and national serving industries in Metro Vancouver, many small to medium sized industries provide for the day-to-day needs of the region's population, such as repair and servicing activities, e-commerce, and renovation and construction functions. Additional lands are needed for container storage, freight forwarding, warehouses, and other distribution functions that support the regional economy.	Minor wording changes.
Meeting the needs of both a growing regional economy and an expanding international gateway for trade requires an adequate supply of serviced industrial lands. Preserving the region's industrial lands supports existing businesses by allowing them to expand and supports new ones to locate in the region, all the while avoiding long transportation distances, business inefficiencies, and higher greenhouse gas emissions. In response to the vulnerability of industrial land, policies are included to protect and intensify the use of the limited supply in the region. Efforts that encourage industrial densification and intensification provide a range of benefits such as: more efficient use of lands and resources; reduced pressures on other lands; improved capacity for businesses to grow to create employment opportunities; increased job opportunities; greater clustering of co-located operations; and a more efficient transportation system.	<p>Add additional reference to GHGs associated with transportation.</p> <p>Added references to growing importance of industrial densification / intensification.</p>

There are some economic activities that are not traditional industrial uses that tend to not be readily accommodated or economically viable in Urban Centres or Frequent Transit Development Areas. The regional growth strategy provides for these activities to be accommodated in Employment areas, which are intended to complement the planned function of Urban Centres, Frequent Transit Development Areas, and Industrial lands.	Minor wording changes.
Major educational and medical institutions in this region also have a vital role in the economy, as they have key linkages with many sectors, provide and support research and innovation, and are incubators for new industries.	Remove specific institutions by name, as there are many that are missed.  Map 11 of local centres, etc to be deleted from RGS. Delete redundancy
<b>Agriculture is an important sector of the region's economy and a critical component of the local food system. The agricultural industry is dependent on the protection and availability of agricultural land for the production of food and other goods and services. Effective legislation and an economically viable agricultural sector are important ways to protect agricultural land for future generations.</b>  <b>Agricultural production is vulnerable to the impacts of climate change. Projected changes in temperature, precipitation, flooding and extreme weather events will profoundly affect agriculture production. Policies focus on increased resilience and the long term protection of land for food production, edge planning, new drainage and irrigation infrastructure, and climate adaptation. This strategy also seeks to protect agricultural land for local production and support the economic viability of the agricultural sector.</b>	Expansion of references to agricultural lands and activities.  Add climate lens.
<b>Strategies to achieve this goal are:</b>	
2.1 Promote land development patterns that support a diverse regional economy, well designed built form and public realm and employment opportunities close to where people live.	
2.2 Protect the supply, and enhance the efficient utilization, of industrial land.	Edit to the strategy title in order to profile the importance of industrial intensification / densification.
2.3 Protect the supply of agricultural land and strengthen agricultural viability.	The emphasis on food production was removed because it is beyond the ability and authority of local governments.

Goal: 2 Support a Sustainable Economy		
Strategy: 2.1		
#	Proposed Metro 2050 Text	Rationale for Change
2.1	Promote land development patterns that support a diverse regional economy and employment opportunities close to where people live	
n/a	Strategy Rationale: Economic and employment activities, such as post-secondary institutions, shopping streets, retail centres, business parks, transportation terminals and associated infrastructure, complement employment activities in Urban Centres (Strategy 1.2) and industrial uses on Industrial lands (Strategy 2.2). These businesses support the region's economy and population, and rely on and have implications for the transportation network and the design of neighbourhoods. Locating jobs close to where people live and near the transit network supports the creation of complete communities (Strategy 1.3), reduces social inequities in the region, and helps to reduce energy consumption and greenhouse gas emissions through reduced vehicle travel and increased active transportation.	Add new strategy rationale section.
	<b>Metro Vancouver will:</b>	
2.1.1	Provide regional utility infrastructure to support the region's economic functions and to support efficient employment and settlement patterns.	
2.1.2	Work with the Federal Government, the Province, member jurisdictions, First Nations, and the private sector to advance shared economic prosperity and resilience through the Regional Economic Prosperity Service to attract strategic investment to the region.	New Policy: Add reference to new Metro Vancouver regional economic prosperity service / function.
2.1.3	Work with the Federal Government, the Province and member jurisdictions to explore:	
a)	fiscal measures to reinforce the attraction of investment and employment opportunities to Urban Centres, Frequent Transit Development Areas, and lands with an Industrial or Employment regional land use designation; such employment opportunities should be consistent with the intention of the underlying regional land use designation.	Add specificity of references, so as to acknowledge diverse range of intended locations.
b)	fiscal reform to ensure that the property tax system supports sound land use decisions.	Refine and simplify language.
2.1.4	Accept Regional Context Statements that supports economic activity and an urban form designed to be consistent with its context in: Urban Centres, Frequent Transit Development Areas, Industrial, Employment areas, ports and airports, and that meet or work towards Action 2.1.10.	Delete reference to Special Employment Areas, as Map 11 with Special Employment areas to be deleted. Add reference to urban form.
2.1.5	Advocate to the Federal Government, the Province, and TransLink to develop and operate transportation infrastructure that supports the region's economic activities in Urban Centres, Frequent Transit Development Areas, Industrial lands, Employment lands, ports and airports.	Edit for clarity.
2.1.6	Advocate that airport authorities:	Add reference to further address climate change matters, using new climate change language.



	<ul style="list-style-type: none"> <li>a) encourage the use of surplus airport lands for industrial activities, and where appropriate, discourage non-airport related commercial development and any expansion beyond the Industrial and Employment areas specified on Map 6;</li> <li>b) consider ways to reduce greenhouse gas emissions; and</li> <li>c) develop strategies to adapt to climate change impacts and natural hazard risks.</li> </ul>	
2.1.7	<p>Advocate that the Port of Vancouver:</p> <ul style="list-style-type: none"> <li>a) encourage the use of surplus port lands for industrial activities, and where appropriate, discourage non-port related commercial development and any expansion beyond the Industrial and Employment areas specified on Map 6;</li> <li>b) consider ways to reduce greenhouse gas emissions; and</li> <li>c) develop strategies to adapt to climate change impacts and natural hazard risks.</li> </ul>	Add reference to further address climate change matters, using new climate change language.
		Delete former section 2.1.8. Has been replaced with the reference to Regional Prosperity Service.
2.1.8	Advocate that the Fraser Valley Regional District and the Squamish-Lillooet Regional District collaborate with Metro Vancouver on shared initiatives related to economy, transportation, and other related matters.	Formerly 2.1.9. Relocated. Add further detail.
2.1.9	Advocate that the Federal Government and the Province support existing and new industries in the region through such means as investment, procurement strategies, tax incentives, skill development, and small business loan programs.	Added to further address economic development initiatives.
	<b>Member Jurisdictions will:</b>	
2.1.10	Adopt Regional Context Statements that:	
a)	include policies to support appropriate economic activities and a built form designed to be consistent with its context, in Urban Centres, Frequent Transit Development Areas, Industrial lands, and Employment lands;	Change term throughout from 'Mixed Employment' to 'Employment' designation. Add reference to built form design.
b)	support the development and expansion of large-scale office and retail uses in Urban Centres, and local-scale uses in Frequent Transit Development Areas through policies such as: zoning that reserves land for office uses, density bonus provisions to encourage office development, variable development cost charges, and/or other financial incentives; and	Reference FTDA's as locations for local scale development relative to Urban Centres with larger scale development. FTDA's have opportunities (at a lower scale) for office and employment development.
c)	include policies that discourage the development and expansion of major commercial and institutional land uses outside of Urban Centres and Frequent Transit Development Areas.	Note: 'Major uses' to be defined by municipalities for their local context in RCSs.
		Formerly Metro 2040 2.1.4 d). This was deleted, as Map 11 with Special Employment Areas to be deleted. Planning guidance for major institutions mentioned elsewhere.

## Metro 2050 Draft Goal 2 Content Awaiting IAC Feedback | February 2021

Goal: 2		
Strategy: 2.2		
#	Proposed Metro 2050 Text	Rationale for Change
1	<b>Goal: Support a Sustainable Economy</b>	
2.2	<b>Strategy: Protect the supply, and enhance the efficient use, of industrial land</b>	Edit title in order to better profile the importance of industrial lands intensification / densification.
n/a	Strategy Rationale: Industrial lands are critical to supporting a diverse, resilient economy – one that supports businesses and residents by securing land for economic development and jobs within the region, and reducing costs for commuting and the transportation of goods. In response to the vulnerability of industrial land, policies are included to protect and appropriately use the region's limited supply of industrial land while also considering the future of work and the mitigation and impacts of climate change.	Add new rationale section
	<b>Metro Vancouver will:</b>	
2.2.1	Monitor the supply, demand, and utilization of industrial land with the objective of assessing whether there is sufficient capacity to meet the needs of the growing regional economy.	Addition to reiterate the importance of industrial intensification.
2.2.2	Work with the Province, member jurisdictions, and other agencies to investigate industrial taxation rates and policies that support industrial development, efficient use of industrial land, and industrial densification.	Addition to reiterate the importance of industrial intensification / efficient use of lands.
2.2.3	Prepare an implementation guideline for setting criteria for industrial lands to support new growth planning initiatives, design of industrial forms, guidance on setting criteria for trade-oriented lands, and other policy measures.	Add new section to prepare future implementation guidelines
2.2.4	Seek input from TransLink, the Port of Vancouver, the Vancouver International Airport Authority, the Ministry of Transportation and Infrastructure, and/or the Agricultural Land Commission on any proposed Regional Context Statement or regional growth strategy amendments for Industrial and Employment lands as appropriate.	Relocate section and adapt / update policy from 'action requested of other governments' to Metro Vancouver advocacy action.
2.2.5	Advocate to the Federal Government and the Province to coordinate transportation infrastructure and service investments that support the efficient movement of goods and people for industrial and employment operations, and considers the Regional Goods Movement Strategy and the Regional Truck Route Network.	Add new goods movement infrastructure reference, based on Regional Industrial Lands Strategy.

**Metro 2050 Draft Goal 2 Content Awaiting IAC Feedback | February 2021**

2.2.6	Advocate to the Federal Government and the Province to support initiatives and infrastructure investments that: a) introduce more energy efficient equipment operations and vehicles; b) reduce distances travelled by commercial vehicles; c) accelerate the movement of goods by energy efficient modes; and d) shift freight activity out of peak congestion periods.	Add new references to energy performance of industrial related transportation activities.
2.2.7	Advocate to the Federal Government, the Province, and relevant agencies to enhance data collection and sharing related to industrial, employment, transportation, and economic matters in support of the efficient use of industrial lands in the region.	Add referenced to enhanced data sharing between agencies.
2.2.8	Accept Regional Context Statements that include provisions that protect and support the ongoing economic viability of industrial activities and that meet or work towards the strategies set out in 2.2.9.	
	<b>Member jurisdictions will:</b>	
2.2.9	Adopt Regional Context Statements that:	
a)	identify the Industrial and Employment areas and their boundaries on a map generally consistent with the Industrial and Employment Areas map (Map 6);	Combine reference to Industrial and Employment maps into one reference.
b)	identify Trade-Oriented lands with a defined set of permitted uses that support inter-regional, provincial, national, and international trade (e.g. logistics, warehouses, distribution centres, transportation and intermodal terminals) and location needs (e.g. large and flat sites, proximity to highway, port, or rail infrastructure) on a map consistent with the goals in the regional growth strategy. Strata tenure and/or small lot subdivisions on these lands should not be permitted.	Add new trade-oriented lands overlay, from the Regional Industrial Lands Strategy. For new trade oriented lands overlay, description / criteria that municipalities can use when developing policies that can ultimately be included in Regional Context Statements.
c)	include policies for Industrial areas that:	
i)	consistently define, support, and protect industrial uses in municipal plans and bylaws, and ensure that non-industrial uses are not permitted;	Add more specificity about permitting uses.

**Metro 2050 Draft Goal 2 Content Awaiting IAC Feedback | February 2021**

ii)	support appropriate and related accessory uses, such as limited-scale ancillary commercial spaces, and caretaker units;	Add more specificity and limitations to allowable non industrial / accessory uses.
iii)	exclude uses that are not consistent with the intent of industrial areas and not supportive of industrial activities, such as medium and large format retail uses, residential uses, and stand-alone office uses, other than ancillary uses, where deemed necessary;	Editing refinements.
iv)	encourage improved utilization and increased intensification/densification of industrial areas for industrial activities, including the removing of any outdated municipal policies or regulatory barriers related to development form and density;	Add more specificity about permitting uses and densities.
v)	review and update parking and loading requirements to reflect changes in industrial forms/activities, ensure better integration with the surrounding character, and improvements to transit service, in an effort to avoid the oversupply of parking;	Add municipal action as per Regional Industrial Lands Strategy about parking.
vi)	explore municipal industrial strategies or initiatives that support economic growth objectives with linkages to land use planning;	Add municipal action as per Regional Industrial Lands Strategy
vii)	provide infrastructure and services in support of existing and expanding industrial activities;	Add municipal action as per Regional Industrial Lands Strategy
viii)	introduces land use policies through area plans for rail-oriented, waterfront(s), and trade-oriented areas that may contain unique industrial uses;	Add municipal action as per Regional Industrial Lands Strategy
ix)	consider the preparation of urban design guidelines for industrial area 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	Add municipal action as per Regional Industrial Lands Strategy
x)	do not permit strata tenure and/or small lot subdivisions on identified Trade-Oriented lands.	Add municipal action as per Regional Industrial Lands Strategy
		Delete; combined with other section.

**Metro 2050 Draft Goal 2 Content Awaiting IAC Feedback | February 2021**

d)	include policies for Employment areas that:	
i)	support a mix of industrial, small scale commercial and office, and other related employment uses, while maintaining support for the light industrial capacity of the area, including opportunities for the potential densification/intensification of industrial activities, where appropriate;	Edited for clarity.
ii)	allow large and medium format retail, where appropriate, provided that such development will not undermine the broad objectives of the regional growth strategy;	
iii)	support the objective of concentrating larger-scale commercial, higher density forms of employment, and other major trip-generating uses in Urban Centres, and local-scale uses in Frequent Transit Development Areas;	Add specific reference to scale of uses.
iv)	support higher density forms of commercial and light industrial development where Employment areas are located within Urban Centres or Frequent Transit Development Areas, and permit employment and service activities consistent with the intent of Urban Centres or Frequent Transit Development Areas;	Clarify that some amount / type of industrial use is allowed on Employment lands.
v)	do not permit residential uses, except for an accessory caretaker unit;	
vi)	notwithstanding 2.2.9 (d)(v), permit residential uses (emphasis on affordable rental) on lands located within Urban Centres or Frequent Transit Development Areas and within 200 metres of a rapid transit station. The residential uses should be on the upper floors of new office and light industrial developments and subject to the consideration of municipal objectives, local context, and urban design, and achieve other objectives of the regional growth strategy.	New provision, based on Regional Industrial Lands Strategy. Change to permit such higher density and value uses by rapid transit stations and only in Urban Centres or FTDA's.
e)	include policies to assist existing and new businesses in reducing their greenhouse gas emissions, maximize energy efficiency, and mitigate any impacts on sensitive and modified ecosystems; and	Expand to further address climate change matters.
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.	Add to further address climate change matters.

Goal: 2 Support a Sustainable Economy		
Strategy 2.3		
#	Proposed Metro 2050 Text	Rationale for Change
2.3	Protect the supply of agricultural land and <b>strengthen</b> agricultural viability	The emphasis on food production was removed because it is beyond the ability and authority of local governments.
	<b>Strategy Rationale:</b> Protecting land for agricultural production is an ongoing challenge that impacts the viability of the agricultural industry, yet is essential for a resilient region. Improved multi-jurisdictional collaboration that recognizes the diverse values of agricultural land and the importance of climate change adaptation while restricting other land uses in agricultural areas is necessary. Equally important is the need to strengthen the economic viability of agriculture operations by encouraging new markets and expanding the distribution of local foods.	Adding a new “strategy rationale” to help explain the intention the subsequent policies seek to achieve.
	<b>Metro Vancouver will:</b>	
2.3.1	Direct the Greater Vancouver Sewerage and Drainage District to not allow connections to regional sewerage services for lands with an Agricultural regional land use designation. Notwithstanding this general rule, in the exceptional circumstances specified below, the MVRD Board will advise the Greater Vancouver Sewerage and Drainage District Board that it may consider such a connection for existing or for new development where, in the MVRD Board’s discretion, the use is consistent with the underlying Agricultural regional land use designation and where the MVRD Board determines either:	Updated names of the boards
a)	that the connection to regional sewerage services is the only reasonable means of preventing or alleviating a public health or environmental contamination risk; or	
b)	that the connection to regional sewerage services would have no significant impact on the regional growth strategy to protect the supply of agricultural land and strengthening agricultural viability.	
2.3.2	Monitor the status of agricultural land in the region including local agriculture production and other public benefits such as the provision of ecosystem services in collaboration with the Province and the Agricultural Land Commission.	This change better reflects Metro Vancouver’s existing data collection/analysis role and incorporates

		other public benefits derived from agricultural land.
2.3.3	Identify and pursue strategies and actions to increase actively farmed agricultural land, strengthen the economic viability of agriculture, and minimize conflicts between agriculture and other land uses, within or adjacent to agricultural land, in collaboration with the Province and the Agricultural Land Commission.	Adds more flexibility on the types of actions to pursue and elevates the importance of preventing conflicts with agriculture.
2.3.4	Work with the Agricultural Land Commission to protect the region's agricultural land base and not amend the Agricultural or Rural regional land use designation of a site if it is still part of the Agricultural Land Reserve, unless the Agricultural Land Commission has provided written confirmation that the parcel is not subject to the <i>Agricultural Land Commission Act</i> .	Addresses questions and an approach for parcels that are less than 0.8 ha and not subject to the ALC Act. Some small parcels, while not subject to the ALC Act are important to retain because they can help buffer the negative impacts of development adjacent to the ALR (i.e. Richmond).
2.3.5	Undertake agricultural awareness activities that promote the importance of the agricultural industry, protecting agricultural land, and the value of local agricultural products and experiences, in partnership with other agencies and organizations.	New action that recognizes an existing role of Metro Vancouver.
2.3.6	Advocate to all levels of government the necessity of agriculture impact assessments and mitigation requirements when transportation, utility, and recreational infrastructure is being planned, developed or operated in agricultural areas.	Advocacy action to help avoid a broad range of unintended negative impacts from other land uses on local agriculture (formerly 2.3.7).
2.3.7	Advocate to the Province for farm property tax reform that encourages more actively farmed land and enables secure land tenure for new and established farmers.	Advocacy action to address the inequality that exists when new and future farmers are unable to access agricultural land (formerly 2.3.9).
2.3.8	Advocate to the Province to increase agricultural producers' knowledge and adoption of innovative practices for advancing agriculture economic development, and adaptation to climate change and natural hazards impacts as defined in the Regional Growth Strategy.	Advocacy action for more knowledge transfer, which is essential to advance innovation for agri- economic development (formerly 2.3.9) and climate change adaptation.

2.3.9	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.	Advocacy action (formerly 2.3.11) with the addition of reducing greenhouse gases, improving soil health and maintaining ecosystem services.
2.3.10	Advocate to the Province for changes to the <i>Local Government Act</i> to require that Official Community Plans prioritize the need for agricultural land, similar to how the long term needs are considered for residential, commercial, and industrial lands.	New advocacy action that emerged during engagement with municipalities.
2.3.11	Advocate to the Province and in coordination with the Agricultural Land Commission, that the conditions and/or criteria are established to ensure the appropriate agri-industrial uses, if any, are permitted in the Agricultural Land Reserve.	New advocacy policy suggested from the from the Regional Industrial Lands Strategy
2.3.12	Accept Regional Context Statements that protect the region's supply of agricultural land and strengthen agricultural viability that meet or work towards the provisions set out in section 2.3.13.	Change coincides with revised wording for Strategy 2.3
	<b>Member Jurisdictions will:</b>	
2.3.13	Adopt Regional Context Statements that:	
a)	specify the Agricultural areas and their boundaries within their jurisdiction on a map consistent with the Agricultural Areas map (Map 7);	
b)	consider policies and programs that increase markets and the distribution of local food in urban areas to strengthen the viability of agriculture and increase availability of local food for all residents;	New policy to incorporate actions not directly connected to the Agricultural designation and may involve all member jurisdictions
c)	include policies that protect the supply of agricultural land and strengthen agriculture viability including those that:	Change coincides with revised wording for Strategy 2.3
i)	assign appropriate land use designations to protect agricultural land for future generations and discourage land uses in agricultural areas that do not directly support and strengthen agricultural viability;	Inter-generational equity is supported when future generations of farmers have



		access to agricultural land for food production.
ii)	encourage the consolidation of small parcels and discourage the subdivision and fragmentation of agricultural land;	Ministry of Agriculture data shows that small parcels are less likely to be farmed.
iii)	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, in collaboration with other governments and agencies;	Added an action to address climate change impacts on agricultural land that involves ongoing water and flood management.
iv)	protect the integrity of agricultural land by requiring edge planning along the Urban Containment Boundary and adjacent to agricultural operations through activities such as screening, physical buffers, roads, or Development Permit area requirements;	Greater emphasis on edge planning to reduce conflicts between agriculture and their neighbours and to prevent the extension of other land uses into agricultural areas.
v)	demonstrate support for economic development opportunities for agricultural operations that are farm related uses, benefit from close proximity to farms, and enhance primary agricultural production;	Important to connect economic development on agricultural land to agricultural production. Farmers markets and urban agriculture can be addressed under 2.3.12 b)
vi)	align Official Community Plan policies and zoning regulations with the Minister's Bylaw Standards and Agricultural Land Commission legislation and regulations;	New action to ensure the effectiveness of new provincial legislation, which is currently limited when zoning bylaws to protect agricultural land are not updated to align with provincial legislation, and this situation causes confusion about appropriate uses in agricultural areas.
2.3.14	In partnership with other agencies and organizations, support agricultural awareness and promote the importance of the agricultural industry, the importance of protecting agricultural land, and the value of local agricultural products and experiences.	Updated the language about educational programs on agriculture.

		No longer including actions requested of other governments – these items are now Metro Vancouver advocacy actions 2.3.6 to 2.3.10
		Formerly <i>Metro 2040</i> 2.3.7. Moved and reframed to an advocacy action under section 2.3.6. Instead of just avoiding fragmentation of agricultural areas, the emphasis is now on impact assessments.
		Formerly <i>Metro 2040</i> 2.3.8. An advocacy role is not necessary. Metro Vancouver has a MOU regarding the implementation of <i>Metro 2040</i> with the ALC dated Sept 2017.
		Formerly <i>Metro 2040</i> 2.3.9. Moved to an advocacy action with more emphasis on farm property tax reform (under section 2.3.7) and for providing education to farmers (under section 2.3.8).
		Formerly <i>Metro 2040</i> 2.3.10. No further action required as this issue was addressed with new provincial legislation.
		Formerly <i>Metro 2040</i> 2.3.11. Moved to an advocacy action under section 2.3.9

---

To: Regional Planning Committee

From: Erin Rennie, Senior Planner, Regional Planning and Housing Services

Date: February 19, 2021 Meeting Date: March 5, 2021

Subject: **Social Equity and Regional Growth Study**

---

### **RECOMMENDATION**

That the MVRD Board receive for information the report dated February 19, 2021, titled “Social Equity and Regional Growth Study”.

---

### **EXECUTIVE SUMMARY**

This report conveys the results of the *Social Equity & Regional Growth Study: Considerations for integrating social equity into regional planning and Metro 2050*. The purpose of this study was to explore and help Metro Vancouver staff develop a greater understanding of social equity considerations in the region as they relate to regional planning efforts, and to develop guidance on how best to evaluate the policies of the regional growth strategy from a social equity perspective.

The study includes:

- a set of 49 social equity indicator maps,
- an Inequity Index map which combines all the indicators into a single index,
- a refined definition of social equity,
- a set of recommended areas for priority action, and
- recommended performance measures to use in *Metro 2050*.

Additionally, a suggested Social Equity Analysis Tool was prepared as part of the project, and staff will evaluate the tool in terms of effectiveness and assess potential future use.

### **PURPOSE**

The purpose of this report is to convey the results of the *Social Equity & Regional Growth Study: Considerations for integrating social equity into regional planning and Metro 2050* to the Regional Planning Committee and Board and to provide a summary of opportunities for integrating the Study’s findings into *Metro 2050* and other future regional planning work.

### **BACKGROUND**

On May 1, 2020 the Regional Planning Committee received a report titled “Social Equity in Regional Growth Management Phase 2 Study – Project Initiation” outlining the scope of a study that would consider the concept of social equity as it relates to regional growth management (Reference 1). Building on the first phase of the social equity work, this second phase was intended to focus on data gathering, stakeholder engagement, and the development of recommendations for the development of a social equity analysis tool for *Metro 2050* (Reference 2).

## **STUDY OVERVIEW**

The purpose of the *Social Equity and Regional Growth Study* is to help to develop a greater understanding of social equity considerations related to regional planning, and provide guidance on how best to analyze the policies of *Metro 2040* and those of *Metro 2050*, the update to the regional growth strategy, from a social equity perspective.

The objectives of the Study were to:

1. measure and quantify disparity in the region in relation to growth management;
2. identify and engage social equity context experts (individuals who have gained knowledge from their personal involvement and lived experiences of inequity) in a process for Metro Vancouver to better understand local social equity definitions and experiences of inequity in relation to growth management;
3. provide; data reflecting social equity from across the region, a definition for social equity, and a set of recommended performance measures; and
4. provide a social equity analysis tool that can assist with the evaluation of policies in *Metro 2050*.

Keltie Craig Consulting, in association with Luna Aixin Consulting, Kevin Karpenda, and Licker Geospatial, was hired to conduct the study. TransLink contracted the same consultant to conduct a parallel study that involved many of the same data gathering activities but different output due to TransLink's need for a different analysis and reporting and focus on transportation equity. Although not a formal partnership, TransLink, Metro Vancouver, and the consultant met regularly to guide the study process under the overarching commitment to ensure close alignment between *Metro 2050* and *Transport 2050*.

## **Data Gathering Activities**

The two principal data gathering activities in the Study were:

1. Develop an Inequity Data Baseline Report for Metro Vancouver: This involved selecting a series of indicators relevant to the relationship between growth management and social equity. The indicators were then combined to create an "Inequity Index Map", which informed a recommendation on key performance indicators which could be a part of Metro 2050's performance monitoring program.
2. Stakeholder Engagement: This involved convening social equity context experts in a series of facilitated (virtual) dialogue sessions. The conversations focused on the lived experiences of the participants, which informed a definition of "social equity."

## **Stakeholder Engagement**

The 'Listening and Learning' component of the Study presents a series of themes that emerged from the dialogue sessions. 17 individuals from a wide range of backgrounds and identities (including Indigenous) participated in the sessions. The sessions focused on:

1. defining social equity;
2. identifying where and how inequities manifest in day-to-day experience;
3. describing what a 'socially equitable' region might mean; and

4. reviewing and reflecting on the Social Inequity Index map (as described above).

Some of the key themes from the dialogue sessions that relate to *Metro 2050* include:

- indigenous social equity needs to be treated distinctly;
- the effects of displacement from redevelopment threaten community connections;
- there is a need for a diversity and mix of housing types in neighbourhoods across the region;
- retail space affordability and availability impacts equity-denied populations;
- transit-reliant populations face isolation, delays, and fewer opportunities in parts of the region with lower transit frequency and connectivity between job centres; sustaining relationships and sense of community is also difficult when solely transit-reliant; and
- pedestrian health and safety is concerning in areas with rising vehicle traffic.

As with the inequity baseline data report, the 'Listening and Learning Engagement Report' should be considered as one step towards understanding and addressing social equity concerns in the region.

### **Inequity Baseline Data Report**

The Inequity Baseline Data Report visually presents spatial data for 49 identified relevant indicators. This is a broad analysis and does not draw conclusions about the reasons or causes, but helps with a general understanding of disparity in the region. This is considered a first step to help guide future study.

The indicators have been displayed as maps (Reference 3). The unit of analysis is the Traffic Analysis Zone geography and, generally, the darker the shade, the higher the equity consideration. The 49 indicator maps reveal a wide assortment of distribution patterns: some social, some topographical, and some linked strongly to the transportation network. Others reflect community development decisions (such as replacement rate or park access). The indicators were then combined into an 'Inequity Index Map' which highlights geographic areas with multiple unique overlapping inequity concerns. Different factors contribute to high inequity scores depending on the location. The annotated map on page 44 explains which indicators are contributing to the scores.

The Inequity Index Map illustrates how different identity factors and conditions can "intersect" and overlap to create compounding experiences of inequity, and that a blanket response to social equity for the region will not address the unique conditions that exist in neighbourhoods.

The findings of the Inequity Data Baseline and the Stakeholder Engagement were analyzed and used in the development of the Study and the four recommendations for the integration of social equity into regional planning, specifically *Metro 2050*. The recommendations are noted below.

### **STUDY RECOMMENDATIONS**

Based on an analysis of the Inequity Data Baseline and the Stakeholder Engagement work, the consultant provided the following four recommendations to Metro Vancouver.

**Recommendation 1: Refined definition of Social Equity**

Enhance the working definition of ‘social equity’ from Phase 1 work to:

*... the incorporation of justice and fairness within the region’s principles, practices, and policies in order to support the development of equitable outcomes for all individuals. It is the promotion of access to context-appropriate opportunities and representation within systems of power for those that face systemic barriers and are the most negatively impacted by regional decisions, often due to intersecting and compounding factors such as race, ethnicity, Indigeneity, gender, sexuality, religion, age, socio-economic status, and mental or physical disability.*

*Expanding social equity means developing a region where individuals do not experience discrimination or exclusion from society because of their identities, but instead are welcomed, celebrated, supported and treated with dignity and respect.*

**Recommendation 2: Priority Areas for Action**

Focus responses on the Top Inequity Indicators – the following inequity indicators have the highest connectivity to regional growth and land use, and have been noted through the stakeholder engagement to have the highest priority:

- Rate of Change – demolitions by land use change
- Access to parks and recreation space
- Lack of affordable (subsidized) housing
- Relative access to transit
- Rate of change – demolitions by replacement
- Housing suitability (overcrowding)
- Employment access (transit)

Monitor Equity Performance Measures by integrating social equity indicators into the regional growth strategy’s performance monitoring program. Some of the potential measures include: Urban Tree Canopy, Employment Access (Transit), Employment Access (Drive), Exposure to Flood Hazard, and Average Commute Time.

**Recommendation 3: Analyze Metro 2050 Policies from the Perspective of Social Equity**

Further develop the “Social Equity Analysis Tool” to be used in the evaluation of policies in Metro 2050. The proposed Social Equity Analysis Tool framework will be a process designed for policy-makers to help them ensure social equity is considered in all policy areas.

**Recommendation 4: Begin a review of existing policies by drawing on previously identified gaps**

Review existing policies by focusing on gaps previously identified within Metro 2040 as part of the phase 1 social equity study (Reference 2). This includes identified policy gaps within the Housing, Environmental, Economy and Employment, Climate and Agriculture goal areas.

**Additional Recommendations**

Beyond the recommendations identified in the consultant’s report relative to the regional growth strategy, there were further “Opportunities for other work” provided, which focus on following:

1. Improved Data Collection with a focus on health outcomes, environmental considerations, personal safety, universal accessibility and wealth and political knowledge;
2. Further integrate into corporate projects and studies the following tools:
  - a. Bottom-up models of equity: use lived experience of diverse communities in the formulation of the inequity baseline;
  - b. Equity Impact Model: Ensure modelling and data can be achieved at a planning scale to understand the impact of growth and change within neighbourhoods;
  - c. Disaggregate Data Strategy: Develop data at scales that are functional for planning type decisions, maintain privacy and safety of groups and identify/explore smaller scale communities of interest.
3. Regional Equity Explorer: This tool would take the baseline data and provide it in a more interactive/engaging user interface.
4. Improved MVRD engagement with community members, partners and consultants. This includes:
  - a. Develop policy to support engagement of diverse perspectives;
  - b. Maintain advisory bodies and innovation groups;
  - c. Develop framework for obtaining data from community members;
  - d. Reduce barriers (i.e. provision of child care);
  - e. Take a distinct and specific engagement process with First Nations groups.

## **REGIONAL PLANNING ANALYSIS**

### Recommendation #1: Definition of Social Equity

Staff will integrate the Phase 1 and 2 definitions as well as definitions being generated in other similar work across Metro Vancouver with an aim to including a robust and meaningful definition of social equity in *Metro 2050*.

### Recommendation #2: Priority Areas for Action

Staff will continue to identify and assess indicators to better reflect social equity considerations, including those identified by the consultant, to support ongoing Regional Planning policy development and monitoring. However, further review is needed to ensure the indicators are sound. For example, regarding neighbourhood change, demolition data may not be the best indicator as it does not provide a full picture of such change. In addition, the use of National Occupancy Standards to determine 'overcrowding' has been critiqued as problematic in preventing some families from accessing affordable housing. Staff will undertake further analysis to confirm effective indicators to include in *Metro 2050* and the monitoring program.

The 49 indicators identified provide a valuable picture of social equity considerations in the region. Staff will update this data as the 2021 Census and other data become available.

### Recommendation #3: The Social Equity Analysis Tool

The proposed *Social Equity Analysis Tool (SEAT)* will be further tested and evaluated to support the integration of social equity considerations into the development and implementation of *Metro 2050*. Where appropriate, the inequity indicators identified by the consultant will inform policies in the relevant sections of the regional growth strategy.

**Recommendation #4: Conduct an Analysis of Existing *Metro 2040* Policies**

As per the recommendation, staff will review existing policies within the Housing, Environmental, Economy and Employment, Climate and Agriculture goal areas.

**Additional Recommendations**

The consultant provided additional recommendations for Metro Vancouver; these were beyond their scope of work, and made without full awareness of other equity, diversity and inclusion work being undertaken across the corporation. Staff will convey these recommendations to other project teams to be considered as appropriate.

**ALTERNATIVES**

This is an information report. No alternatives are provided.

**FINANCIAL IMPLICATIONS**

The consultant fees for this study, totaling \$35,000, were part of the Board approved 2020 Regional Planning budget. The total project cost is \$85,590 with TransLink contributing \$50,590.

**CONCLUSION**

This report conveys the *Social Equity & Regional Growth Study: Considerations for integrating social equity into regional planning and Metro 2050* to the Regional Planning Committee and Board. The purpose of the Study was to improve the understanding of social equity issues as they relate to regional planning, and to develop recommendations to consider for *Metro 2050*.

As noted in the Regional Planning Analysis Section, there is further work that is need to be undertaken to refine the suggested recommendations. The initial baseline data (49 indicators) the consultants have provided is a good foundation to assist in informing current policy development for the regional growth strategy update; the data will be used to gauge current and proposed policies impacts on the region. Beyond the policy review, the data, along with the *SEAT Tool* will be used in the development of a performance monitoring tool relative to the policies of the regional growth strategy. Upon completion of the update to the regional growth strategy, staff will undertake a separate project to prepare the performance monitoring tool.

Overall, working towards social equity is an ongoing process that will require collaboration and partnerships and consideration of the varied communities and neighbourhoods throughout the region.

**Attachment (43811813)**

1. *Social Equity & Regional Growth Study: Considerations for integrating social equity into regional planning and Metro 2050*, Prepared for Metro Vancouver Regional District, Prepared by Keltie Craig Consulting, January, 2021



## References

1. [Social Equity in Regional Growth Management Phase 2 Study – Project Initiation, Regional Planning Committee Report, May 1, 2020](#)
2. [Social Equity in Regional Growth Management – Key Findings, Regional Planning Committee Report, November 8, 2019 \(Phase 1 report\)](#)
3. [Metro Vancouver Social Equity and Regional Growth – Inequity Baseline Data Indicator Maps](#)

43813719

# **Social Equity & Regional Growth Study**

Considerations for integrating  
social equity into regional planning  
and *Metro 2050*

Prepared for:  
Metro Vancouver Regional District  
January 25, 2021

Prepared by Keltie Craig Consulting  
in association with:

Luna Aixin Consulting, Kevin Kapenda, & Licker  
Geospatial (Aaron Licker, Kristi Silk, Renee Proulx)

*You know, inequity is heartbreaking. And if we really talked about all of the things that [inequity] created, I think it would melt people in privileged positions' brains. Because I don't think they have to deal with the things that we have to deal with.*

*I don't think that they have to make a choice to go and see a friend or a family member who is on their deathbed. Or make a choice to go and see their children. To comfort your friends' children.*

*Do other people feel that these are choices that they have to make? I do. And it's terrible.*

- SOCIAL EQUITY STUDY LISTENING & LEARNING PARTICIPANT

Executive Summary .....	1
1. Introduction.....	6
1.1 Orientation.....	6
1.2 Terminology & Key Concepts.....	7
2. Study Overview.....	9
3. Inequity Baseline Data Report .....	11
3.1 Description .....	11
3.2 Inequity Baseline Indicators .....	11
3.3 Methods.....	12
3.4 Indicator Maps .....	13
3.5 Regional Inequity Index .....	42
4. Listening & Learning Engagement Report.....	52
4.1 Description .....	52
4.2 Participants.....	52
4.3 What We Heard .....	54
5. Recommendations.....	63
5.1 Social Equity Definition .....	63
5.2 Priority Areas for Action .....	64
5.3 Social Equity Analysis Tool.....	69
5.4 Initial Policy Content Gaps.....	71
6. Opportunities for Future Work.....	73
6.1 Research .....	73
6.2 Engagement .....	75
7. Conclusion.....	77
Appendices.....	78
I. Literature Review .....	78
II. Developing the Inequity Baseline .....	86
III. Data Dictionary for Inequity Indicators .....	90
IV. Principal Component Analysis (PCA) Methodology .....	93
V. Inequity Baseline Indicator Descriptive Statistics.....	95
VI. Listening & Learning Session Detailed Agenda .....	97
VII. Developing the Listening & Learning Engagement Sessions.....	98
VIII. High-Resolution Indicator Maps .....	100

# Executive Summary

In a growing region like Metro Vancouver, incorporating social equity into regional growth planning is crucial to ensuring that our region moves forward in an equitable and inclusive manner. The purpose of the Social Equity & Regional Growth Study was to identify how social equity considerations can better inform regional growth planning.

The specific goals of this study are to:

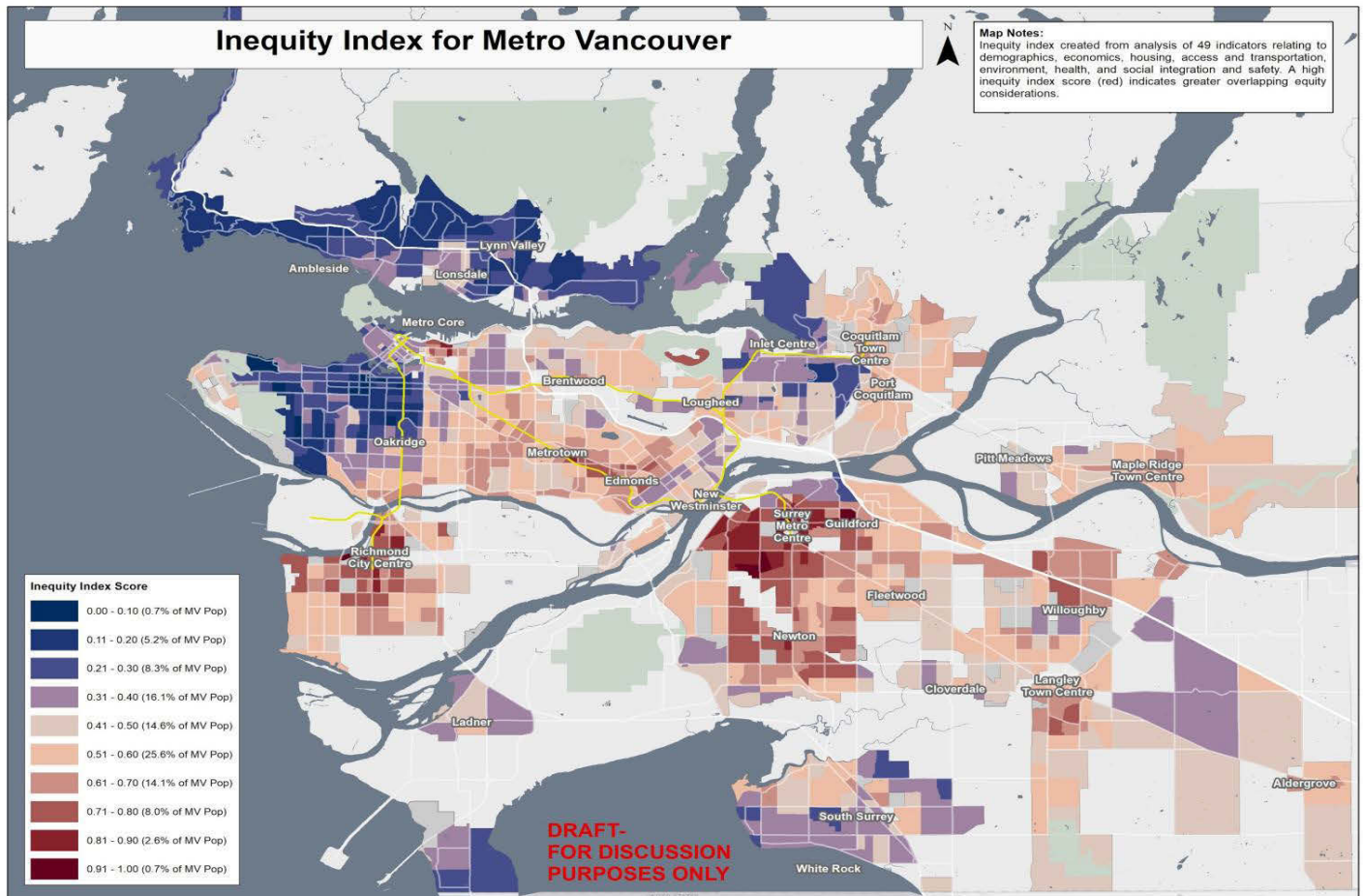
1. Develop a quantitative and spatial understanding of the existing inequities within the MVRD region, as these relate to growth management.
2. Develop a qualitative understanding of how social equity context experts would like to see equity defined and addressed within long-range land use policies.
3. Create an approach to synthesize the findings from the previous two items into an analysis and set of clear, actionable recommendations for incorporating social equity considerations into new and existing policy language and implementation practices, including the development of a “social equity analysis tool” that can be applied to *Metro 2050*.

The quantitative spatial research undertaken in the study was developed by mapping a series of 49 social equity indicators, producing an Inequity Baseline. This is the first Inequity Baseline developed for Metro Vancouver, and one of the first of its kind in Canada to bring together the data in this way.

Indicators were divided into the following categories:

- Demographics-related Indicators
- Conditions-related Indicators
  - Economics
  - Housing
  - Education
  - Environment
  - Access and Transportation
  - Social Integration and Safety
  - Health

The 49 indicators making up the Inequity Baseline were then analyzed using a mathematical process called a “Principle Component Analysis” (PCA). The PCA groups and weighs data based on similarity in variation and the degree of their correlation. This helps identify patterns and consolidates the large amounts of datasets being examined in this study. A result of running the PCA is a Regional Inequity Index Map that highlights geographic areas with multiple, overlapping inequity concerns. A high Inequity Index score signifies more overlapping equity concerns, based on the 49 indicators mapped.



The qualitative component of the study - called “Listening & Learning” engagement sessions - were designed to give voice to the lived experiences of inequities by racialized and LGBTQ2S people from across the region. Some of the main topics and themes heard during the engagement are shown in the table below.

Topic	Themes
What does Social Equity look and feel like?	
Social Equity for Indigenous Nations and Peoples	<ul style="list-style-type: none"> <li>Indigenous Social Equity needs to be treated distinctly in recognition of Indigenous Rights and Title</li> <li>Historical trauma and injustices need to be acknowledged</li> <li>Each individual's experience is unique, and intersectionality is important</li> <li>Culture is foundational</li> </ul>
Social Equity for Other Equity-Denied Populations	<ul style="list-style-type: none"> <li>Move from emphasizing “Equality” to “Equity</li> <li>Social Equity is experienced differently</li> <li>Supporting social equity means supporting people's potential, fair distribution, and feelings of inclusion.</li> <li>Representation is necessary for social equity</li> <li>Dignity is inherent to social equity</li> </ul>
Experiences of Inequities in the Region	
Land Use and Growth Management	<ul style="list-style-type: none"> <li>Homelessness looks different throughout the region</li> <li>Support and opportunities are needed for equity-denied populations to live and work within the same community</li> <li>The effects of displacement threaten community connections &amp; support</li> </ul>

	<ul style="list-style-type: none"> <li>• Parks and green space need to feel welcoming for all</li> <li>• Classism and race bias in relation to community demographics affects services</li> <li>• There is a need for a diversity of housing types in neighbourhoods across the region</li> <li>• Patterns of historical colonial displacement repeat themselves in contemporary gentrification</li> <li>• Retail space affordability and availability impacts equity-denied populations</li> </ul>
Transit and Mobility	<ul style="list-style-type: none"> <li>• Transit-reliant populations face isolation, delays, and fewer opportunities in parts of the region with lower transit connectivity between job centres</li> <li>• Congested transit disproportionately impacts riders with disabilities, medical concerns, or other mobility considerations</li> <li>• A lack of transit frequency and reliability impacts economic and social opportunities</li> <li>• Some sub-regions are experiencing rapid growth due to immigration and lower housing costs, but don't have sufficient transit service to address resulting congestion</li> <li>• Pedestrian health and safety is concerning in areas with rising vehicle traffic</li> <li>• Lack of amenities at SkyTrain stations and bus exchanges (public washrooms, WiFi) has disproportionate impacts</li> <li>• Greater focus is needed on enhancing the perception of safety while using transit</li> <li>• Racial bias from transit security and employees is experienced in their enforcement of regulations</li> <li>• Interests of privileged stakeholders should not supersede those of transit-reliant populations</li> <li>• Sustaining relationships/community is difficult when solely transit-reliant</li> </ul>

A synthesis of key study findings arising from the quantitative and qualitative data produced recommendations in four main areas:

1. Use a refined definition of social equity.
2. Target three priority areas for action:
  - a. Focus policy response on inequity indicators connected to regional growth and land use.
  - b. Integrate a selection of social equity indicators into regional growth strategy performance monitoring.
  - c. Develop a corporate social equity plan.
3. Employ the "Social Equity Analysis Tool" (SEAT) to evaluate policies under consideration.
4. Begin a review of existing policy by drawing on previously identified gaps.

These are summarized below.

## 1. A refined definition of social equity.

Social equity in Metro Vancouver is the incorporation of justice and fairness within the region's principles, practices and policies in order to support the development of equitable outcomes for all individuals.

It is the promotion of access to context-appropriate opportunities and representation within systems of power for those that face systemic barriers and are the most negatively impacted by regional decisions, often due to intersecting and compounding factors such as race, ethnicity, Indigeneity, gender, sexuality, religion, age, socio-economic status, and mental or physical disability.

Expanding social equity means developing a region where individuals do not experience discrimination or exclusion from society because of their identities, but instead are welcomed, celebrated, supported and treated with dignity and respect.

## 2. Priority areas for action

- a. Focus policy response on the following inequity indicators connected to regional growth and land use:
  - Rate of Change - demolitions by land use change
  - Access to parks and recreation space
  - Subsidized housing
  - Relative access to transit
  - Rate of change - demolitions by replacement
  - Housing suitability (overcrowding)
  - Employment access (transit)
- b. Integrate a selection of 8-12 social equity indicators into regional growth strategy performance monitoring, drawing from the following list:
  - Urban Tree Canopy
  - Employment Access (Transit)
  - Employment Access (Drive)
  - Exposure to Flood Hazard
  - Average Commute Time
  - Subsidized Housing
  - Access to Parks and Recreation Space
  - Transportation Cost Burden
  - Unemployment Rate
  - Income Inequality Ratio
  - Housing Tenure - Renter
  - Housing Tenure - Owner
  - Median Home Value
  - Relative Access to Transit
- c. Develop a corporate social equity plan.

This would complement the external-facing policy/practice work outlined in this report with a more comprehensive look at social equity including internal organizational work and necessary investments in the time, learning, and 'infrastructure' needed for transformational change.



**3. Employ the “Social Equity Analysis Tool” (SEAT)**, developed during this project, to evaluate policies under consideration. The SEAT consists of the following four stages, each with a series of accompanying questions to guide its use:

- Stage 1: Reflection & Representation
- Stage 2: Research & Assumption Check
- Stage 3: Impacts & Solutions
- Stage 4: Measurement & Evaluation

**4. Begin a review of existing policy by drawing on gaps** previously identified within *Metro 2040* as part of the precursor to the Social Equity & Regional Growth Study: the [\*Social Equity in Regional Growth Management Report\*](#) (2019). This includes identified policy gaps within the Housing, Environmental, Economy & Employment, Climate and Agriculture goal areas.

The Social Equity & Regional Growth Study also includes some suggested areas for future work, both in research and additional engagement, to build on and further develop an understanding of inequity in the region.

While this study is a standalone report, it can inform subsequent work and policy direction for Metro Vancouver, and act as a rough blueprint for incorporating social equity into the region’s growth management planning. This process will require significant time and resources, and continual learning. The Social Equity & Regional Growth Study should be viewed as another useful step in the ongoing journey to make social equity a fundamental component of regional growth planning.

# 1.Introduction

This report was created on the traditional, ancestral, and unceded territories of the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and Səlilwətaʔ/Selilwitulh (Tsleil-Waututh) First Nations, in what is also known as Vancouver, as well as the traditional territories of the SEMYOME (Semiahmoo), scəwaθən məsteyəxʷ (Tsawwassen) and qʷa:ńł'əń (Kwantlen) First Nations, in what is also known as Surrey.

We begin with an understanding that social equity manifests itself differently based on our environments. In other words, where we are located matters. Social and systemic inequities experienced by communities that are marginalized are linked to the forced removal of First Nations, Inuit and Metis peoples from their lands for the benefit of colonial power. While Indigenous Nations have asserted their sovereignty over their territories since time immemorial, both BC and Canadian legislation also affirm Aboriginal Rights and Title through provincial (2019) and federal (2016) declarations supporting the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Recognizing and naming these truths continues to be a priority action related to reconciliation, and social equity work more broadly.

Social equity is not possible without acknowledging a necessary shift in power, and the role that governments and public institutions can play in this transformation. It is an opportunity to acknowledge and begin to make amends for the historic - and in many cases current - roles that decision-makers and policy writers have held in perpetuating systemic bias and discrimination against Indigenous peoples as well as Black and racialized people, and the intersecting identities that are present within all communities.

We recognize the foundational contributions and efforts that many generations of individuals and organizations have already done to bring voice to the needs, hopes and dreams of those that have been denied a place at the table. A summary of some of the significant contributions to the understanding of lived experiences of inequity over recent years is included in Appendix I, and readers are encouraged to review it. Indigenous, Black, People of Colour, queer, trans, non-binary, two-spirit, lesbian and gay voices - and the intersectional identity elements these folks inhabit such as age, disability, socio-economic status, and religion - have surfaced issues and complexities that many in dominant identity groups can and should listen to and learn from.

Our consulting team members have varied lived experiences based on our intersectional identities: non-binary, woman, man, Black, White, South East Asian + South Pacific Islands, Jewish, queer, heterosexual, neuro-diverse, disabled, able-bodied, parent, partner...but we are all settlers on this land. We recognize that without an Indigenous team member on this project, we lack the direct lived experience of Indigenous culture, worldviews, resilience and challenge that would benefit a deeper understanding of social equity in the region.

## 1.1 Orientation

This report is organized into the following main sections:

- 1) **Study Overview**, including background, context and guiding principles.
- 2) **Inequity Baseline Data Report**, including methodology, approach, and the 49 indicators used to develop the Inequity Baseline, with corresponding maps of distribution in the region. It also presents the Regional Inequity Index.
- 3) **Listening and Learning Engagement Report**, which provides a description of who and how participants were engaged with, and shares key themes that were heard during the engagement sessions.
- 4) **Recommendations**, including a definition of Social Equity for MVRD, priorities for action, and a Social Equity Analysis Tool to assist with integrating social equity considerations into policy creation, review, and amendments.
- 5) **Opportunities for Future Work**, including additional research and engagement that could move forward an understanding of social equity.

Finally, the Appendices summarize important contextual reading, and additional background information and details on the Inequity Baseline and Listening and Learning Engagement Sessions. It also includes high-resolution versions of the Indicator Maps.

## 1.2 Terminology & Key Concepts

Language matters, language changes, and language is contextual. What may once have been a preferred term may no longer be appropriate, and words or names that one individual may embrace to help define themselves may not resonate with another individual who may share similar identity characteristics.

We use several terms within this report to talk about individuals, communities, and/or populations that historically and currently face systemic barriers, discrimination, and injustice:

**Equity-denied populations** - marginalized and racialized populations who are being denied access and opportunities by existing structures of power. This term was raised by a participant in the engagement sessions as preferred to the more euphemistic term “equity-seeking.” The phrase “equity-seeking” overburdens those who are already impacted by systemic inequities to drive the rationale for equity building. Working towards equity means positioning those that hold systemic power as “equity-sharing” groups, thus balancing and including all the necessary actors for socially equitable outcomes for all to be possible and attainable.

**Social equity context experts** - individuals who have gained knowledge from their personal involvement and lived experiences of inequity. The importance of including context experts in decision-making processes is grounded in the principle of “nothing about us, without us.”

**Communities/populations that are marginalized** - communities and populations that experience systemic barriers and discrimination as well as disproportionate oppression from institutions of power because of specific aspects of their identity, such as ethnicity, race, religion, sexual orientation, gender, or disability, among others. The marginalization a community experiences does not necessarily reflect on its resilience. A community can be strong and also be under tremendous economic, environmental, and health pressures due to institutional choices that have discriminated and oppressed them.

**Racialized communities:** people that are non-Caucasian in race or non-White in colour. As with many of the terms listed in this section, there may be individuals or communities within these identities that prefer other terms, such as “BIPOC” (Black, Indigenous, or People of Colour). While these identities may share experiences of racism and the systemic effects of living in a society that privileges Whiteness, the individual histories and contemporary experiences between each identity group are vastly different and should not be conflated. While the term racialized may be useful as a shorthand to identify “non-White” and the resulting racism that occurs, it is acknowledged that individuals within these communities may or may not identify with any form of aggregated term.

**LGBTQ2S+:** Persons who identify as Lesbian, Gay, Bi-Sexual, Transgender, Queer, or Two-Spirited. Although all of the different identities within “LGBTQ2S” are often grouped together (and share sexism as a common root of oppression), there are specific needs and concerns related to each individual identity.

**Cis-gender:** Gender identity and expression matches the biological sex a person was assigned at birth.

**Non-binary gender:** Gender identity and expression may blend elements of man and woman, or is not captured by either. Other terms may be preferred, such as genderqueer, agender, or bigender - while none of these mean exactly the same thing, they all refer to an experience of gender that is not simply male or female.

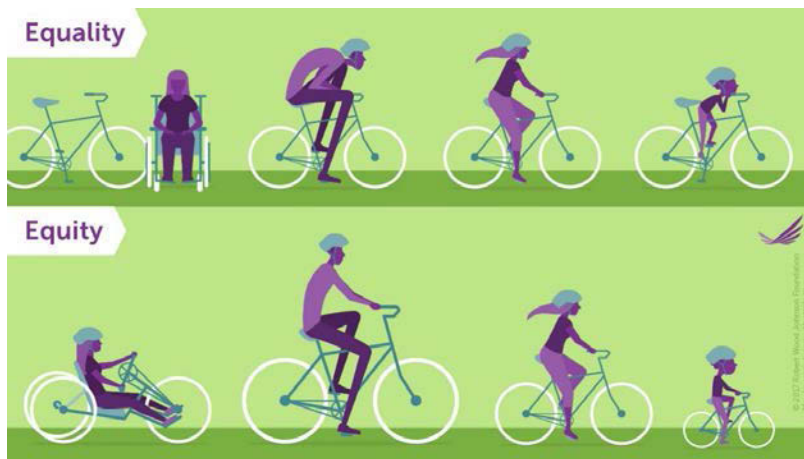
In addition, it is important to clarify several other terms that will be referred to throughout this report:

**Intersectional/Intersecting identities:** The term “intersectionality” was coined in 1989 by Dr. Kimberlé Crenshaw, a civil rights activist and legal scholar in critical race theory, to better depict how discrimination can occur on the basis of both race and gender, and often, a combination of both. The term is now used to describe how

discrimination based on race, gender, class and other individual characteristics “intersect” and overlap with one another. The experience of a lesbian Black woman will be different from that of other women who may not be Black, may not be lesbian, or may not be both.

**White Body supremacy:** Trauma specialist and therapist Resmaa Menakem describes the concept of ‘White body supremacy’ as “the perpetuation of a false narrative that White people are better than people with other skin colors and ethnic backgrounds.” It is viewing Whiteness as the status quo, placing White people at the top of a ladder of racial hierarchy while positioning Black populations at the bottom. Many people may view White supremacy only as neo-fascism or similar extreme representations of racist harms. While these extremist organizations embody supremacy, so too do many other societal norms that are taken for granted.

### Equality, Equity, & Systemic Exclusion:



(Image: Robert Wood Johnson Foundation)

In the diagram, two different scenarios are depicted: equality vs equity. **Under equality, everyone gets the same bicycle** regardless of their size, ability or age. The bike only truly fits one person; it is difficult or impossible for everyone else to ride. **Under equity, each figure gets a bicycle that addresses their specific need**, thus creating a fair way of providing added mobility to each individual.

Moving from an equality approach to a fair and equitable approach might seem to be sufficient in providing proper support to each individual to excel in society. But it doesn't highlight the reality that dominant populations are safeguarded and promoted via the **systemic**

**exclusion** of others, preventing them from gaining power and decision-making authority. Conversations of power and privilege are necessary to truly get to equitable outcomes.

## 2. Study Overview

In 2019, a report on [Social Equity in Regional Growth Management](#) highlighted key insights and recommendations to Metro Vancouver Regional District (MVRD) to advance their understanding of social equity and applications in regional land use and planning. This was done in preparation for the upcoming update to of [Metro 2050](#), the Regional Growth Strategy, in order to place a more explicit focus on considering social equity.

The Social Equity & Regional Growth Study is an opportunity to follow up on previous recommendations, and begin to explore how regional growth planning can be informed by social equity considerations.

The specific goals of this study are to:

1. Develop a quantitative and spatial understanding of the existing inequities within the MVRD region, as these relate to growth management.
2. Develop a qualitative understanding of how social equity context experts would like to see equity defined and addressed within long-range land use policies.
3. Create an approach to synthesize the findings from the previous two items into an analysis and set of clear, actionable recommendations for incorporating social equity considerations into new and existing policy language and implementation practices, including the development of a “social equity analysis tool” that can be applied to *Metro 2050*.

### 2.1.1 Project Context

Our understanding of social equity is impacted by the current context - both locally and globally. At the time the Social Equity & Regional Growth Study was undertaken in 2020, the following conditions, limitations and considerations were present:

- Heightened Anti-Indigenous, anti-Black, anti-Asian racism
  - Across Canada and the U.S., systemic anti-Indigenous and anti-Black racism continues to oppress those populations through institutionalized discrimination and injustice that originated with the colonization of North America and trans-Atlantic slave trade. The enduring presence of systemic anti-Indigenous racism in Metro Vancouver dates back centuries to the colonization of the traditional Coast Salish territories our region occupies today. Furthermore, the recent increase of anti-Asian racism (primarily Chinese) in Metro Vancouver and across North America due to the COVID-19 pandemic in 2020 is another chapter in the history of anti-Asian racism on the continent, including the Chinese Exclusion Act of 1923 and the forcible expulsion and internment of Japanese Canadians during World War Two.
- Impacts of Systemic Trauma
  - Impacts of colonization can affect the perception of “safe space” for participation in an engagement process. This can be experienced by Indigenous as well as immigrants and settlers from other countries affected by colonization.
- Safety and access considerations related to the COVID-19 pandemic
  - Physical distancing requirements and gathering restrictions reduce the ability to engage in person.
  - Access to technology and internet may be limited for some groups.
  - Capacity of equity-denied groups to participate in engagement activities might be further limited given the disparities caused by social determinants of health and inequity.

In addition, the project scope created some constraints for engagement:

- Time & budget limitations
  - It is not possible to connect with all equity-denied groups in the region, so the resulting engagement should be viewed as narrative and anecdotal, as opposed to a comprehensive, representative sample.
- Relational commitments
  - Engaging with Indigenous Host Nations (those on whose traditional territory you are situated on) requires investing in ongoing, respectful relationships, not one-time studies or individual projects. The socio-political sphere and current pandemic further compounds challenges to engage individual Nations in meaningful ways. MVRD is working to build long term relationships with First Nations in the region and this study is intended to complement but not replace that work.
- Access Barriers: These include conditions relating to:
  - Technological accessibility and capacity gaps, i.e. seniors; those living in rural areas; those in poverty.
  - Language accessibility barriers for other-than-English speakers.
  - Existence or the lack of cultural safety within engagement practices.
  - Disabilities, including physical and/or mental.

Finally, the Inequity Baseline Report only used one form of quantitative analysis: spatial distribution of equity indicators. While mapping these indicators can be beneficial to planning, which largely exists as a spatial exercise, spatial distribution also has some limitations. Namely, some causes of inequities will not show up on a map, as not every form of oppression can be represented with a spatial proxy. Spatial distribution also does not indicate disproportionate distribution of benefits and harms according to other dimensions, which would be a useful exercise for future study.

### **2.1.2 Guiding Principles**

A set of principles was created to help guide the project process:

- Use intersectional, anti-oppressive and participatory approaches
- Emphasize cultural, identity and relational safety of participants
- Build on existing work, and acknowledge those that have done much already on this topic
- Recognize the importance of collaboration, learning, and reflection to this work

# 3. Inequity Baseline Data Report

## 3.1 Description

The Inequity Baseline Data Report created for the Social Equity & Regional Growth Study visually presents spatial data for 49 indicators relevant to the relationship between social equity and growth management. These were applied to the regional context as part of an exploratory analysis. Quantitative data, while imperfect, can help us measure indicators of inequity at regional and local scales. By looking at the relationships between indicators, we can start to frame opportunities and limitations for investing in equity building within communities.

Geographic information systems (GIS) are an effective medium for reviewing spatial relationships and analyzing inter-relationships of data. GIS is a powerful tool and its use should be aligned with the agreed-upon objectives and ethics of any equity project. Examples of themes related to spatial-equity include: distribution of populations, positive and negative natural and social environmental settings, economic opportunities and barriers, transportation and mobility access, the location of goods and services, housing type and location, social connectedness and isolation, and determinants of health.

## 3.2 Inequity Baseline Indicators

Indicators were selected for this report following a comprehensive review of inequity baselines and indices throughout North America, predominantly in the United States (see Appendix II).

Following this research, a long list of potential indicators was produced. Indicators were refined from the resulting list based on the following criteria:

- regularity of use elsewhere
- applicability to Metro Vancouver
- data availability
- repeatability in the future
- client and team feedback

The best practice review suggested that thematic groupings of indicators are important and that forty to sixty indicators would be reasonable. Our resulting baseline includes 49 indicators and are presented in the table below. Detailed information on each indicator is presented in a data dictionary (see Appendix III).

### A note on terminology

Language and terms are intricately connected to equity and representation, and are evolving. The names of indicators used in this report are drawn from the terminology used in the data source (e.g. Statistics Canada). They do not always represent current best practice, and may in fact be offensive, triggering or erasing to some communities. Examples of this include the term “Visible Minority,” a standard term used by Statistics Canada which has generally been replaced by “Racialized Persons” by the wider community. Another example is “Female-headed Single Families” which omits parents that are transwomen, non-binary, and potentially others. Where applicable, we have indicated preferred terms in brackets.

Table 1: List of indicators included in the Inequity Baseline

<b>Demographics-related Indicators</b>	26. Early Childhood Development - Language and Cognitive Development - Vulnerable Children
1. Visible Minority	27. Early Childhood Development - Communication Skills - Vulnerable Children
2. Indigenous Identity	<b>Conditions-related Indicators: Environment</b>
3. Seniors	28. Access to Parks and Recreation Space
4. Children	29. Urban Tree Canopy
5. Single Parent Families	30. Access to Grocery Stores
6. Female-Headed Households	31. Urban Heat Island
7. Ethnic Diversity Index	32. Exposure to Flood Hazard
8. Median Age	<b>Conditions-related Indicators: Access and Transportation</b>
9. No Knowledge of Official Languages	33. Relative Access to Transit
<b>Conditions-related Indicators: Economics</b>	34. Average Commute Time
10. Median Household Income	35. Transportation Cost Burden
11. Poverty Ratio - Low Income Measure (LIM)	36. Average Transportation Spend
12. Unemployment Rate	37. Jobs Accessible Within 45 Minutes by Car
13. High Paying Jobs Index	38. Jobs Accessible Within 45 Minutes by Transit
14. Income Inequality Ratio	39. Ratio of Employment Access Within 45 Minutes: Transit/Car
15. Expected Employment Growth	<b>Conditions-related Indicators: Social Integration and Safety</b>
<b>Conditions-related Indicators: Housing</b>	40. Voter Turnout 2017
16. Housing Cost Burden	41. Youth Voter Turnout 2017
17. Housing Tenure - Renters	42. Four or More Persons to Confide In
18. Housing Tenure - Owners	43. Strong Sense of Community Belonging
19. Median Home Value	44. Long Term Residency (Mobility Status)
20. Housing Suitability (Overcrowding)	45. Sense of Safety
21. Gentrification Score	<b>Conditions-related Indicators: Health</b>
22. Subsidized Housing	46. Access to Primary Healthcare
23. Rate of Change - Demolitions by Replacement	47. General Health
24. Rate of Change - Demolitions by Land Use Change	48. Mental Health
<b>Conditions-related Indicators: Education</b>	49. Chronic Conditions (1+)
25. No Post-Secondary Education	

### 3.3 Methods

The data that was used came from varying geographic scales, i.e. dissemination areas for Statistics Canada, neighbourhood scale from the My Health, My Community survey, and electoral districts. To present information in an effective manner that can support regional decision-making, we conformed data from varying geographic spatial scales into one scale - the traffic analysis zone (TAZ) scale - which is the most common geographic unit of analysis for Metro Vancouver. All data were allocated to the TAZ scale using a population weighting from 2016 Census dissemination block information (Census dissemination blocks are the most granular source of data available for a project such as this one).



This data was used in a statistical analytic process called the Principal Component Analysis (PCA). The PCA groups and weighs data based on similarity in variation and the degree of their correlation. This is important as with such a large volume of data as is present in this study, it would not be possible for the human eye to distill the data to its most important contributors to focus attention on areas with multiple, uniquely contributing indicators. For more information about PCA, see Appendix IV.

A result of running the PCA is an Inequity Index Map that **highlights geographic areas with multiple, overlapping inequity concerns**. The index map is a tool that serves two purposes. Firstly, to highlight areas where, from the data we measured, there are several factors that are occurring and are unrelated. In other words, where there are multiple unique factors that could be contributing to inequity in an area (e.g. higher exposure to flood hazard and high childhood vulnerability rates are likely unrelated but could be overlapping factors in a particular neighbourhood, contributing to a higher inequity index score). Secondly, to serve as a focusing tool to support deeper analysis; 49 individual indicators may be an impossible and overwhelming starting point, so a single composite value provides a quantitative arrow pointing at where to look closer.

### 3.4 Indicator Maps

Indicators are grouped by theme for clarity and organization; however, a given indicator could belong to more than one group. The themes used are:

- Demographics-related Indicators
- Conditions-related Indicators
  - Economics
  - Housing
  - Education
  - Environment
  - Access and Transportation
  - Social Integration and Safety
  - Health

Descriptions, rationales, methodology and data sources are provided on each map. All mapping was produced using equal intervals or natural breaks in determining the colour distribution and adjusted to its nearest value - whole number or decimal, where appropriate - with the exception of median age which was shown by standard deviation. Basic statistics for each indicator are summarized in Appendix V. The colour gradient on the maps indicate the degree to which the inequity indicator being mapped is present. **Generally, the darker the colour, the greater the potential for inequity** (with the exception of median home value). This should be considered a loose guide however, given that some of the indicators mapped don't necessarily indicate a "concern" but rather the presence of a given condition (e.g. proportion of children). In some cases, such as with the income inequality ratio, both ends of the scale can be inequitable and the mapping attempts to capture this. The indicator maps in the following section are shown as thumbnails; higher resolution maps are included as the final Appendix.

#### 3.4.1 Demographics-related Indicators

Demographics-related indicators are population-specific and were predominantly sourced from the national Census (2016). Exact variables used, links to data sources, and other detailed metadata will be found in the spatial database accompanying this report. Generally, the darker the colour of the map gradient, the greater the potential for inequity related to this indicator.

## 1. Visible Minority (Racialized Persons)

### Description

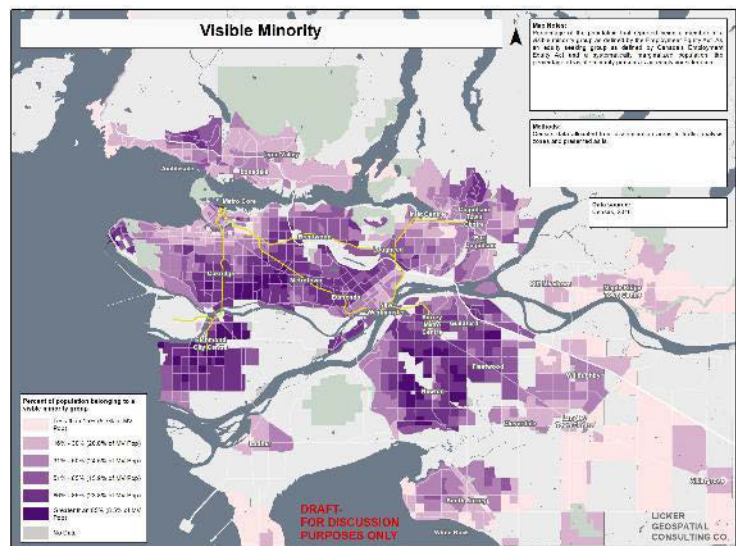
Percentage of the population that reported being a member of a visible minority group as defined by the Employment Equity Act, calculated through the 2016 Statistics Canada Census of Population.

### Rationale

Visible minority persons are different racialized people and minority groups that have historically and currently still are suffering from systematic marginalization.

### Result

The results showed highest percentages (where 84% to 99% of the population were visible minority persons) to be in Richmond and Surrey's Newton neighbourhood. Additionally, a swath of South-Eastern Vancouver in the Victoria-Fraserview area also had high percentages of visible minority persons.



## 2. Indigenous Identity (Peoples)

### Description

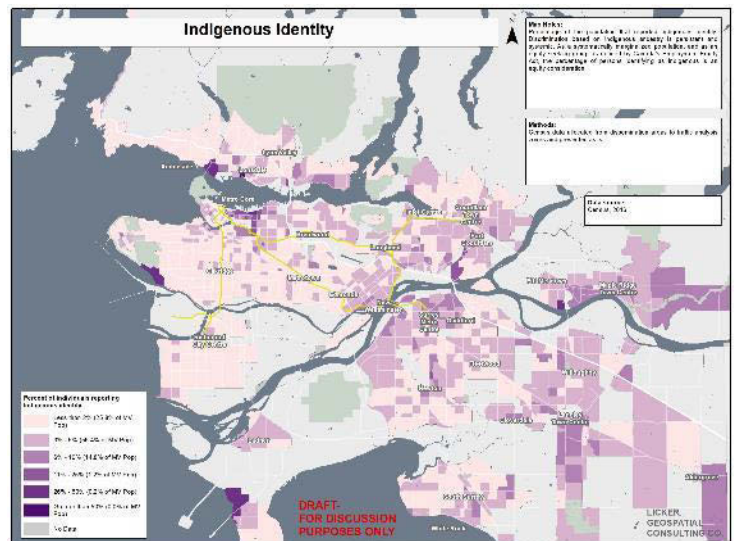
Percentage of the population that reported Indigenous identity, gathered from the 2016 Statistics Canada Census of Population.

### Rationale

Discrimination based on Indigenous identity is a persistent and systemic act of injustice. Indigenous People continue to resist oppression and marginalization from colonial-era systems and policies, which may include regional land use practices.

### Result

The results showed highest percentages (where 49% to 91% of the population were Indigenous peoples) in the respective reserves of the Skwxwú7mesh (Squamish), Stó:lō (Mission), s̓qəciyaʔ t̓əməxʷ (Katzie), kwikwetlem (Coquitlam), xʷməθkwəy̓əm (Musqueam), and s̓cəwaθənaʔ t̓əməxʷ (Tsawwassen) peoples, as well as in Vancouver's Downtown-Eastside. The regional mean was 3%, while concentrations of more than 50% in reserve lands led to high spatial variability for the region overall. This is the seventh highest variability of the 49 selected indicators suggesting a high concentration of Indigenous peoples in specific geographic areas, and much less so elsewhere.



### 3. Seniors

#### *Description*

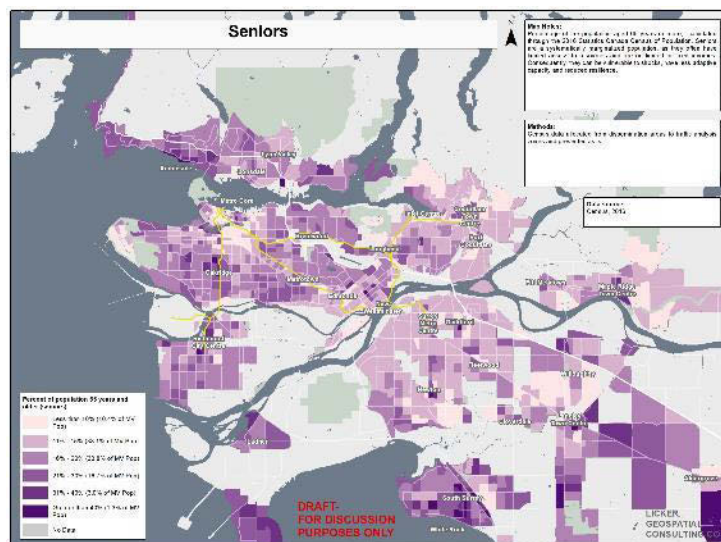
Percentage of the population aged 65 years or more, calculated through the 2016 Statistics Canada Census of Population.

#### *Rationale*

Seniors are especially susceptible to changes, and often have reduced capacity to adapt to crisis events or chronic stressors such as extreme heat or poverty. Ripple effects of inequities can often place seniors at the most risk of being displaced or isolated. Seniors often experience limited or fixed incomes and should be a focus for mobility considerations. Consequently, they can be vulnerable to shocks, and have less adaptive capacity and reduced resilience.

#### *Result*

The results showed the highest percentages (where 40% to 68% of the population were seniors) were in North and West Vancouver, Richmond, South Surrey, and Aldergrove.



### 4. Children

#### *Description*

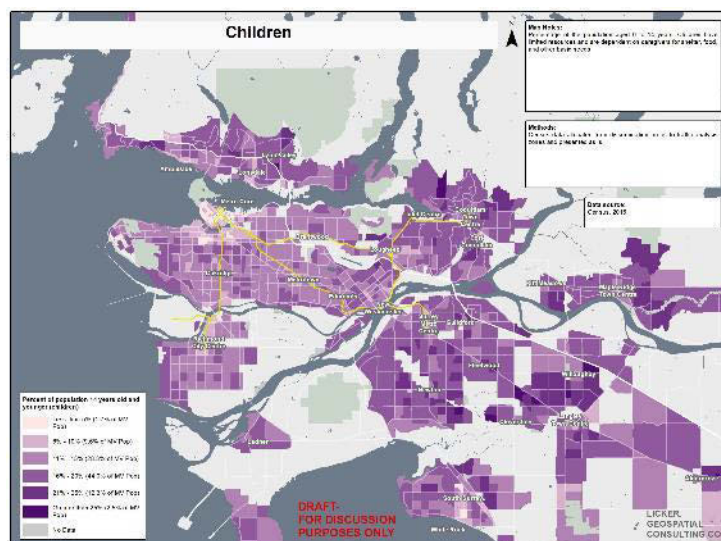
Percentage of the population aged 0 to 14 years, calculated through the 2016 Statistics Canada Census of Population.

#### *Rationale*

Children have limited resources and are dependent on caregivers for shelter, food, and other basic needs.

#### *Result*

The results showed highest concentrations (where 24% to 28% of the population were children) in the edge municipalities of the region: parts of Willoughby, Newton, South Surrey, Cloverdale and Maple Ridge.





## 5. Single Parent Families

### Description

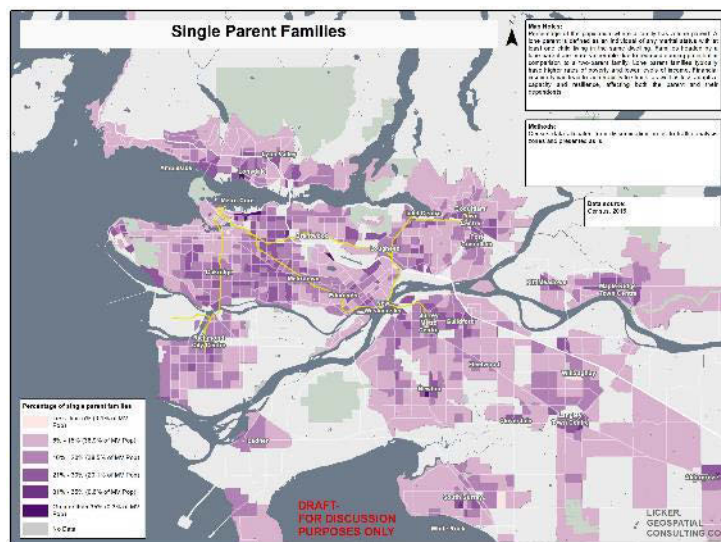
Percentage of the population where a family has a single parent, calculated through the 2016 Statistics Canada Census of Population. A single parent is defined as an individual of any marital status with at least one child living in the same dwelling.

### Rationale

Families supported by one parent are vulnerable to unintended impacts of market forces, such as housing affordability. They often have reduced earning potential in comparison to a two-parent family. One-parent families typically also experience higher rates of poverty and lower levels of income due to lack of access to child care to allow for full-time work, stigmatization, sexism, racism, and other forms of systemic discrimination and exclusion. Financial insecurity can lead to increased vulnerability to shock, as well as compromised adaptive capacity and resilience, affecting both the parent, their dependents and their communities.

### Result

The results showed the highest concentrations (where 37% to 43% of the population were single parent families) in Vancouver's Downtown-Eastside, Surrey's Newton, and Lonsdale.



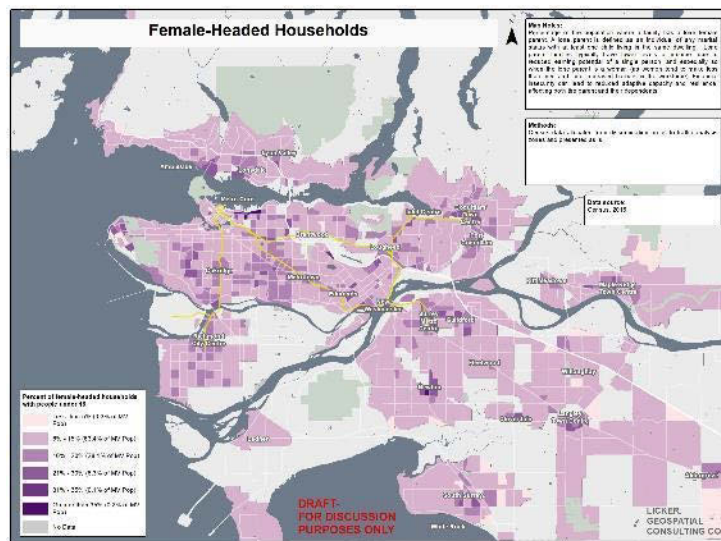
## 6. Female-Headed Households

### Description

Percentage of the population where a family has a single female parent, calculated through the 2016 Statistics Canada Census of Population. A single parent is defined as an individual of any marital status with at least one child living in the same dwelling.

### Rationale

Families supported by a single parent that identifies as a woman are more vulnerable due to persistent sexism. Single parent families typically experience higher rates of poverty and low levels of access to income-producing activities, especially when the single parent is a cis-woman, trans-woman, female-bodied trans-man, or non-binary person, and this is further compounded if for those who are Black, Indigenous or a Person of Colour (cis-gender and White men tend to make more income and enjoy more benefits relating to their privilege compared to other genders in the workforce). Economic insecurity and volatility can lead to increased vulnerability to shock, as well as significantly affected adaptive capacity and resilience capacities, affecting both the parent, their dependents and their communities.



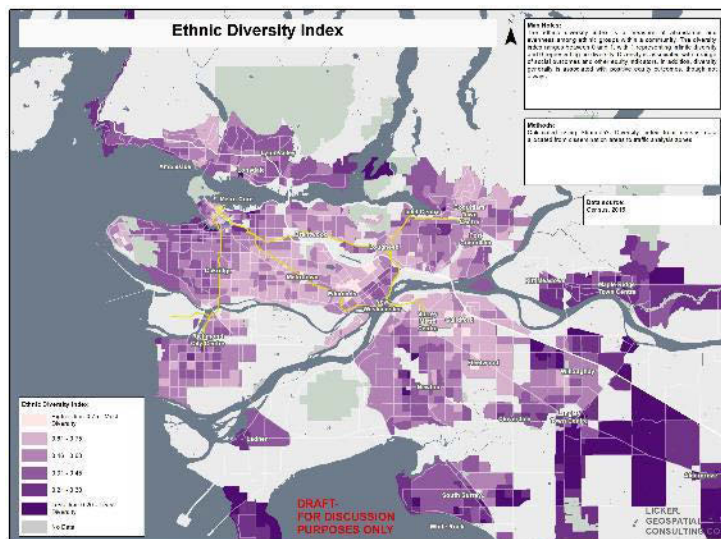
## Result

The results showed the highest concentrations (where 37% to 43% of the population were female-headed single parent families) in Vancouver's Downtown-Eastside and Surrey's Newton.

## 7. Ethnic Diversity Index

### Description

The ethnic diversity index is a measure of the number and relative evenness among ethnic groups within a community that considers the following ethnicities, as reported through the 2016 Statistics Canada Census of Population: South Asian, Chinese, Black, Filipino, Latin American, Arab, Southeast Asian, West Asian, Korean, Japanese, Other Visible Minority, Multiple Visible Minorities, and Not a Visible Minority. It was calculated using Shannon's Diversity index, which posits that a community dominated by one or two groupings of individuals is less diverse than one in which several different groups have a similar abundance. Thus, the formula takes into account both abundance and evenness of the input categories. The diversity index ranges between 0 and 1, with 1 representing infinite diversity and 0 representing no diversity. In this map, lighter shaded TAZs have a higher ethnic diversity index score while darker TAZs have a lower diversity index score.



### Rationale

The spatial distribution of ethnic diversity may reflect a variety of historical and contemporary influences on neighbourhood choice (for example racist housing policies or the presence of a strong ethnic enclave). Mapping the spatial distribution of ethnic diversity can support planning for more culturally appropriate engagement, services, and other government programs.

### Result

The results showed the lowest diversity index scores (with scores less than 0.1) in Delta, Langley Township and South Surrey. Highest diversity was in Vancouver's Metro Core, Burnaby's Metrotown and Edmonds, and areas of Guildford.

## 8. No Knowledge of Official Languages

### Description

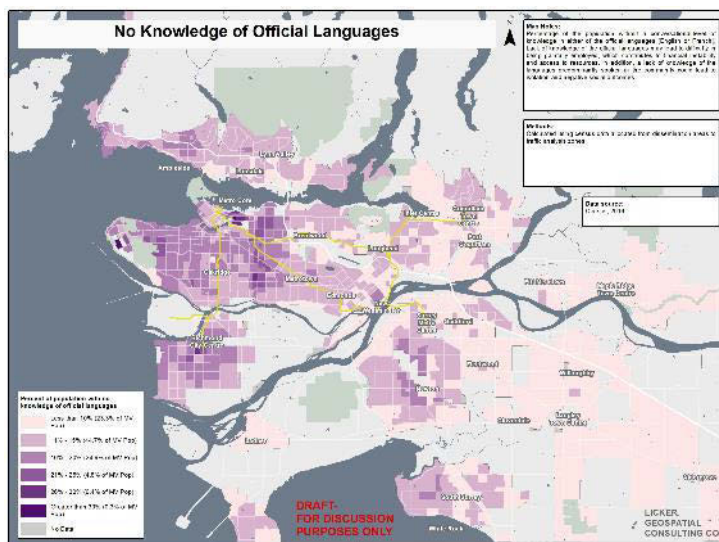
Percentage of the population without a conversational-level of knowledge in either of the official languages (English or French), calculated through the 2016 Statistics Canada Census of Population.

### Rationale

Lack of knowledge of the official languages may lead to difficulty in being gainfully employed, which contributes to financial instability and access to resources. In addition, a lack of knowledge of the languages predominantly spoken in the community could lead to isolation and negative social outcomes.

### Result

The results showed the highest concentrations (where 22% to 39% of the population could experience language barriers) in the Downtown-Eastside of Vancouver, Richmond, and UBC.



## 9. Median Age

### Description

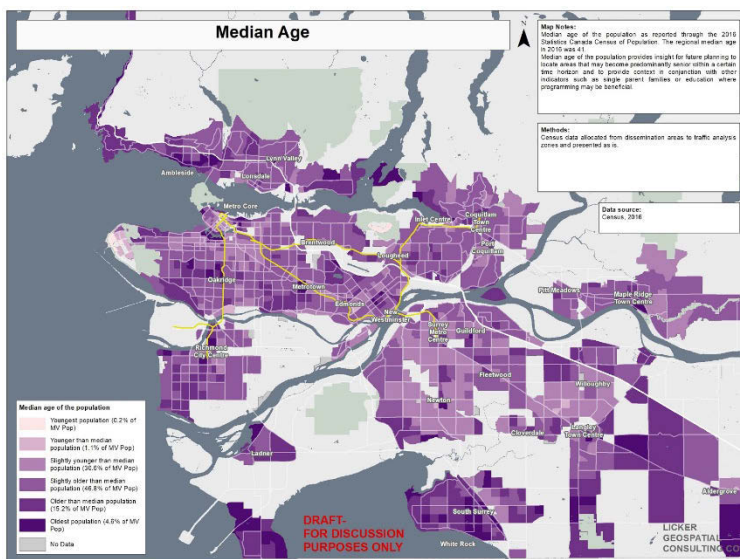
Median age of the population as reported through the 2016 Statistics Canada Census of Population. The regional median for Metro Vancouver in 2016 was 41 years of age.

### Rationale

Median age of the population provides insight into the overall distribution of age across the region and is useful for future planning to locate areas that may become predominantly senior within a certain time horizon and to provide context in conjunction with other indicators such as single parent families or education where programming may be beneficial.

### Result

The results showed the oldest populations for the region in Belcarra, South Surrey, Delta and Richmond. Youngest populations were located at UBC and SFU, due to high student populations. Apart from UBC and SFU, the youngest populations were located in Langley Township (East Clayton) and South Vancouver (Marpole). The overall median age of the population, at 41 years, shows a predominantly middle-aged population in the region.





### 3.4.2 Conditions-related Indicators

Conditions-related indicators are further divided into the following themes: economics, housing, education, environment, access and transportation, social integration and safety, and health. These indicators are functions of the region and can be more or less influenced by regional planning. Generally, the darker the colour of the map gradient, the greater the potential for inequity related to this indicator.

#### Economic

##### 10. Median Household Income

###### *Description*

Median household income is the median total income for households within a traffic analysis zone, as reported through the 2016 Statistics Canada Census of Population.

###### *Rationale*

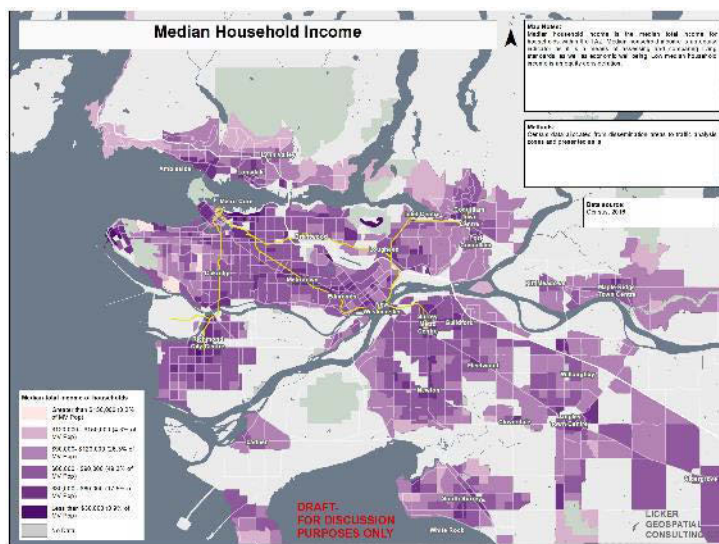
Median household income is a means of assessing and comparing living standards, as well as economic well being. Low median household income is an equity consideration.

###### *Result*

The results show that the majority of instances where median household income is less than \$20,000 annually are found in Vancouver's Downtown Eastside, and one instance in Surrey's Metro Centre.

Other areas with low median incomes (less than \$30,000) are found in Langley City, Vancouver's Downtown Eastside periphery, Richmond City Centre, Maple Ridge Town Centre, as well as UBC and SFU's campuses.

The region has a fairly high overall median income of just over \$72,000, with relatively low variability suggesting that perhaps the region has relatively widespread moderately high median income, or that the large reporting area may be masking areas of economic inequity. It is suggested that other economic indicators such as the Low-Income Measure and Income Inequality Ratio should be considered in conjunction with this indicator.



### 11. Poverty Ratio - Low Income Measure (LIM)

**Description**

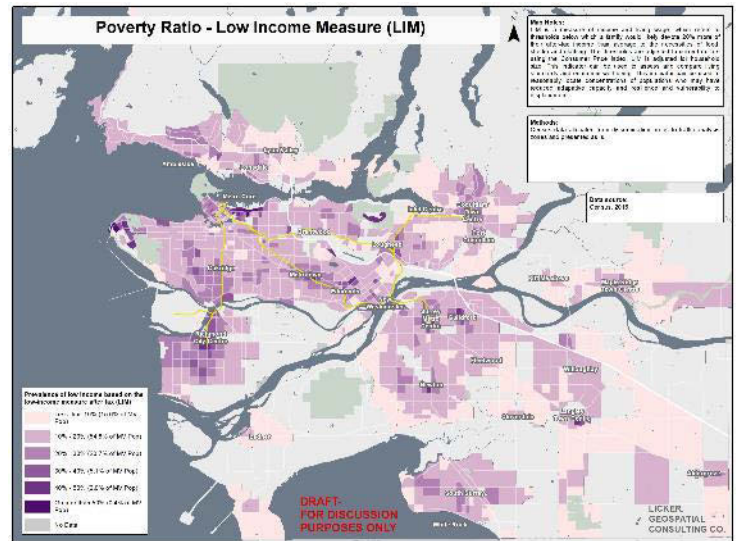
The low-income measure is a measure of income and living wage reported through the 2016 Statistics Canada Census of Population. This measure refers to thresholds below which a family would likely devote 20% more of their after-tax income than average to the necessities of food, shelter and clothing. The thresholds are adjusted to current dollars using the Consumer Price Index. LIM is adjusted for household size.

### *Rationale*

This indicator can be used to assess and compare living standards and economic wellbeing. It is useful to assist in the identification of areas which may have reduced resilience in the face of rapid urban change and/or assist in the identification of populations who may be vulnerable to gentrification and similar associated effects. This indicator can be used to reasonably locate concentrations of populations who are affected by multiple intersecting social inequities.

## Result

The results showed the highest concentrations (where greater than 50% of the population were below the LIM threshold) were found in Langley City, Vancouver's Downtown-Eastside and the university campuses of SFU and UBC. Additionally, Richmond Town Centre, Guildford, Newton, Metrotown and Edmonds, and Langley Town Centre showed concentrations of 40%-50%.



## 12. Unemployment Rate

**Description**

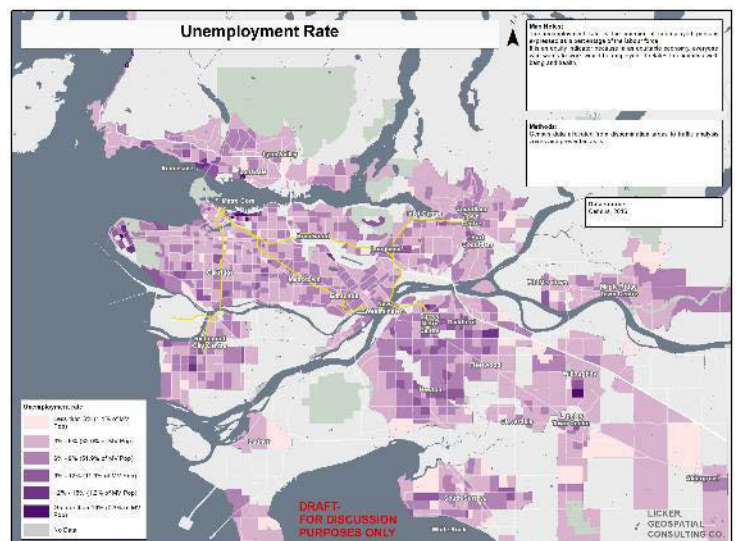
The unemployment rate is the number of unemployed persons expressed as a percentage of the labour force, through the 2016 Statistics Canada Census of Population.

### *Rationale*

In an equitable economy, everyone who wants to work would be employed.  
Unemployment rate relates to economic well-being and health.

## Result

The highest unemployment rate occurs within Vancouver's Downtown-Eastside, at 21.6%. Other areas with greater than 15% unemployment rates include Langley City/Langley Township, Lions Bay, UBC and North Vancouver's Lonsdale.

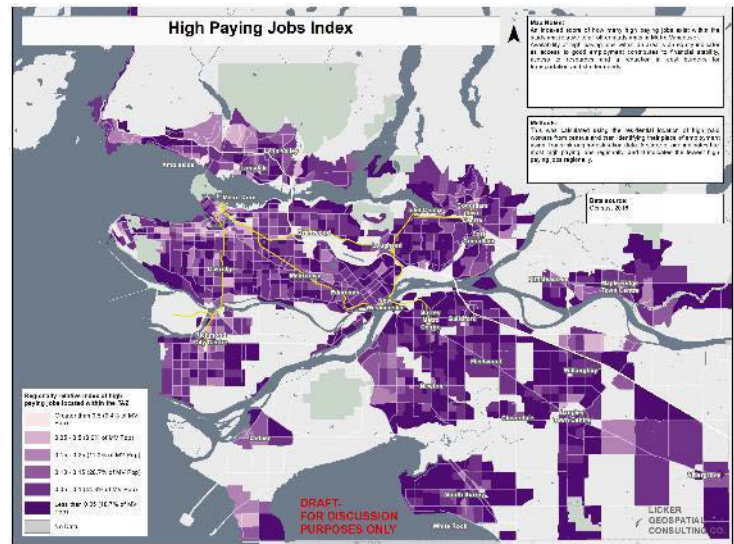




### 13. High Paying Jobs Index

#### Description

An indexed score of how many high paying jobs exist within the study unit relative to all other study units in Metro Vancouver. High paying jobs are those paying a median of \$60,000 per year or greater based on their National Occupational Classification (NOC). This was calculated using the residential location of high paid workers from Census and then identifying their place of employment using TransLink origin-destination data. A score of one indicates the areas with the most high-paying jobs located within the TAZ regionally, and 0 indicates the fewest.



#### Rationale

Availability of high paying jobs within an area contributes to financial stability, access to resources and a reduction in cost burdens for transportation and shelter needs.

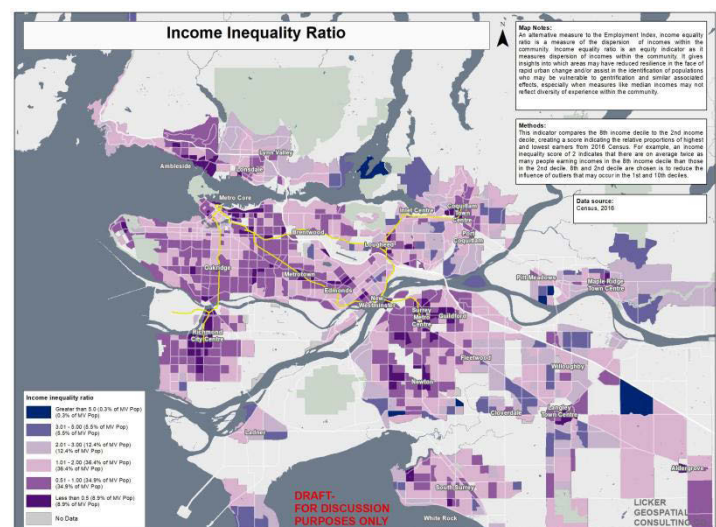
#### Result

Greater instances of high paying jobs (scores of greater than 0.5) tend to occur in core urban areas, such as Vancouver's Metro Core, Burnaby's Brentwood and Metrotown centres, Coquitlam Town Centre, Richmond Town Centre and Guildford. Ambleside and UBC also score relatively high in concentrations of high paying jobs. These are areas with office complexes and/or institutions. Areas with lower rates of high paying jobs occur in more isolated/suburban areas. This indicator was in the top ten for variability, indicating spatial clustering of high paying jobs.

### 14. Income Inequality Ratio

#### Description

An alternative measure to the Employment Index, income equality ratio is a measure of the dispersion of incomes within the community. It compares the 8th income decile to the 2nd income decile, creating a score indicating the relative proportions of highest and lowest earners, calculated through the 2016 Statistics Canada Census of Population. For example, an income inequality score of 2 indicates that there are on average twice as many people earning incomes in the 8th income decile than those in the 2nd decile. The reason the 8th and 2nd deciles are chosen is to reduce the influence of outliers that may occur in the 1st



and 10th deciles, while still preserving the variability that would not occur in the middle deciles. The dark blue areas show where there are far more high income earners than low income earners (up to five-fold) while the dark purple areas indicate where there are more low income earners than high income earners (up to two-fold).

### ***Rationale***

Income equality ratio measures dispersion of incomes within the community. It gives insights into which areas may have reduced resilience in the face of rapid urban change and/or assist in the identification of populations who may be vulnerable to gentrification and similar associated effects, especially when measures like median incomes may not reflect diversity of experience within the community.

### ***Result***

Generally, income inequality tends to be higher in suburban areas. The highest income inequality scores (greater than 5) occur in Surrey, Langley Township and Pitt Meadows, though most municipalities do have areas with high income inequality scores. When examining urban core areas, the highest income inequality is 2.7, and occurs in Vancouver's False Creek neighbourhood. The lower scores, indicating a lower proportion of high-income earners to low-income earners occurs in the urban cores of Langley City and Richmond and Vancouver's Downtown-Eastside.

## **15. Expected Employment Growth**

### ***Description***

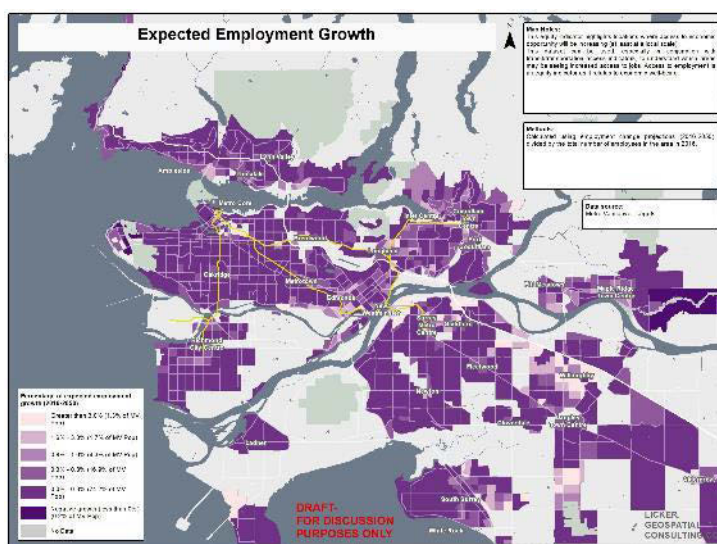
This equity indicator highlights locations where access to economic opportunity is projected to increase (at least at a local scale). It is calculated using employment change projections (2016-2050), divided by the total number of employees in the area in 2016.

### ***Rationale***

This dataset can be used, especially in conjunction with transit/transportation access indicators, to understand which areas may be seeing increased access to jobs. Access to employment relates to economic well-being. Locations of increased employment growth are areas for focus in terms of transportation for commuting to and livability within those areas.

### ***Result***

The majority of Metro Vancouver is projected to experience employment growth or loss within 0-1%. A decline in employment (less than 0% growth) is projected in UBC, a small area in Vancouver's Metro-Core and rural Maple Ridge. Employment growth had the second highest variability of the selected indicators. Areas of high employment growth (greater than 3%) occurred in many of the metro centres including Langley's Willoughby, Lougheed, Surrey and Guildford, Maple Ridge and around Vancouver's False Creek.



## Housing

### 16. Housing Cost Burden

#### *Description*

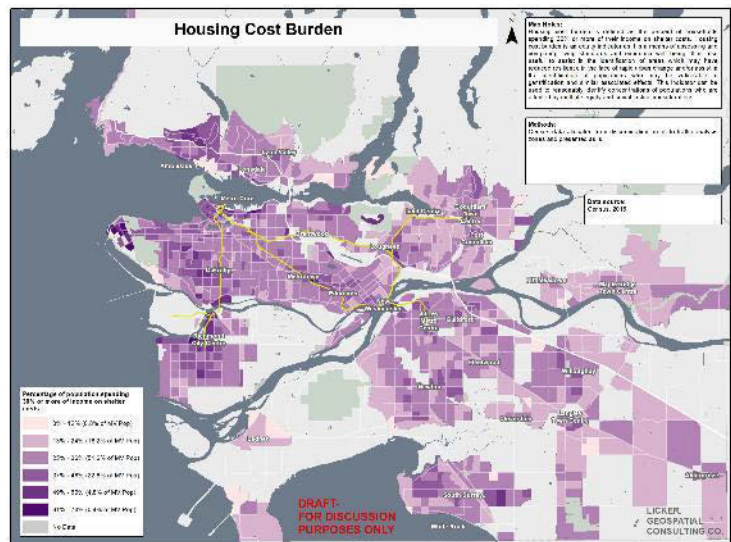
Housing cost burden is defined as the percent of households spending 30% or more of their income on shelter costs, as reported through the 2016 Statistics Canada Census of Population.

#### *Rationale*

Housing cost burden is a means of assessing and comparing living standards and economic well being. It is also useful to assist in the identification of areas which may have reduced resilience in the face of rapid urban change and/or assist in the identification of populations who may be vulnerable to gentrification and similar associated effects. This indicator can be used to reasonably identify concentrations of populations who are affected by multiple intersecting social inequities.

#### *Result*

The highest proportion of households spending 30% or more of income on shelter costs, excluding UBC where we see large student populations, occurred within Vancouver's Downtown-Eastside and Metro Core, as well as Richmond and Burnaby's Metrotown. The regional mean is 30% of the region spending at least 30% of their monthly income on shelter costs, suggesting that nearly a third of the region's population may be struggling with housing affordability.



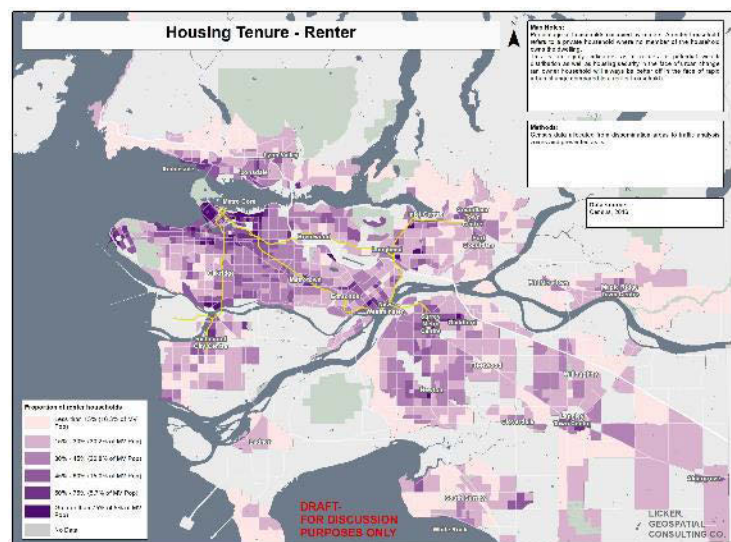
### 17. - 18. Housing Tenure - Renters and Owners

#### *Description*

A renter household refers to a private household where no member of the household owns the dwelling. An owner household refers to a private household where some member of the household owns the dwelling, even if it is still being paid for. This indicator represents the percentage of households that are renters or owners, respectively, and is calculated through the 2016 Statistics Canada Census of Population.

#### *Rationale*

Percentage of renter and owner households relates to potential wealth distribution as well as housing security in the face of urban change (an owner household has greater security of tenure as well as financial equity in their home, which are advantageous in the face of rapid urban change compared to a renter household).





## Result

Urban areas and municipal centres see higher rates of renter households, whereas there are higher rates of owner households outside of urban areas. The highest rates of renters (with greater than 90% of households renting the dwelling) occur in Vancouver's Downtown and Downtown-Eastside.

## 19. Median Home Value

### Description

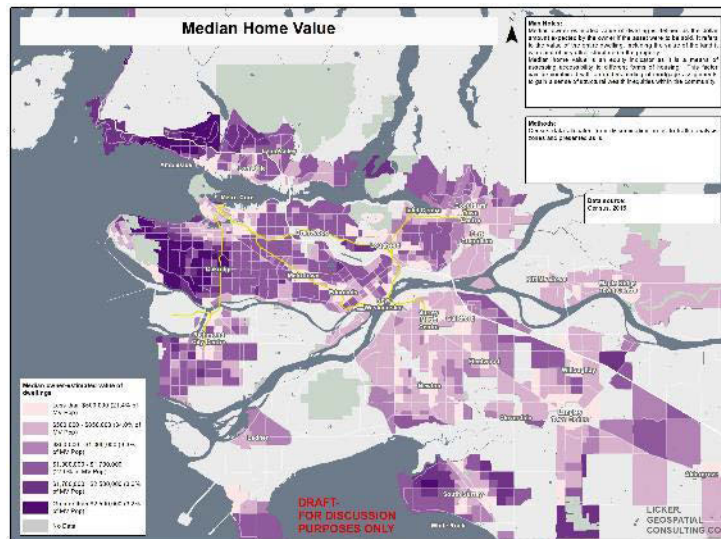
Median owner estimated value of dwelling is defined as the dollar amount expected by the owner if the asset were to be sold. It refers to the value of the entire dwelling, including the value of the land it is on and of any other structure on the property. This data is collected through the 2016 Statistics Canada Census of Population. In this map a darker shade indicates a higher median home value for the TAZ.

### Rationale

Median home value is a means of assessing accessibility to different forms of housing. This factor can be combined with an understanding of mortgage assignments to gain a sense of structural wealth inequities within the community.

## Result

Highest home values occur in Vancouver's western neighbourhoods: Arbutus Ridge, Dunbar Southlands and Point Grey, as well as West Vancouver. The regional median home value was \$800,000 with the above-zero minimum being just under \$40,000 and the maximum being nearly \$4 million.



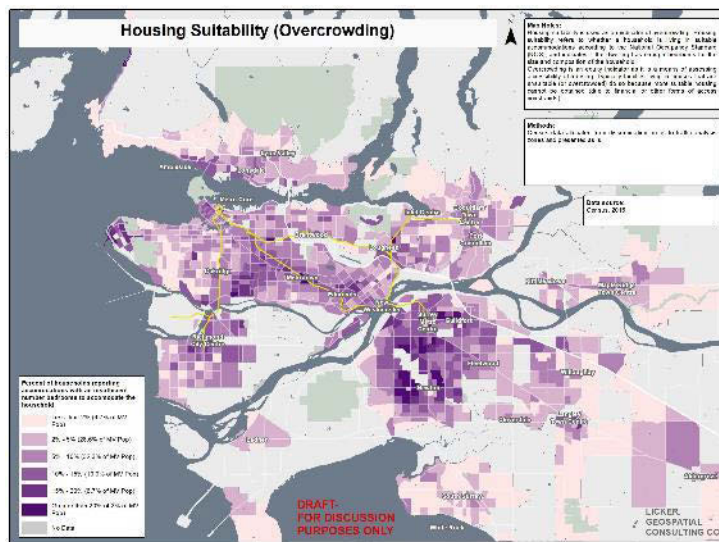
## 20. Housing Suitability (Overcrowding)

### Description

Housing suitability is used as an indicator of overcrowding. Housing suitability refers to whether a household is living in suitable accommodations according to the National Occupancy Standard (NOS), and indicates if the dwelling has enough bedrooms for the size and composition of the household, as measured through the 2016 Statistics Canada Census of Population.

### Rationale

Overcrowding is a means of assessing accessibility of appropriate housing. This indicator is a measure of housing size relative to the composition of a household (age, sex, relationships) and can indicate areas where the



availability or affordability of housing has created situations where persons cannot live in a dwelling with adequate personal space. It is important to note that the term “suitability” is highly subjective as the definition prescribed by National Occupancy Standard may not align with cultural preferences and inter-generational living arrangements.

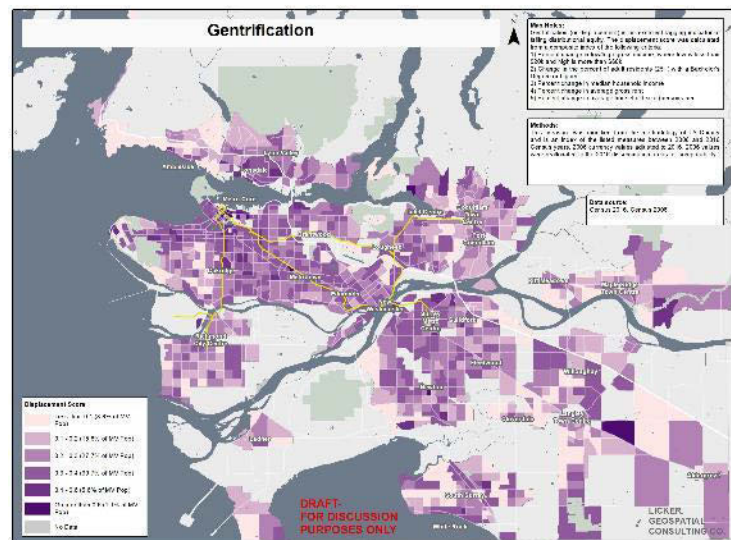
## Result

Greatest percentages of households reporting unsuitable housing, at 25% to 39%, are found in Surrey (Newton, Metro Centre, Guildford) and Burnaby (Metrotown), as well as southeast Vancouver.

## 21. Gentrification Score

### Description

This measure was modified from the methodology used by LA County and is an index of the measures listed below between 2006 and 2016 Census years. 2006 currency values are adjusted to 2016. 2006 values were reallocated to the 2016 dissemination areas for comparability using the modifiable areal unit problem methodology described on page 6. The gentrification score measures the relative likelihood that an area experienced gentrification and involuntary displacement between 2006 and 2016. This measure could be applied for consideration as a future measure by identifying areas with certain criteria as outlined below and ensuring policy mitigation measures for the impacts of neighbourhood change.



- 1) Percent change in low/high gross income, where low is less than \$20k and high is more than \$60k
- 2) Change in the percent of adult residents (25+) with a Bachelor's Degree or higher
- 3) Percent change in median household income
- 4) Percent change in average gross rent
- 5) Percent change in average household size (persons per household)

### Rationale

Gentrification is the involuntary displacement of existing residents due to rising land values and rents. It can be characterized by a rise of more expensive housing, new public amenities, a growth in residential densities, and new businesses. Gentrification is a consideration for regional planners because new residential and employment growth and services (such as public transit investments) can contribute to rising land values, speculation, and the potential for involuntary displacement of existing residents and businesses, especially renters.

## Result

Highest gentrification scores (0.75-1) are found in Vancouver's Metro-Core (east of Granville), Burnaby's Metrotown and Port Moody's loco area.

## 22. Subsidized Housing

### Description

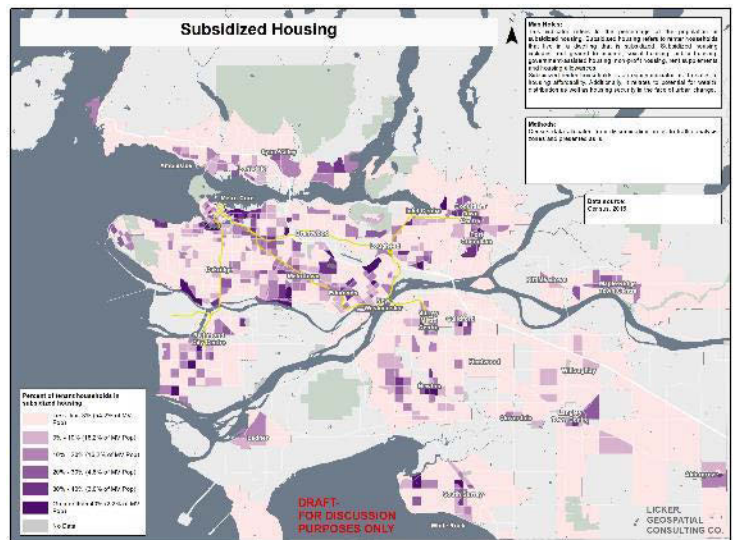
This indicator refers to the percentage of the population living in subsidized housing, through the 2016 Statistics Canada Census of Population. Subsidized housing refers to renter households that live in a dwelling that is subsidized. Subsidized housing includes rent geared to income, social housing, public housing, government-assisted housing, non-profit housing, rent supplements and housing allowances.

### Rationale

Subsidized renter households relates to housing affordability. Additionally, it relates to potential for wealth distribution as well as housing security in the face of urban change.

### Result

Subsidized housing tends to be clustered, with many areas completely without subsidized housing. Areas with greater than 60% of residents in subsidized housing are found in Vancouver's Downtown-Eastside, Surrey (Newton, Metro-Centre and Guildford neighbourhoods) and Burnaby's Cariboo-Armstrong neighbourhood. This indicator was in the top five indicators for highest variability, which indicates the data is highly geographically concentrated and not equitably distributed throughout communities or the region as a whole.



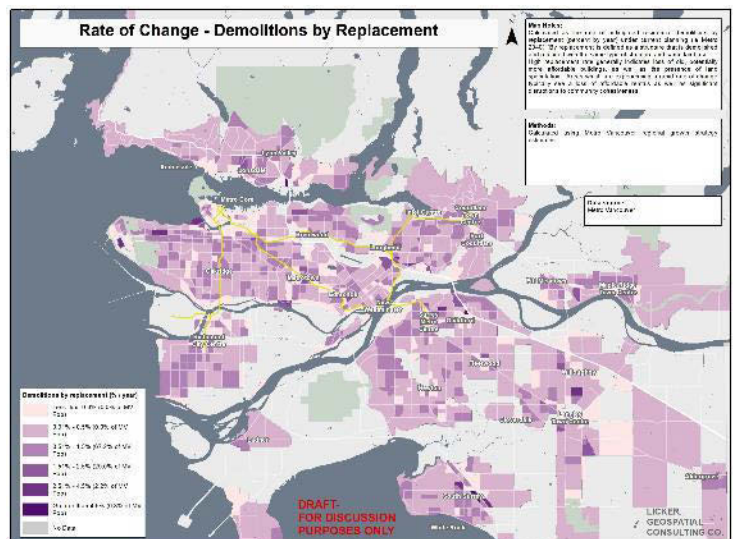
## 23. Rate of Change - Anticipated Demolitions by Replacement

### Description

Calculated as the rate of *anticipated* residential demolitions by replacement (anticipated percent by year from 2016 and 2050) under current planning (i.e. *Metro 2040*). 'By replacement' is defined as a structure that is demolished and replaced with the same type of structure and same land use (e.g. a single detached house replaced by another single detached house).

### Rationale

High replacement rate generally indicates loss of old, potentially more affordable buildings, as well as the presence of land speculation. Areas which are experiencing a rapid rate of change typically see a loss of affordable rentals as well as significant disruptions to community cohesiveness.





## Result

Replacement rates higher than 4.5% are found in South Surrey north-east of White Rock along King George Blvd and Guildford along Highway 1, as well as in North Vancouver proximate to Iron Workers Bridge. Vancouver's West Point Grey neighbourhood, Kits Point, south Lougheed, just east of Surrey Metro Centre and just north of Langley Town Centre were between 2.5 and 4.5%.

### 24. Rate of Change - Anticipated Demolitions by Land Use Change

#### Description

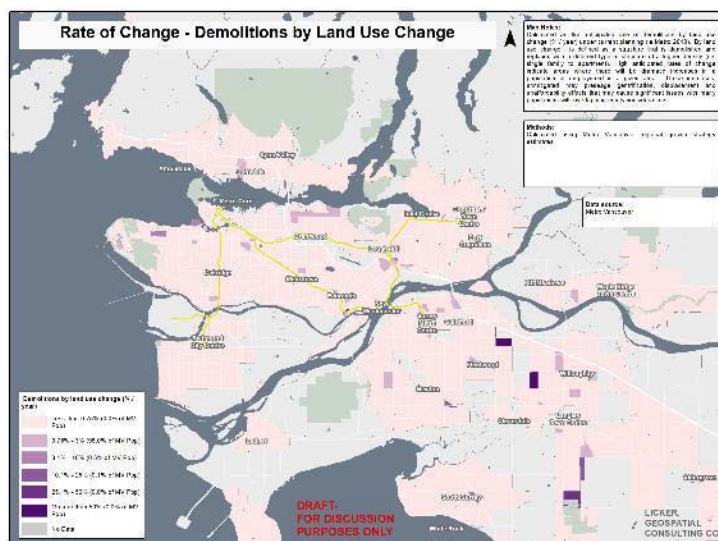
Calculated as the anticipated rate of demolitions by land use change (% / year) from 2016 and 2050 under current planning (i.e. Metro 2040). 'By land use change' is defined as a structure that is demolished and replaced with a different type of structure and land use changed to a higher density (e.g. single detached house to apartment dwelling).

#### Rationale

High anticipated rates of change indicate areas where there will be significant increases in a population or employment in a given area. These increases, unmitigated, may be a warning sign of gentrification, displacement and unaffordability effects that may cause significant issues with many populations with overlapping intersecting social inequities.

## Result

The rate of demolitions by land use change are typically low within Metro Vancouver, with a majority of TAZs with less than a 1% demolition rate. Areas with high rate of demolition by land use change (between 90-100%) are found only in less developed/less urbanized areas within New Westminister, Surrey, South Surrey and Langley. This indicator had the highest variability of all indicators where the majority of the region had anticipated change of less than 0.75%, meaning that most of the land use remained fairly static with more significant changes in very few localities.



## Education

### 25. No Post-Secondary Education

#### Description

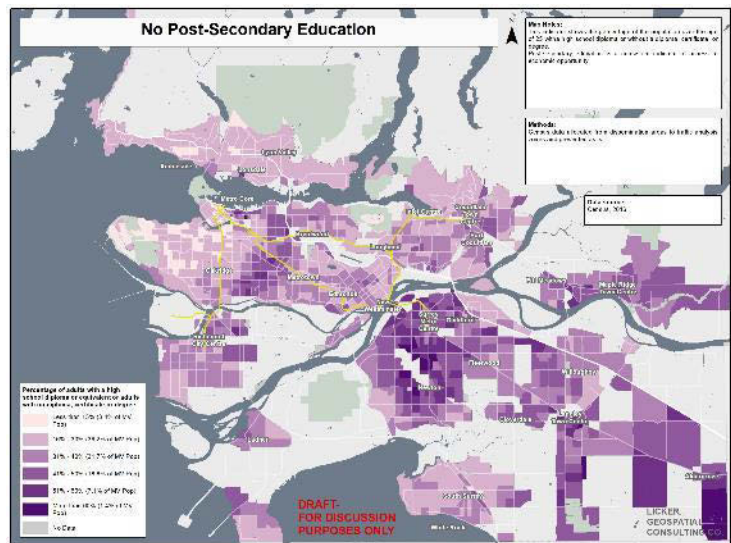
This indicator shows the percentage of the population over the age of 25 with only a high school diploma or without a diploma, certificate, or degree of any kind, as reported in the 2016 Statistics Canada Census of Population.

#### Rationale

Post-secondary education is a consistent indicator of access to economic opportunity.

#### Result

The highest concentrations (more than 60%, of population without post-secondary education) occurred in Surrey's Newton and Aldergrove, with areas in Surrey's Metro Centre, Vancouver's Downtown-Eastside and Victoria-Fraserview having high concentrations (50-60%) as well.



### 26. Early Childhood Development - Language and Cognitive Development - Vulnerable Children

#### Description

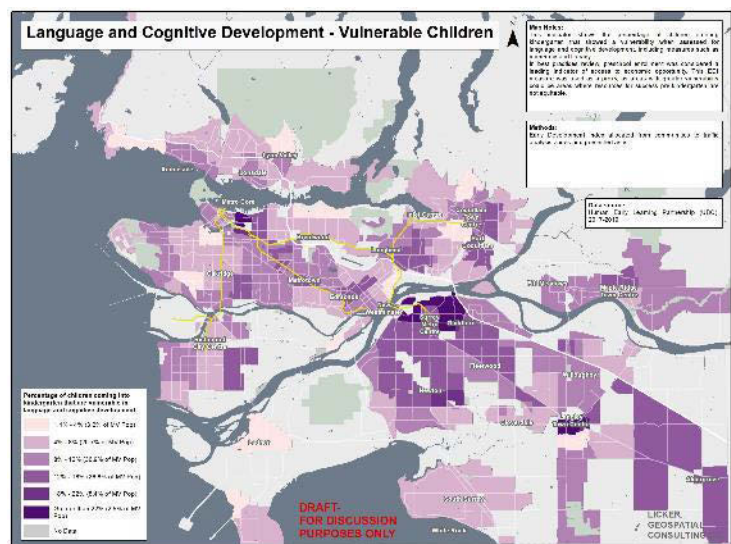
This indicator shows the percentage of children entering kindergarten that showed a vulnerability when assessed for language and cognitive development, including measures such as numeracy and literacy, through Human Early Learning Partnership (UBC) research, 2017-2019.

#### Rationale

In best practices review, preschool enrollment was considered a leading indicator of access to economic opportunity. This measure was used as a proxy as the questions were considered useful predictors for educational outcomes and areas with greater vulnerability could be areas where access to resources for success in pre-kindergarten are not equitable.

#### Result

Higher percentages of children coming into kindergarten that showed a vulnerability in language and cognitive development (between 20% and 24.6%) were recorded in Vancouver's Downtown-Eastside, Surrey (Guilford and Metro Centre), and Langley City.





## 27. Early Childhood Development - Communication Skills - Vulnerable Children

### Description

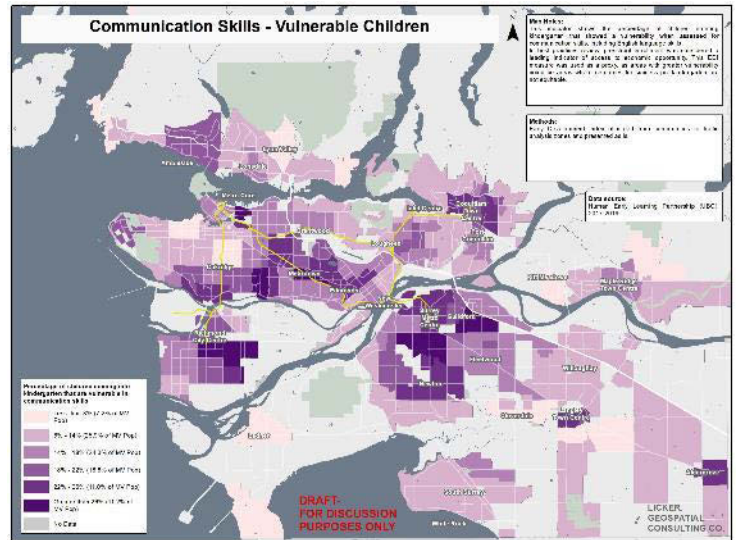
This indicator shows the percentage of children entering kindergarten that showed a vulnerability when assessed for communication skills, including English language skills, through Human Early Learning Partnership (UBC) research, 2017-2019.

### Rationale

In best practices review, preschool enrollment was considered a leading indicator of access to economic opportunity. This measure was used as a proxy as the questions were considered useful predictors for educational outcomes and areas with greater vulnerability could be areas where access to resources for success in pre-kindergarten are not equitable.

### Result

Higher percentages of children coming into kindergarten that showed a vulnerability when assessed for communication skills (between 25% and 33.3%) were recorded in Vancouver's Downtown-Eastside, East Vancouver, Burnaby (Metrotown and Edmonds), Richmond, Surrey and Aldergrove.



## Environment

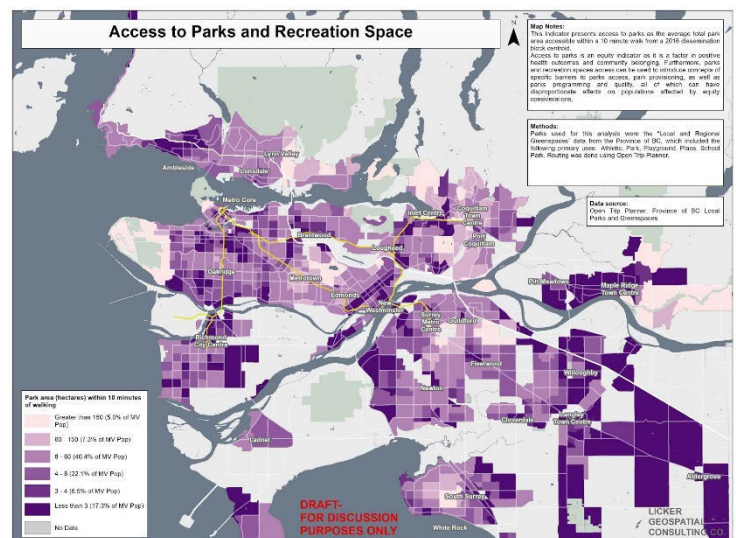
## 28. Access to Parks and Recreation Space

### Description

This indicator presents access to parks as the average total park area accessible within a 10-minute walk from a 2016 dissemination block centroid. Parks used for this analysis were the “Local and Regional Greenspaces” data from the Province of BC, which included the following primary uses: Athletic, Park, Playground, Plaza, School Park. Routing was done using Open Trip Planner.

### Rationale

Access to parks is a factor in positive health outcomes and community belonging. Furthermore, this indicator can be used to identify the need for deeper exploration into parks and recreation access, such as park provisioning, park programming, and quality, all of which can have disproportionate effects on populations affected by intersecting social inequities.



## Result

Best access (greatest area of park and recreation space accessible) occurs proximate to Metro Vancouver's largest parks (namely Pacific Spirit, Belcarra Regional Park, Stanley Park and Lynn Headwaters Regional Park). The greatest clustering of poor access (less than 3.7 hectares available) occurs in Langley Township, Maple Ridge and Richmond. This indicator had high variability due to the wide range in areas accessible, 0 to over 800 hectares. This indicator would benefit from further exploration incorporating park types and amenities.

## 29. Urban Tree Canopy

### Description

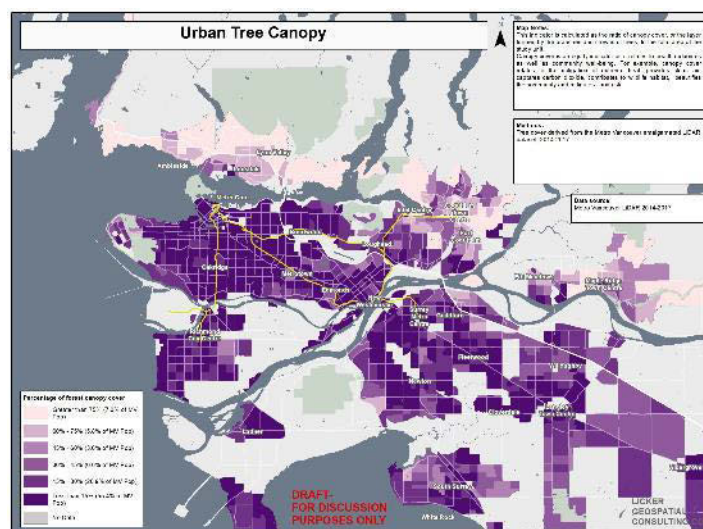
This indicator is calculated as the ratio of canopy cover, or the layer formed by the branches and crowns of trees, to the total area of the study unit, derived from the Metro Vancouver amalgamated LiDAR dataset, 2014-2017. In this map, the darker the colour gradient, the lower the canopy cover.

### Rationale

Canopy cover relates to health outcomes as well as community well-being. For example, canopy cover relates to the mitigation of extreme heat, provides clean air, captures carbon dioxide, contributes to wildlife habitat, beautifies the community and mitigates flood risk.

## Result

Highest tree canopy cover occurs in West Vancouver, North Vancouver and Coquitlam municipal areas. Lowest tree canopy cover occurs in urban centres, like Vancouver's Metro Core, Richmond's City Centre and Langley's Town Centre. Further study on healthy thresholds could be beneficial to determine significant areas (in conjunction with other intersecting social inequities) in the urban areas and focus for tree planting programs. Note that caution should be used that planting doesn't result in unintended "green gentrification," wherein increased tree planting drives up housing costs and potentially results in displacement.



## 30. Access to Grocery Stores

### Description

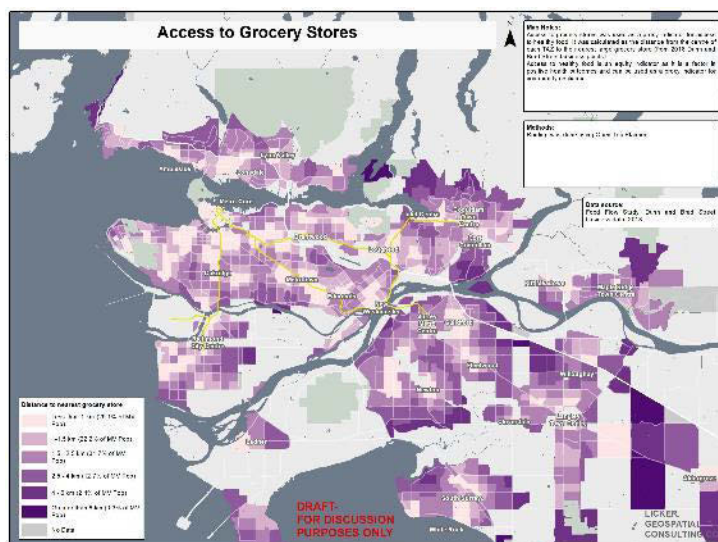
Access to grocery stores was used as a proxy indicator for access to healthy food. It was calculated as the distance from the centre of each TAZ to the nearest large grocery store (from 2018 Dun and Brad Street business points). Routing was completed using Open Trip Planner.

### Rationale

Access to healthy food is a factor in positive health outcomes and can be used as a proxy indicator for community resilience.

### Result

Shortest distances to grocery stores occur in urban centres. Greatest distances to grocery stores occur in more remote locations, such as Belcarra, Lions Bay, and parts of Langley Township and Surrey. Grocery stores seem to be well distributed across the region with access decreasing in more agricultural and rural areas of the region.





temperature ranges across the region, or projected extremes. This indicator is important to review in conjunction with other intersecting social inequities.

## 32. Exposure to Flood Hazard

### *Description*

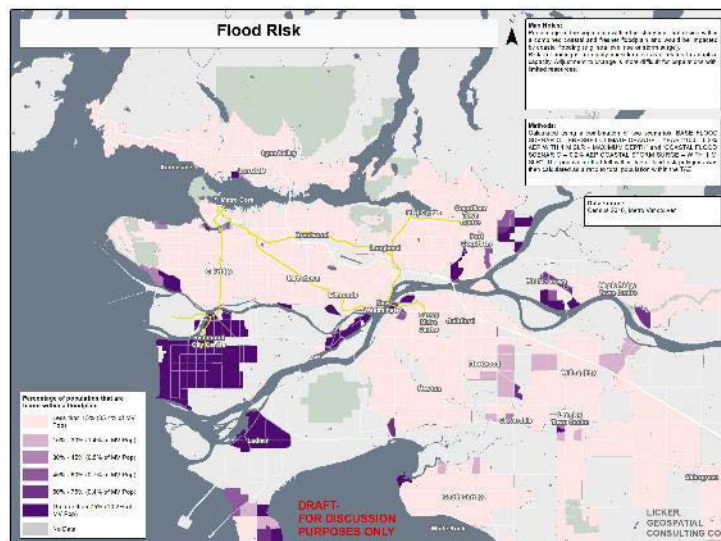
Percentage of the population within the study unit that reside within a combined coastal and freshet floodplain and/or would be impacted by coastal flooding (e.g. 1m sea level rise or storm surge). Note that areas outside the Urban Containment Boundary are also vulnerable to flood hazard but that data is not mapped.

### *Rationale*

Risk to flooding relates to potential vulnerability to property loss or damage, displacement of renters, as well as safety concerns. Adjustment to change is more difficult for renters and / or populations with limited resources.

### *Result*

Richmond and Ladner have the greatest exposure to flooding hazard, with a large number of study units having 100% of residents residing within a risk zone. Other areas of high hazard exposure are concentrated along the Fraser River and Pitt River.

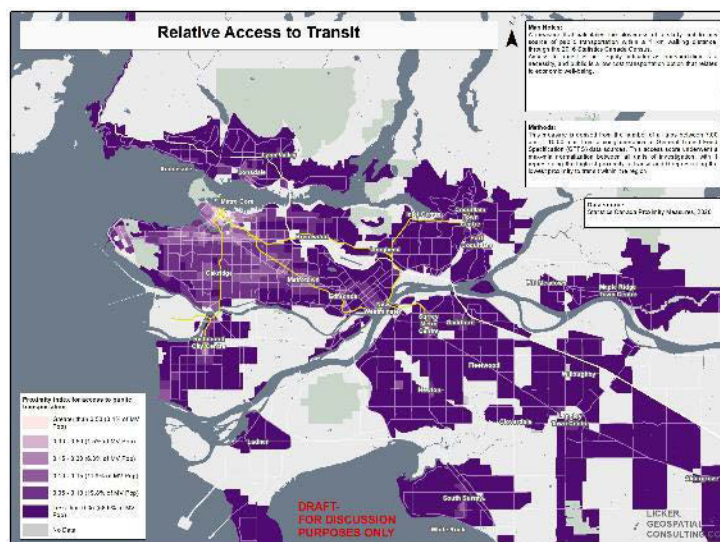


## Access and Transportation

## 33. Relative Access to Transit

### *Description*

A measure that calculates the closeness of a study unit to any source of public transportation within a 1 km walking distance, through the 2016 Statistics Canada Census. This measure is derived from the number of all trips between 7:00 a.m. - 10:00 a.m. from a conglomeration of General Transit Feed Specification (GTFS) data sources. This access score underwent a max-min normalization between all units of investigation, with 1 representing the highest proximity to transit and 0 representing the lowest proximity to transit within the region.



## ***Rationale***

Public transit is a low-cost transportation option available to all ages and abilities that impacts access to economic opportunity. Access to transit signals access to employment (income), education, health, and recreational opportunities for those who cannot drive a personal vehicle due to age, ability, or wealth.

## ***Result***

Transit access scores of 0.5 or higher all occur within Vancouver's Metro-Core. Lowest transit access scores occur in suburban/rural areas not proximate to any major bus or Skytrain routes. This indicator was in the top ten indicators with the highest variability, likely due to the presence of the rapid transit lines serving the inner municipalities.

### **34. Average Commute Time (All Modes)**

#### ***Description***

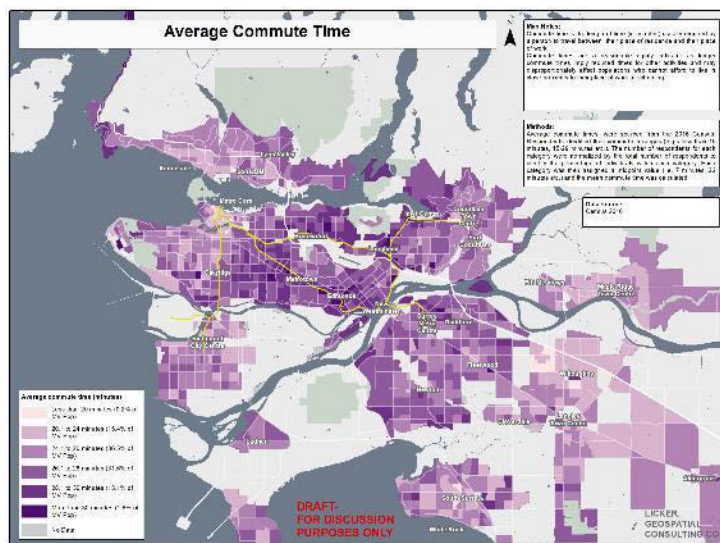
Commute time is the length of time (in minutes) usually required by a worker to travel between their place of residence and their place of work. Average commute times were sourced from the 2016 Census Canada Data. Respondents identified their commute time range as less than 15 minutes, 15-29 minutes, 30-44 minutes, 45 to 59 minutes and 60 minutes and over. Each category was then assigned a midpoint value (i.e. 7 minutes, 22 minutes etc.) and the mean commute time was calculated.

#### ***Rationale***

Longer commute times imply reduced times for other activities and may disproportionately affect populations who cannot afford to live in close proximity to their place of work or schooling.

#### ***Result***

Generally, average commute times are less than 30 minutes within all of Metro Vancouver. Shortest commute times occur in Downtown Vancouver, Langley City and Surrey (Willoughby). Longest commute times (greater than 30 minutes) occur in Burnaby (Metrotown, Edmonds Brentwood and Lougheed).



## 35. Transportation Cost Burden

### Description

Transportation cost burden is defined as the ratio of transportation spending to total household spending, calculated using Environics 2020 spend data.

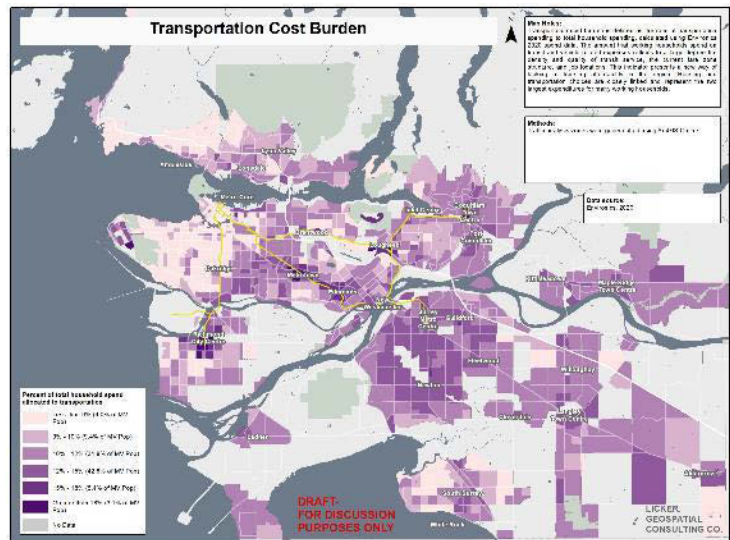
### Rationale

The amount that working households spend on transit and vehicle-related expenses reflects to a large degree the density and quality of transit service, the current fare zone structure, and job locations.

This indicator can be used in conjunction with housing affordability to consider equity. Housing and transportation choices are closely linked and represent the two largest expenditures for many working households. Intuitively, there is a trade-off between housing costs and transportation costs in that as we move to more suburban locations to achieve more affordable housing, transportation costs will increase. This indicator can thus be used with Housing cost burden to identify areas that are spending disproportionate amounts of their total spending on necessities. The greater the proportion of a household's spending is taken up by transportation, the less money is left for other expenses such as housing, childcare, education, savings, and investments.

### Result

Households allocating greater than 20% of their total spending to transportation costs are found in urban cores like Richmond City Centre, Metrotown, Lougheed Town Centre and Coquitlam Regional City Centre. Interestingly, all cases of greater than 20% spend allocation to transportation occur proximate to Skytrain and other transit hubs, with the exception of UBC. Transit is a lower cost form of transportation. This could suggest that lower income commuters (presumably having lower household spending due to income) live in areas with good transit access. This information can be used in conjunction with the average transportation spending data to give further insight.





## 36. Average Transportation Spend

### Description

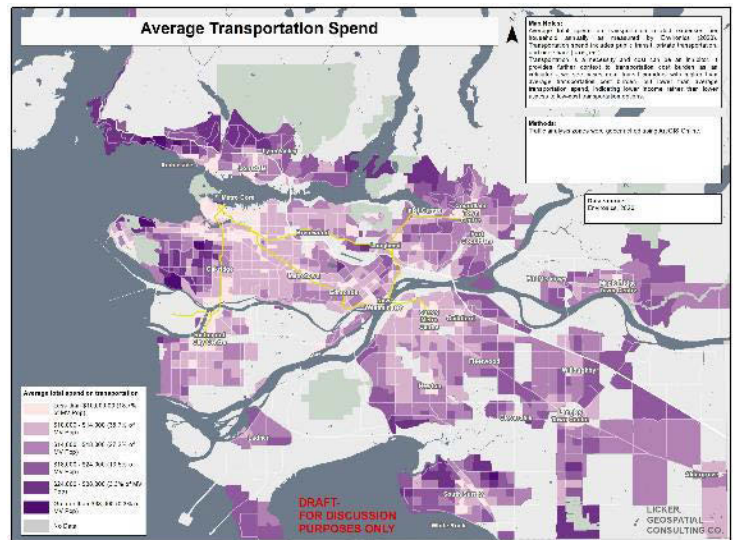
Average total spending on transportation related expenses per household annually, as measured by Environics (2020). Transportation spend includes public transit, private transportation, and shared-use mobility options (taxis, Uber, etc.).

### Rationale

Total transportation spend is an equity indicator as transportation is a necessity. This measure provides further context to transportation cost burden as an indicator. We see cases near transit corridors with higher than average transportation cost burden, but lower than average transportation spending, indicating lower income rather than a lack of low-cost transportation. In future, it would be useful to split this indicator into vehicular spending and transit spending.

### Result

Transportation costs are lower in urban cores and along transit corridors (such as Skytrain lines). Highest transportation costs are found in West Vancouver, and in Vancouver's Dunbar Southlands and Arbutus Ridge neighborhoods. Interestingly, the total spending is low in areas where there is a high transportation cost burden, suggesting that the areas with good transit access and low spending may be typically lower income, resulting in a higher ratio of total spending being allocated to transportation.



## 37. Job Accessibility Within 45 Minutes by Car

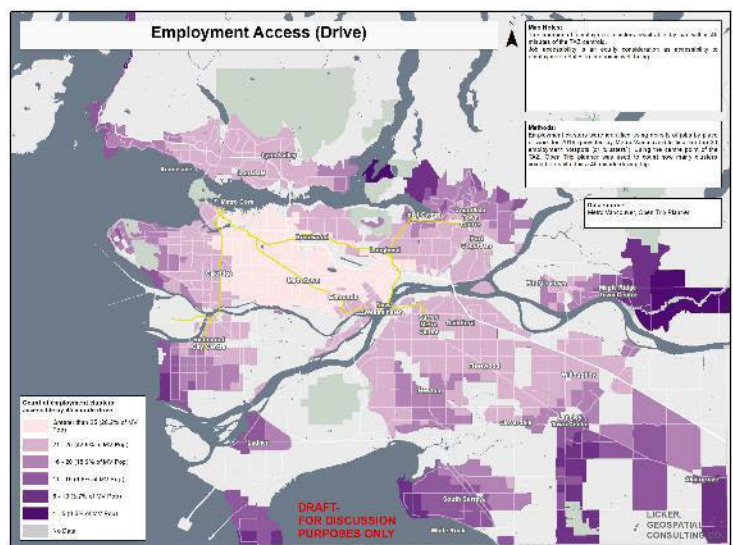
### Description

The number of employment clusters reachable by car within 45 minutes from the centre of the traffic analysis zone using Open Trip Planner. Employment clusters were identified using the highest concentrations of jobs in 2016 (provided by Metro Vancouver) to find the top 30 employment hotspots (or “clusters”). Darker areas show where the fewest number of employment clusters are reachable within a 45 minute drive.

### Rationale

Job accessibility relates to accessibility to employment, linked to economic well-being.

### Result



The highest access to multiple job clusters by driving is found in Vancouver (east of Cambie) and Burnaby. Lowest access to job clusters occurs in the eastern portion of Maple Ridge and in Belcarra. It also suggests locations where a person could readily find other accessible employment should they lose their job, helping to provide a sense of the locations where residents are more resilient to economic uncertainty.

### 38. Job Accessibility Within 45 Minutes by Transit

#### Description

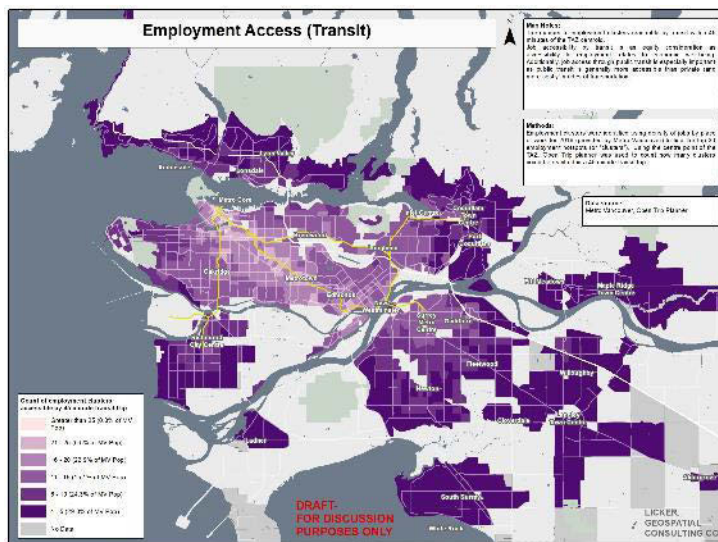
The number of employment clusters reachable by transit within 45 minutes from the centre of the traffic analysis zone using Open Trip Planner. Employment clusters were identified using the highest concentrations of jobs in 2016 (provided by Metro Vancouver) to find the top 30 employment hotspots (or “clusters”).

#### Rationale

Accessibility of employment by transit relates to economic well-being. Additionally, job access through public transit is especially important as public transit is generally more accessible than private (and costlier) modes of transportation. It also suggests locations where a person could readily find other accessible employment should they lose their job, helping to provide a sense of the locations where residents are more resilient to economic uncertainty.

#### Result

Generally, fewer job clusters are accessible through a 45-minute transit trip in comparison to driving. A greater number of clusters are accessible in urban cores along transit corridors. Suburban areas have less access, as well as Maple Ridge and Langley Regional City Centres.



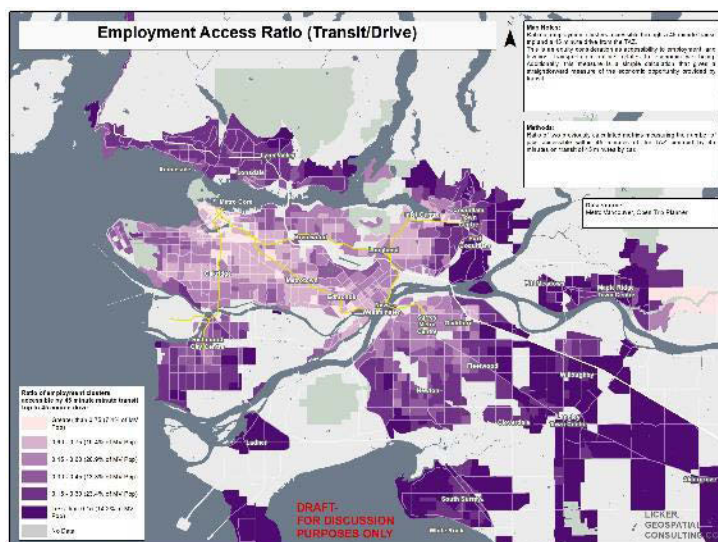
### 39. Ratio of Employment Access Within 45 Minutes: Transit/Car

#### Description

Ratio of employment clusters accessible through a 45-minute transit trip and a 45-minute drive from the geographic centre of the study unit. This measure shows where there is a significant difference between job accessibility by car and job accessibility by transit suggesting locations where transit riders are more vulnerable if they were to lose a job.

#### Rationale

Accessibility to employment and low-cost transportation options relates to economic well-being. Additionally, this measure is a simple calculation that gives





a straightforward measure of the economic opportunity provided by transit. It can be viewed as a proxy for how auto-dependent an area is.

## Result

Similar access to job clusters between driving and transit options occurs in Vancouver and Burnaby, as well as parts of Maple Ridge (where access to job clusters for both driving and transit is low). Low ratio scores (indicating poorer transit access) occur in suburban parts of Richmond, Delta, Surrey and Langley.

## Social Integration and Safety

### 40. Voter Turnout

#### Description

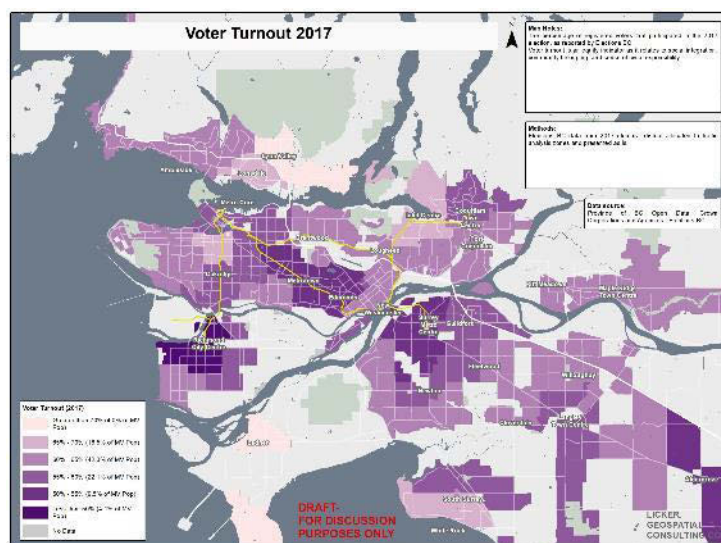
The percentage of registered voters that participated in the 2017 provincial election, as reported by Elections BC.

#### Rationale

Voter turnout relates to social integration, community belonging, and sense of civic responsibility. Further to community belonging, low voter turnout may indicate a lack of representation in local government, leading to a sense of isolation or powerlessness and low voter turnout.

#### Result

Lowest voter turnout (at half or less than half of the registered population) was located in Richmond with highest voter turnout occurring in Lynn Valley.



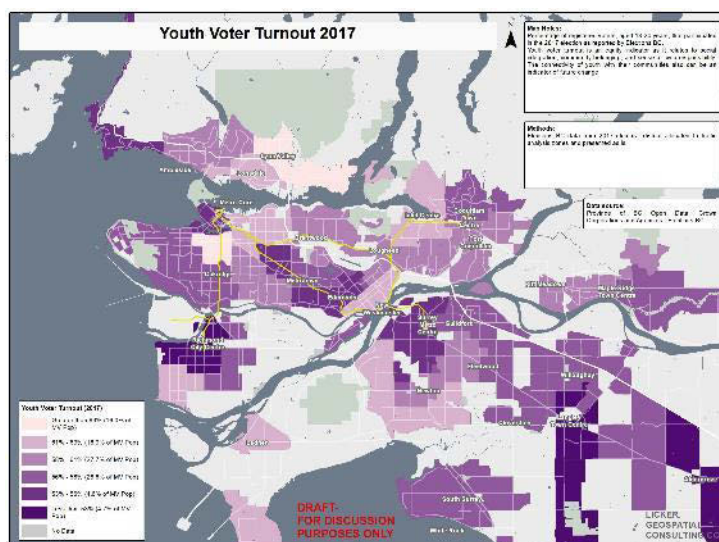
### 41. Voter Turnout - Youth

#### Description

Percentage of registered voters, aged 18-24 years, that participated in the 2017 provincial election as reported by Elections BC.

#### Rationale

Youth voter turnout relates to social integration, community belonging, and sense of civic responsibility. The connectivity of youth with their communities also can be an indicator of future change.



## Result

Lowest youth voter turnout (with nearly half the youth population not participating) occurred in Langley City and Township of Langley, Aldergrove and Richmond.

## 42. Four or More Persons to Confide In

### Description

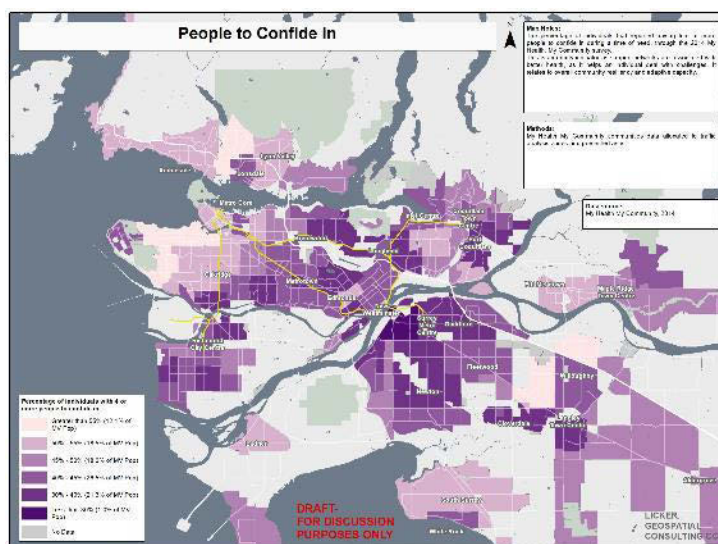
The percentage of individuals that reported having four or more people to confide in during a time of need, through the 2014 My Health, My Community survey.

### Rationale

Support networks are associated with better health. This indicator relates to overall community resiliency and adaptive capacity.

### Result

The results showed the lowest concentration in Surrey, where 30% or fewer of respondents reported having a reasonable support network.



## 43. Strong Sense of Community Belonging

### Description

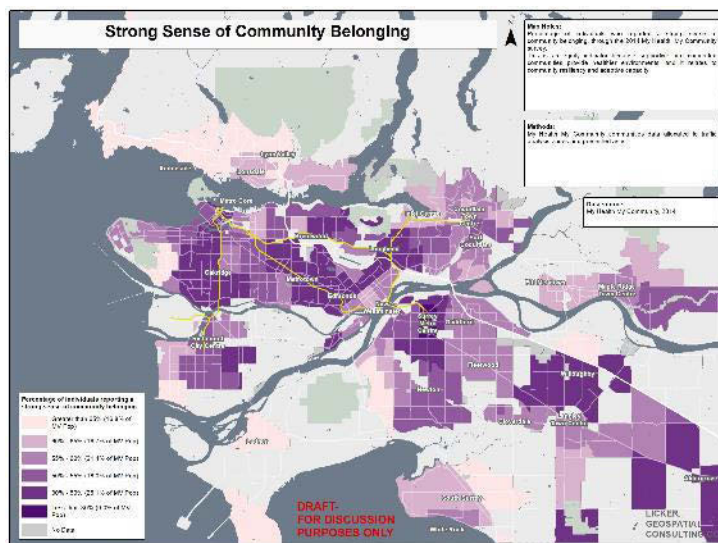
Percentage of individuals who reported a strong sense of community belonging, through the 2014 My Health, My Community survey. In this map a darker gradient indicates lower reported rates of community belonging.

### Rationale

Supportive and connected communities provide healthier environments, and this indicator relates to community resiliency and adaptive capacity

### Result

The results showed the lowest percentages in Surrey Metro Centre, where 30% of respondents or fewer reported having a strong sense of community belonging. The highest rates are in Delta and West Vancouver.





#### 44. Long Term Residency (Mobility Status)

##### *Description*

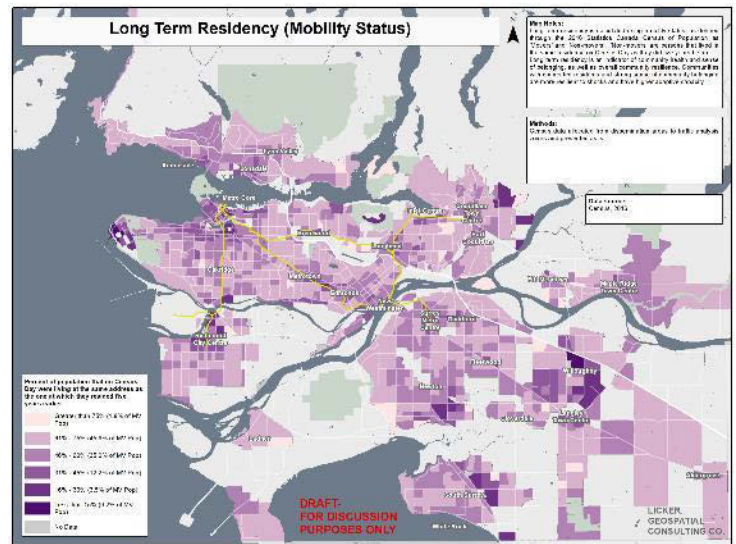
Long term residency is calculated using mobility status, as defined through the 2016 Statistics Canada Census of Population as 'Movers' and 'Non-movers'. 'Non-movers' are persons that lived in the same residence on Census Day as they did five years before.

##### *Rationale*

Long-term residency is associated with higher rates of community health and sense of belonging, as well as overall community resilience. Communities with connected residents and strong sense of community belonging are more resilient to shocks and have higher adaptive capacity. Caution should be used in assuming long-term residency is necessarily the best outcome however, as neighbourhoods with more rental housing are going to see the highest turnover, but provide much needed housing options. Mover status relates to both tenure and life stage.

##### *Result*

Generally, suburban areas see greater percentages of populations that have been residents for 5 years or more. Areas with the lowest percentage of long-term resident populations (with approximately 5% of the population residing in the same residence as they had 5 years prior) are located on UBC's campus and in Langley's Willoughby neighbourhood. Institutional campuses typically see a lot of students, and high turnover of residents is expected.



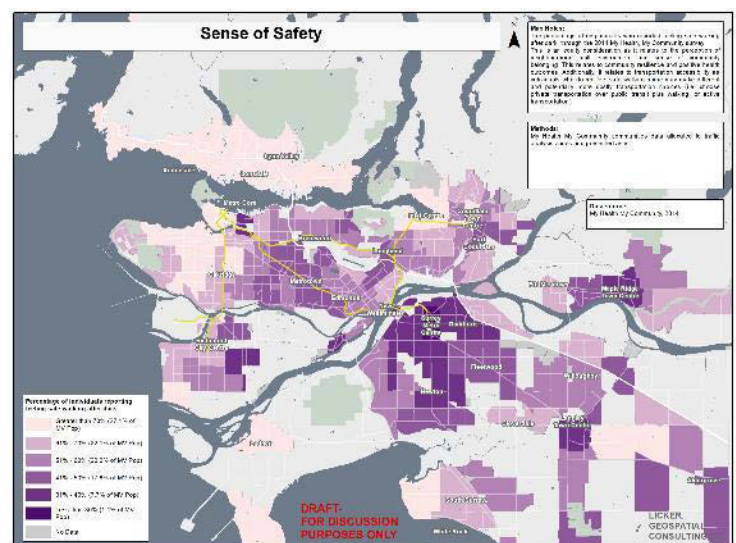
#### 45. Sense of Safety

##### *Description*

The percentage of respondents who reported feeling safe walking after dark, through the 2014 *My Health, My Community* survey.

##### *Rationale*

Sense of safety relates to the perception of neighbourhood built-environment and sense of community belonging. This links to community resilience and positive health outcomes. Additionally, it relates to transportation accessibility as individuals who do not feel safe walking home may make different and potentially more costly transportation choices (e.g. choose private transportation over public transit plus walking, or active transportation).



## Result

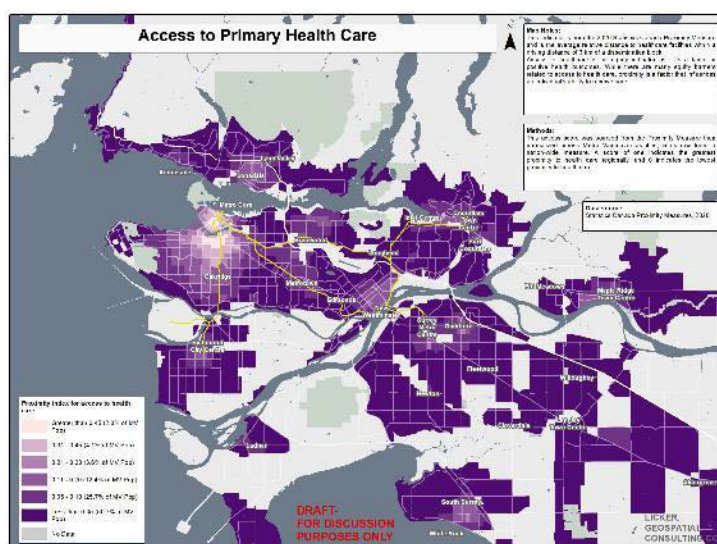
The results showed the lowest concentration (where only 21% to 32% of respondents felt safe walking after dark) in Surrey, most notably the Metro Centre and Newton. Other areas of note (where between 33% and 42% respondents felt safe) are Vancouver's Downtown-Eastside, Richmond and Langley's Town Centre.

## Health

### 46. Access to Primary Healthcare

#### Description

This indicator is from the 2020 Statistics Canada Proximity Measure Database and is the average relative distance to healthcare facilities within a driving distance of 3 km of a dissemination block. Healthcare facilities for this measure include NAICS codes 6211, 6212, 6213 and 622 which are offices of physicians, dentists, and other health practitioners, and hospitals. This access score was then normalized again across Metro Vancouver as it is, in its raw form, a nation-wide measure. A score of one indicates the greatest proximity to health care regionally, and 0 indicates the lowest proximity to health care.



#### Rationale

Access to healthcare is a factor in positive health outcomes. While there are many equity barriers related to access to health care, proximity is a factor that influences an individual's ability to receive care.

## Result

The results showed that access to primary health care is high in Downtown Vancouver (Metro Core) and the Granville and Broadway corridors south of Metro Core. The relative access score declines incrementally with distance from these areas, with slightly higher access scores in the municipal centres. This indicator showed moderate variability. The proximity measure from Statistics Canada utilizes a gravity model, which considers quantity as well as proximity. As such, the area along Broadway south of Downtown Vancouver may be causing a skew for the region due to the numerous health care clinics and the hospital in that area.

## 47. General Health

### *Description*

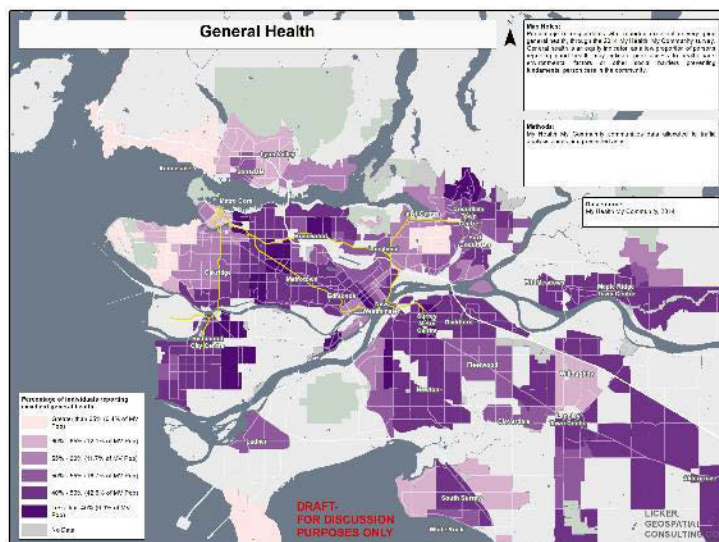
Percentage of respondents who self-reported excellent or very good general health, through the 2014 My Health, My Community survey.

### *Rationale*

A low proportion of persons reporting good health may indicate inequitable social determinants of health, environmental factors or other social barriers to wellness. A measure of general health may reflect numerous social determinants (in addition to personal genetics and lifestyle) such as a person's place in society, income, education, or employment. Experiences of discrimination, racism and historical trauma are important social determinants of health for certain groups such as Indigenous Peoples, LGBTQ and Black Canadians.

### *Result*

The results showed the lowest concentration (where less than 35% of the population reported excellent or very good general health) in Surrey's Metro Centre, east Richmond, East Vancouver, north Coquitlam, Delta along Scott Road and Vancouver's Downtown-Eastside. The mean for the region is 51%, suggesting that 49% of the population does not have very good or excellent health.



## 48. Mental Health

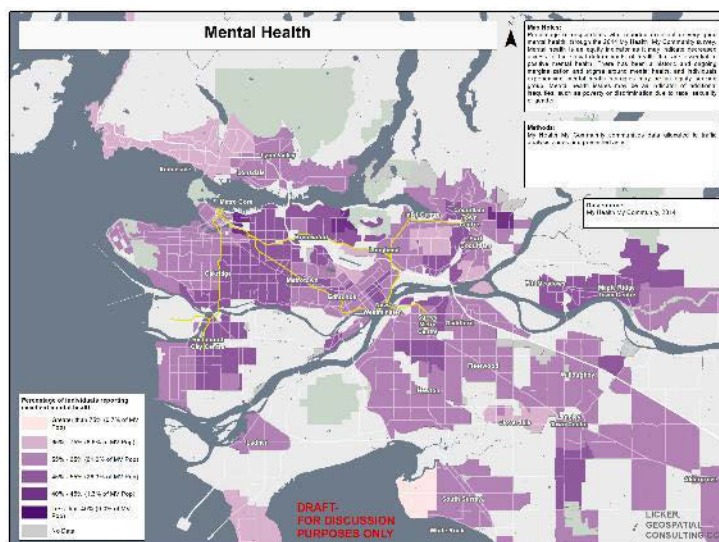
### *Description*

Percentage of respondents who reported excellent or very good mental health, through the 2014 My Health, My Community survey.

### *Rationale*

Mental health may indicate decreased access to the social determinants of health that are essential to positive mental health. Additionally, there has been a historic and ongoing marginalization and stigma surrounding mental health, and individuals experiencing mental health struggles may be social equity context experts. Lastly, equity and mental health are intersectional, and mental health issues may be an indicator of additional inequities, such as poverty or discrimination due to race, sexuality or gender.

### *Result*





The results showed the lowest concentration (where less than 45% of the population reported excellent or very good mental health) in Vancouver's Downtown-Eastside, East Burnaby and Coquitlam.

#### 49. Chronic Medical Conditions (1+)

##### *Description*

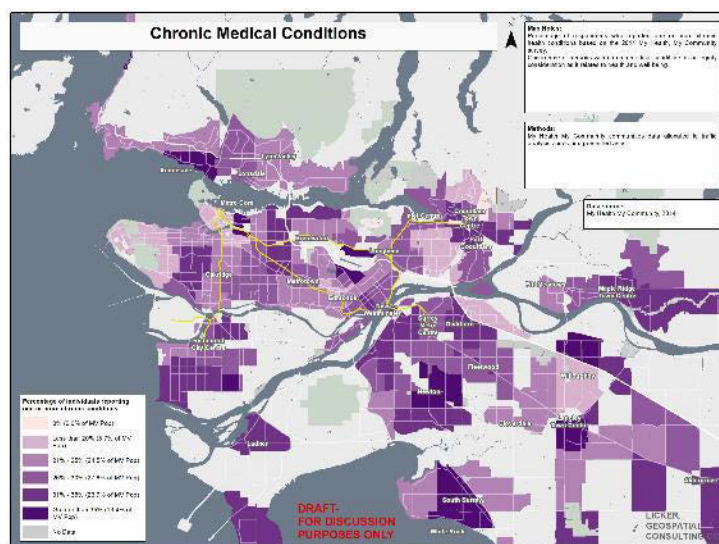
Percentage of respondents who reported one or more chronic health conditions based on the 2014 My Health, My Community survey.

##### *Rationale*

Occurrence of persons with chronic medical conditions relates to health and well-being. Demographic factors (like age) as well as built environment factors such as air quality and walkability may be a determinant of chronic health conditions.

##### *Result*

The results showed the highest concentration (where greater than 40% of the population reported one or more chronic health conditions) in Vancouver's Downtown Eastside, West Vancouver, and South Surrey.



### 3.5 Regional Inequity Index

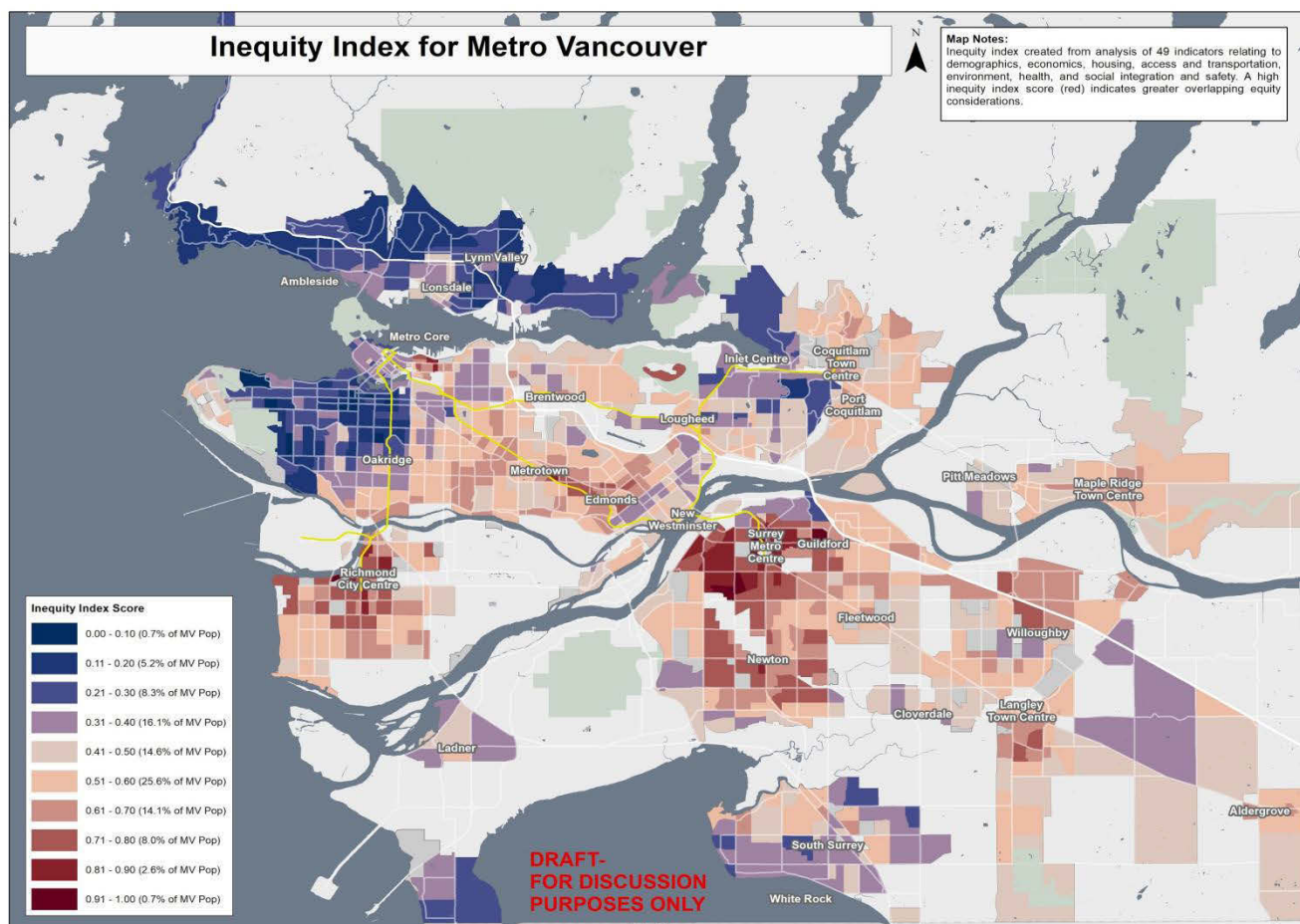
The 49 indicators in the Inequity Baseline above have been combined to create a Regional Inequity Index map. This was done through a mathematical process called a “Principle Component Analysis”. As briefly described earlier in this report, the PCA groups and weighs data based on similarity in variation and the degree of their correlation. This helps identify patterns and consolidates the large amounts of datasets being examined in this study. PCA is described in greater detail in Appendix IV.

A result of running the PCA is an Inequity Index Map that **highlights geographic areas with multiple, overlapping inequity concerns**. A high Inequity Index score signifies more overlapping equity concerns, based on the 49 indicators mapped above.

The index map is a tool that serves two purposes. Firstly, to highlight areas where, from the data we measured, there are several factors that are occurring and are unrelated. In other words, where there are multiple unique factors that could be contributing to inequity in an area (e.g. higher exposure to flood hazard and high childhood vulnerability rates are likely unrelated but could be overlapping factors in a particular neighbourhood, contributing to a higher inequity index score). Secondly, to serve as a focusing tool to support deeper analysis; 49 individual indicators may be an impossible and overwhelming starting point, so a single composite value provides a quantitative arrow pointing at where to look closer. We ran the PCA analysis three times. The first PCA (A) examines all inequity variables discussed in this study. We also created two PCAs where indicators were isolated based on themes. PCA B examined only inequity indicators related to demographics, and PCA C examined conditions.

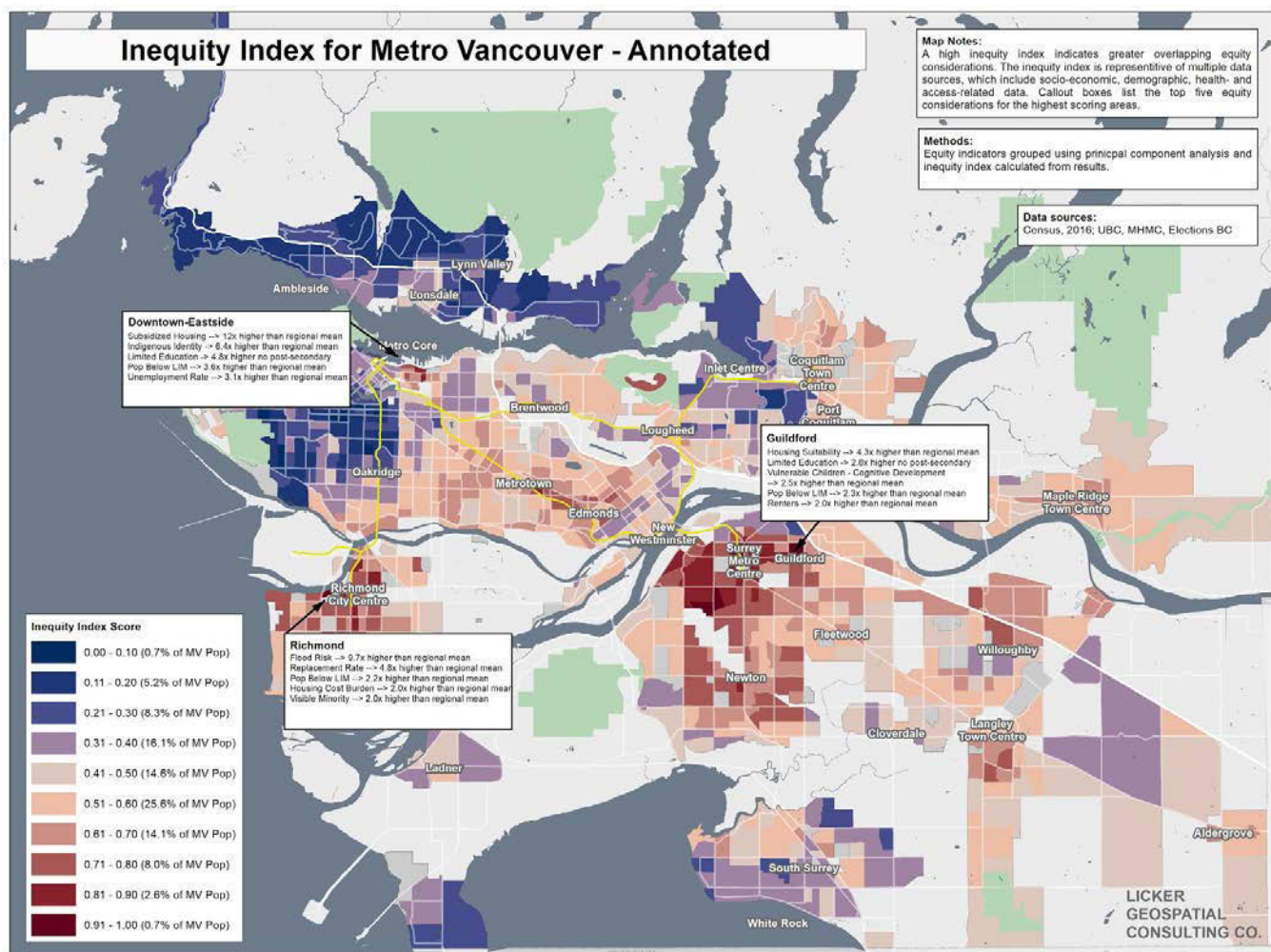
The PCAs give each TAZ geography a score, as shown in the map illustrating PCA A below, where the dark blue is the lowest score and the dark red is the highest score. With so many scores, a bivariate colour scheme like this is needed to be able to distinguish between the different classes. The human eye can't perceive differences between 10 shades of the same colour.

The statistical analysis from the PCA A shown below highlights that the areas with the highest intersecting social inequities occur in areas of Surrey (Guildford, Metro Centre, and just north of Newton), Richmond, Vancouver's Downtown Eastside, and Burnaby's Metrotown.



The following map shows the above PCA again, but with the three of the highest score areas with boxes listing the top five intersecting social inequities with respect to their value above (or below) the mean – Vancouver's Downtown Eastside, Guildford (Surrey), and Richmond. With this map we hope to highlight that while an overarching view of inequities in the region is useful, it is important to assess each locality independently. For example, while all three areas have higher than average population below the low-income measure (LIM) threshold, all three areas face different considerations for housing, varying between high rates of housing subsidies, overcrowding, and high housing cost burden.





## Results Overview

The following section includes the results tables from each of the three PCAs performed for the study. The result tables include the components, the variables in each component, and the loading values. The components group similar variables, based on the variance of the data. This means those variables that have similar effects on the variance and direction of variance, which is important as datasets that are statistically similar will not be overemphasized. Loadings show the degree of correlation of each component, and a component with a larger loading value means that the component heavily influenced the PCA and largely characterized the data.

### PCA A. All Indicators

Table 2. Component input variables and loadings for the overall equity index (PCA A).

Component	Input Variables	Loadings (e)
Component 1	Non-movers, Children, LIM, Median Household Income, Transit Access, Ethnic Diversity Index	4.2
Component 2	Healthcare Access, 4 people to confide in or turn to for help, Feel Safe walking after dark, General Health (excellent)	3.5
Component 3	Total Visible Minority Population, Indigenous Identity, Median Value of Dwellings, Knowledge of Official Languages	2.2
Component 4	Seniors, Median Age	2.0

Component 5	Mean Surface Temperature, Parks Area, Youth Voter Turnout (2017), Employment Access (Drive)	1.5
-------------	---	-----

When all equity variables are considered in a PCA, the components outlined in the above table are determined to be most statistically significant. Non-movers, Children, LIM, Median Household Income, Transit Access and Ethnic Diversity Index were most heavily weighted, as they were in the component group with the greatest loading value (Component 1). This means that out of all 49 indicators, those listed in Table 2 best represented most variance in the data. The directionality of data variance responsible for the greatest spread in data results is Component 1, meaning that those six indicators were the most statistically influential (thus most heavily weighted).

Under this principle component analysis, the resulting index reveals a clustering of areas of high equity concern in Surrey, Richmond, and Vancouver's Downtown Eastside. Lowest equity concern occurs in Vancouver west of Main street, as well as West and North Vancouver. When considering why these patterns occur, it is important to consider which input variables were determined to be most statistically influential and how those variables were weighted. This PCA heavily weighted transportation accessibility (Component 1), which reduced the index score in areas proximate to the downtown core. However, the LIM was also heavily influential, and transportation cores in combination with other equity concerns (such as LIM or percentage of children) also are highlighted in this analysis.

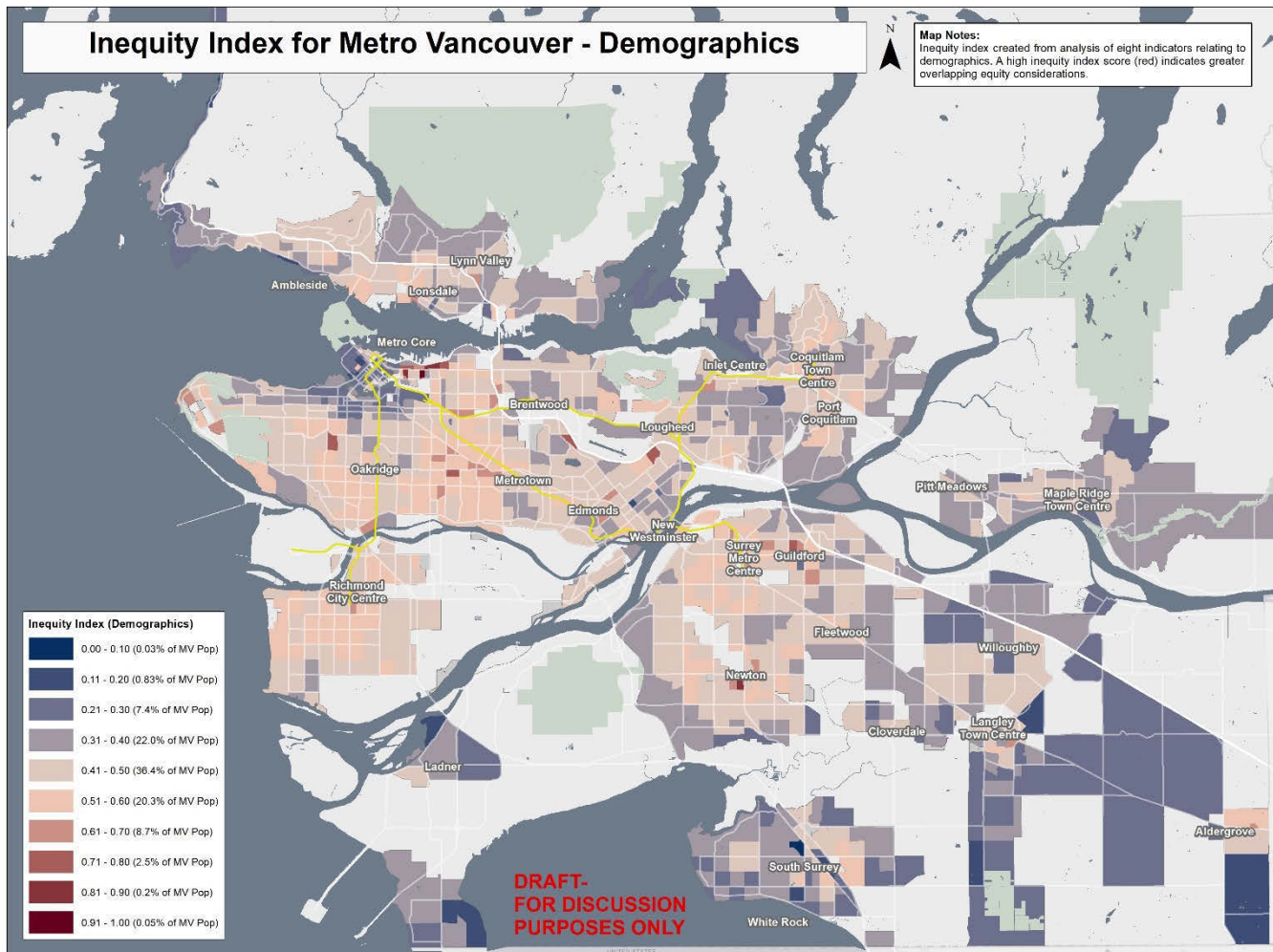
### **PCA B Demographic-related Indicators Only**

Table 3. Component input variables and loadings for the demographic equity index (PCA B).

Component	Input Variables	Loadings (e)
Component 1	Single-Parent Households, Female Single Parent households	2.2
Component 2	Seniors, Median Age of Population	1.9
Component 3	Total Visible Minority Population, Knowledge of Official Languages	1.6
Component 4	Children, Indigenous Identity	1.0

This PCA examined only demographics-related variables. This was done for exploratory analysis to see how the data within the theme of demographics influence overall spread of results. Demographics and conditions were split because demographics cannot directly be influenced by policy. Due to a lower quantity of input variables, all variables were included in the final PCA and only four components were used, as four components were responsible for greater than 70% of the total variance in data. This PCA reveals the area of highest concern is located in Vancouver's Downtown Eastside. Other areas with a high inequity index score occur in Newton, Lonsdale, Aldergrove, Shaughnessy, and UBC.

This PCA provides interesting insight into our equity variables: the demographic inputs highlight areas as overlapping equity concerns that do not score high in any other PCA. For example, the Shaughnessy area's high equity concern is unique to this PCA. This can be attributed to the fact that it has twice the regional average for percentage of seniors, and 1.5x/1.3x the regional average for female-headed households and single parents, respectively. While the area may not be equity-seeking when examining all variables, these isolated PCAs examining single themed intersecting social inequities reveal interesting variability in scoring between themes.



### PCA C. Conditions-related Indicators Only

Table 4. Component input variables and loadings for the conditions Inequity Index (PCA C).

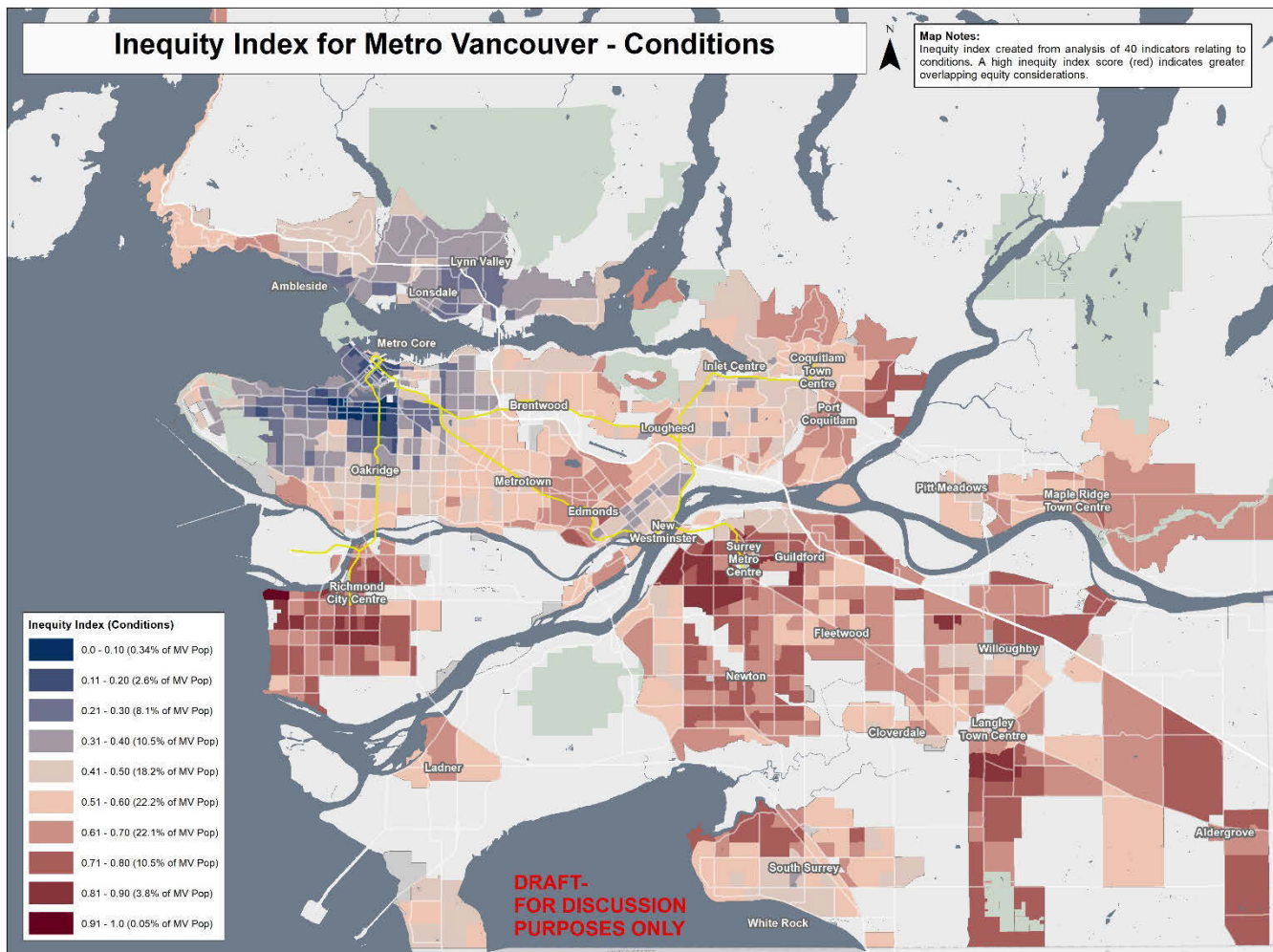
Component	Input Variables	Loadings (e)
Component 1	Renters, Median Income, Total Average Transportation Spend, Total Average Household Spend	5.2
Component 2	Transit Access, Healthcare Access, 4 or more Persons to Confide in, Feel Safe Walking Home, General Health Excellent	3.4
Component 3	Population in SLR, Average Commute Time, Employment Access (Drive), Employment Access (Transit)	1.9
Component 4	Median Value of Dwellings, Voter Turnout, Youth Voter Turnout, Strong Sense of Community Belonging	1.7
Component 5	LIM, Park Area	1.2

This PCA was done for exploratory analysis to see how the data within the theme of conditions influence overall spread of results. Demographics and conditions were split because demographics cannot directly be influenced by policy, while conditions can be. Condition-related equity variables were defined as all variables used in PCA A, excluding those related to demographics, used in PCA B. More broadly, these were defined as variables that describe conditions in a TAZ, rather than the population (demographics). When all condition-related variables are considered, the components outlined in the above table were determined to be most statistically significant. Renters, Median Income, Total Average Transportation Spend, Total Average Household Spend were most heavily weighted, as they were in the component group with the greatest loading



value (Component 1). This indicates that out of all examined indicators, those listed in Table 4 were responsible for the most variance in the data. The directionality of data variance responsible for the greatest spread in data results is Component 1, meaning that those indicators were the most influential (thus most heavily weighted).

Under this principle component analysis, the resulting index reveals a clustering of areas of high equity concern in Surrey and Langley. Lowest equity concern occurs in Vancouver along the Broadway corridor.



### 3.5.1 Demographics and Inequity Index regression

Each of the demographic indicators (excluding ethnic diversity index) were analyzed using linear regression with the conditions index, which was produced through a principal component analysis of all non-demographic indices. This was an exploratory exercise to investigate the relationship between the conditions index (i.e. the predominance of overlapping inequitable conditions) and each measured demographic group in the study. Table 5 shows the resulting r-squared values indicating the extent of correlation regionally between each of the demographic indicators (or sub-indicators) and the Inequity Index for condition-related indicators (PCA C).

The results of the regression indicate the South Asian populations are more likely to live in neighbourhoods with more overlapping condition inequities than other racialized groups (higher r-squared equates to a tighter correlation with the conditions index) while Japanese populations, with a negative correlation value, may be the least likely. Children had the highest correlation value with the conditions index, suggesting that increasing concentrations of children are present in areas with increasing inequitable conditions: as the density of children increases, so does the presence of inequitable conditions.

Interestingly, populations below LIM shows very weak correlation to the conditions index, suggesting there is more study required to identify their inequity. For this exercise, we are looking at a composite of conditions that

best reflects the maximum of non-overlapping regional variation in the MVRD. Some elements that do not vary significantly or are cross-correlated are not included in the conditions index, however those elements would likely highly correlate with LIM in many instances. An initial analysis shows that regionally LICO correlates strongly with:

->Housing Cost Burden 0.78

->Renters 0.64

->Subsidized Housing 0.46

and

->Have Not Moved in 5+ Years -0.46

->Income Inequality Ratio -0.62

->Median Household Income -0.7

Table 5: Demographic Indicators and associated R-Squared values

Demographic Indicator	R-Squared
Children	0.45
South Asian	0.36
Visible Minority (Racialized Persons)	0.28
Filipino	0.17
Single Parent Families	0.14
Black	0.12
Female-Headed Households	0.11
Southeast Asian	0.09
Chinese	0.08
Seniors	0.06
Arab	0.05
Indigenous Peoples	0.03
Population Below LIM	-0.07
Korean	-0.08
Latin American	-0.18
West Asian	-0.27
Japanese	-0.28

### 3.5.2 Comparisons: Bivariate Analysis

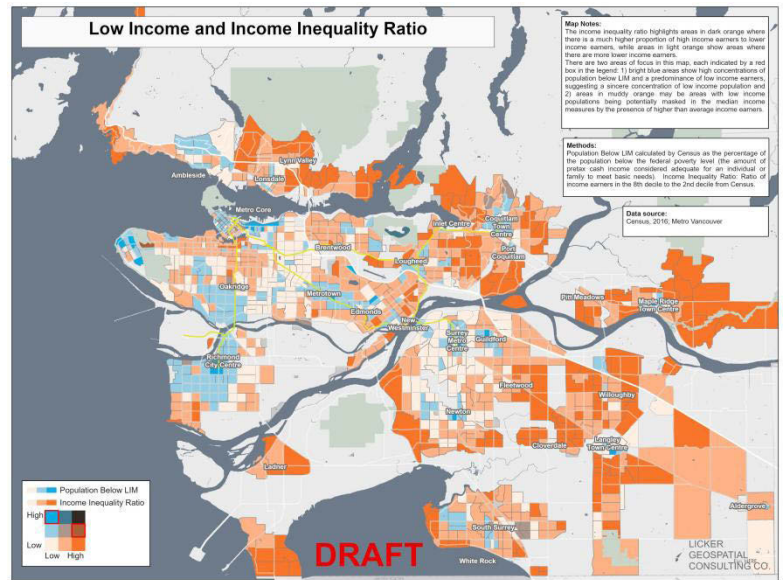
The following section discusses four bivariate maps created to analyze the relationship between select indicators to explore potential insights into the region. Bivariate analysis is a technique by which two indicators can be interpreted together at the same time. It can be used to highlight two overlapping inequity considerations

and can help to progress understanding of inequity using indicators that may not necessarily represent an inequity on their own.

### Low Income and Income Inequality Ratio

This bivariate analysis shows the population below the low income measure (LIM) and the income inequality ratio, which was a calculated ratio of the proportion of the population in the 8th income decile and the 2nd income decile (both measures were from variables in the 2016 Census.)

High values for the income inequality ratio show areas where there is a very high proportion of high income earners to low income earners, while a low income inequality ratio indicates a higher proportion of low income earners. The highest value for the region was 8.5 in Belcarra and the lowest value was 0.04 in Langley City. The highest concentration of population below LIM was 0.66, occurring in both Langley City and Vancouver's Downtown Eastside.

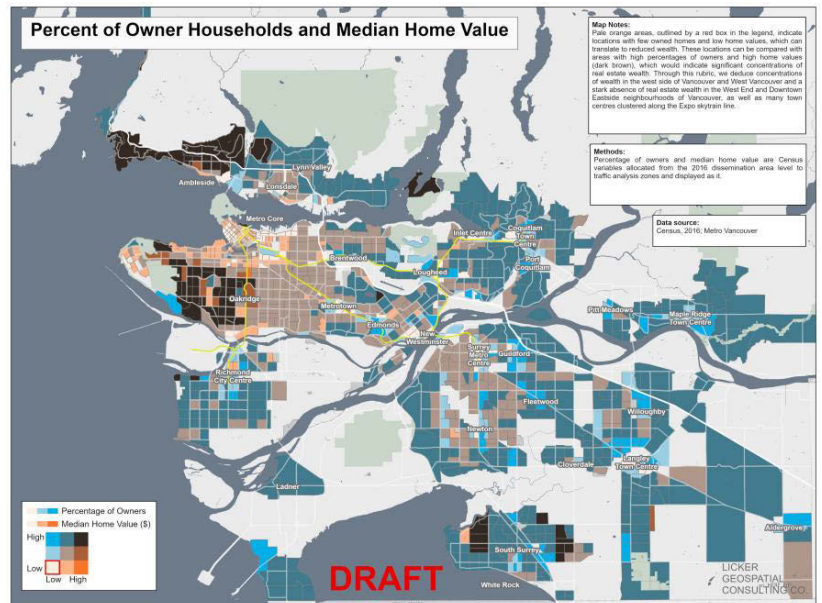


The bivariate analysis reveals two results of interest. Firstly, it highlights areas where there is a high concentration of population below LIM as well as a low income inequality ratio, suggesting a concentration of low income population. These areas are in many of the region's urban centres, including Langley City, Surrey's Newton and Guildford, Burnaby's Edmonds and Metrotown, Richmond, and Vancouver's Downtown Eastside. We also see this occurrence at UBC due to the presence of low-income students. Secondly, areas with high concentrations of low income population that may be otherwise masked by a measure such as median income due to the presence of higher than average income earners become more apparent through the bivariate analysis. These such areas occur in Vancouver's Arbutus area, likely again due to the presence of students, as well as in South Surrey and in areas of Vancouver's Metro Core. This is shown also in northern Coquitlam, possibly due to the presence of retirees.



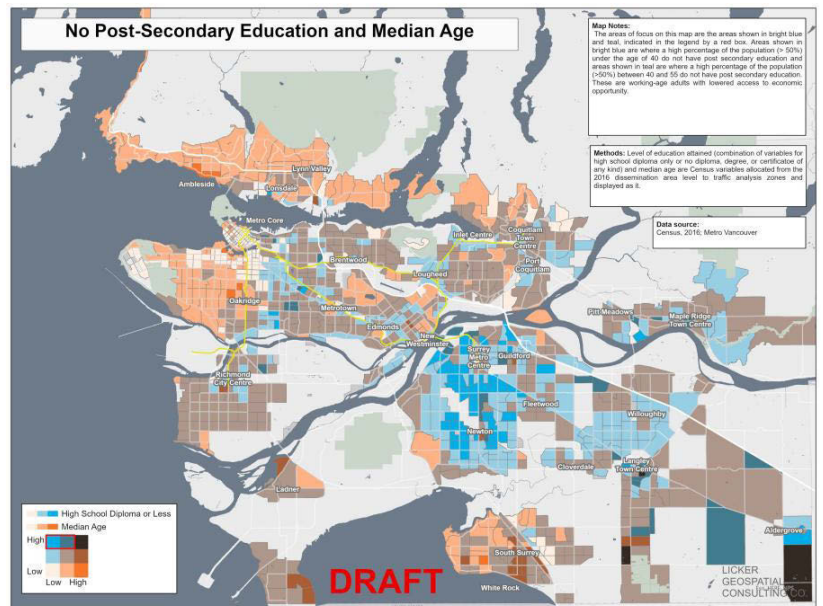
## Percent of Owner Households and Median Home Value

This bivariate explores the relationship between the percentage of owners and median home value. Both indicators were from the 2016 Census. The highest percentages of owners in the region are 97-100% and occur primarily in West Vancouver, Vancouver's West side, Belcarra, and South Surrey. In South Surrey, there are also some of the highest median home values in the region, valued in the data at just under \$2 million. These areas, with high ownership and high median values, indicate areas of significant real-estate wealth. Conversely, the bivariate analysis also highlights areas with lower home values (less than \$500,000) and few owned homes, which may indicate reduced wealth. Through this rubric, areas with significant concentrations of wealth occur in the west side of Vancouver and West Vancouver and a stark absence of real estate wealth in the West End and Downtown Eastside neighbourhoods of Vancouver, as well as many town centres clustered along the Expo SkyTrain line, such as Burnaby's Metrotown, New Westminster and Surrey Metro Centre.



## No Post-Secondary Education and Median Age

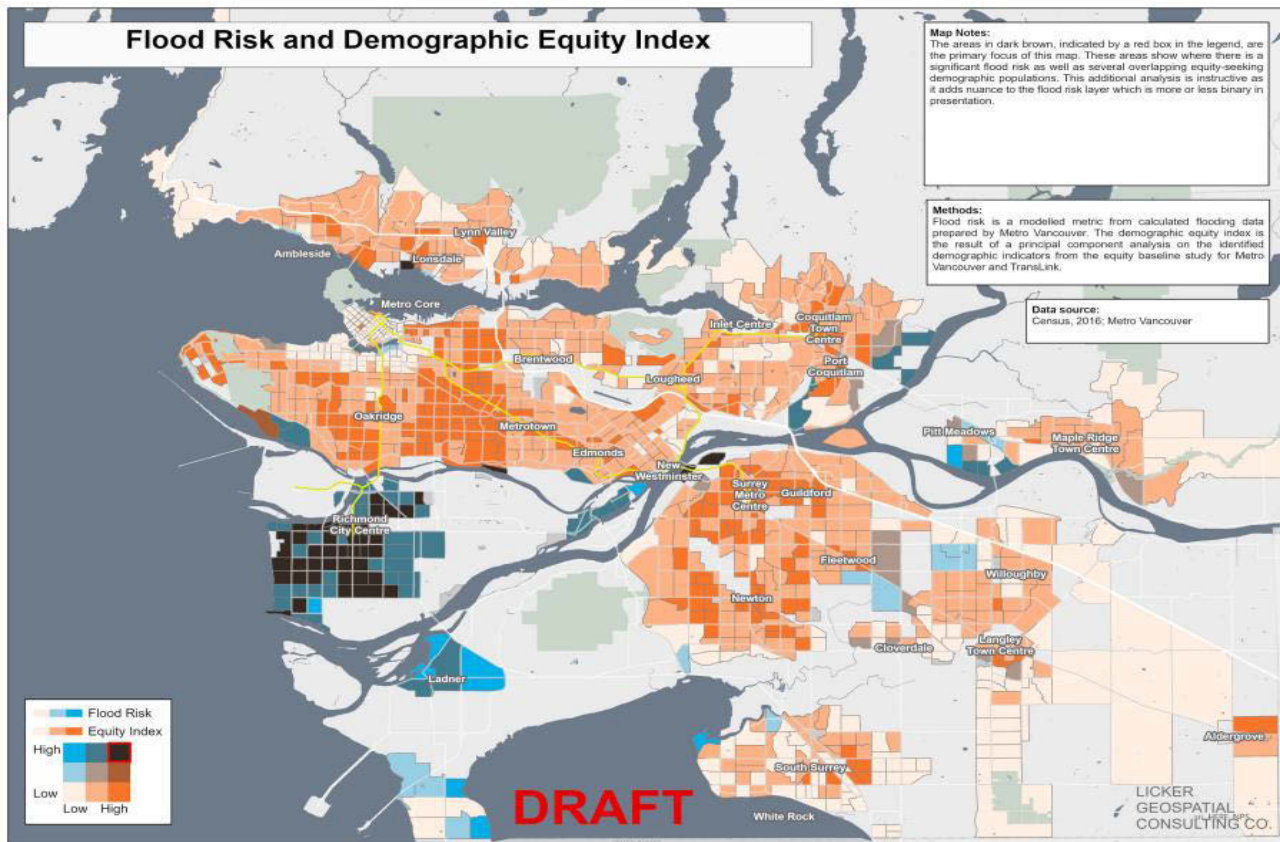
This bivariate explores the relationship between populations (aged over 25 years) with only a high school diploma or no diploma, degree, or certificate of any kind (i.e. no post-secondary education) and median age. The driving concern for this map is exploring areas where there is a high concentration of population with limited education, a barrier to economic opportunity, and a predominance of working-age population (25-50), who most require economic opportunity. To underline this statement, for example, populations over 55 without post-secondary education would be less of a concern for planning employment area through land use moving forward as these are populations likely moving towards retirement and no longer seeking employment opportunities to support themselves or their families. From this analysis, we see high concentrations of population without post-secondary education between the ages of 25 and 40 widely across Surrey, as well as in specific areas of Pitt Meadows, Burnaby and south-eastern Vancouver. There are also high concentrations of population with no-post secondary between 40 and 55 across Surrey, though to a lesser extent than the previous age group, Langley City, Pitt Meadows and Maple Ridge, Richmond and Burnaby.





## Exposure to Flood Hazard and Demographic Equity Index

This bivariate explores the relationship between the modelled exposure to flood hazard, from Metro Vancouver, and the demographic equity index produced from a principal component analysis of the demographic indicators identified through this project, excluding the ethnic diversity index. This analysis provides more nuance to the flood hazard indicator by highlighting areas where adaptive capacity of multiple population groups may be reduced. For example, there are particular areas of Richmond that may have populations with reduced adaptive capacity, while the entirety of Richmond had been identified as having high risk of flooding, as well as the Bridgeview area of Surrey and North Vancouver's Harbourside. These are areas where further investigation into the barriers to resilience for populations in these areas would be important.



## 4. Listening & Learning Engagement Report

### 4.1 Description

The Listening & Learning engagement sessions were developed to support participants and ensure a safer space. A safer space means that we do all we can to support participation in the session in a manner that reduces harm and expands dignity. Participants and facilitators listened and learned with each other as stories were shared of lived experiences, holding space together for potentially challenging conversations. The design of the engagement was informed by a public engagement guide developed by Simon Fraser University's Morris J. Wosk Centre for Dialogue, titled '[Beyond Inclusion: Equity in Public Engagement](#).'

The format for the sessions was designed to be fluid and honour the participants' status as wisdom holders who took time to share personal information about their lived experiences with inequity in the region. The sessions lasted 2.5 hours when conducted in a small group setting, and between 60-90 min when done as individual interviews. All sessions were conducted virtually, using Zoom video conferencing. Participants were provided with honorarium following the sessions, in recognition of their time and wisdom.

Prior to the sessions, participants were sent a 'Preparation Kit' that oriented them to the sessions, provided some tools and resources to help with difficult conversations and the potential triggers that may arise, and asked if any support was needed to help participants with accessibility, cultural safety, or other needs. The consulting team were prepared to offer support for:

- Child-Minding
- ASL Interpretation
- Language Interpretation
- Counselling support
- Other access needs on a case-by-case basis

### Listening and Learning Session Agenda

1. Introduction - Participants shared their identities and context to begin the conversation.
2. Breakout and Open Group conversations with writing prompts and somatic/body-based cues to answer questions related to:
  - a. A definition of social equity relevant to their experience.
  - b. Where inequities are showing up in their day-to-day (with guiding prompts around topics related to regional growth/land use, and transportation).
  - c. What a "socially equitable" region might mean for their identities and experiences.
3. Open reflections about the Social Inequity Index

A more detailed description of the agenda is provided in Appendix VI.

### 4.2 Participants

Due to the project constraints, a targeted recruitment approach was used to adapt to the short timeline and limited budget, while allowing for robust engagement. The consultant team used the following principle to guide participant selection (more information on this decision is included in Appendix VII):

*Our priority is to hear the voices of racialized people (Black, Indigenous and People of Colour) as well as lesbian, gay, trans, queer, 2 Spirit people (LGBTQ/2S) within an intersectional framework that acknowledges how other elements of identity such as class, ability, age, and immigration status produce different experiences and unequal outcomes.*

Within these populations, it was important to hear from a mix of subject matter experts who work professionally in the fields of social equity, regional growth and transportation (such as urban planners, decision-makers, and policy analysts), as well as members of the public. Subject matter experts were recruited through the professional networks of the consulting team, while members of the public were recruited via referrals from social service agencies in the region that provided services to racialized communities and/or LGBTQ2S populations. All participants were asked to speak from their own personal experiences, rather than attempting to represent their employer or organization, or the experiences of others with similar identities. Group sessions were a mix of both subject matter experts and members of the public.

It is important to recognize that individual experiences are all contextual, and to provide this context when sharing stories. However, it was also important to provide an opportunity for participants to speak anonymously and confidentially. As a result, individual elements of the identity characteristics represented in the Listening & Learning Sessions are aggregated below. Participants were provided with a link to an optional, confidential demographic survey to help the consultant team to better understand the diversity of the participants. While not every participant completed parts or all of the survey, where they did this contextual demographic information is included below.

- All 17 of the participants self-identified as racialized peoples. Five of the participants identified as Indigenous, while the other 12 identified as people with varying ethnic identities.
- Indigenous Participants indicated that they lived on the following traditional territories:
  - Skwxwú7mesh (Squamish) lands (District of North Vancouver)
  - Skwxwú7mesh (Squamish) lands (District of North Vancouver)
  - xʷməθkwəy̓əm (Musqueam) lands (City of Richmond)
  - Qayqayt, and Kwikwetlem Nations (City of New Westminster)
  - Matsqui, Kwantlen, Katzie, and Semiahmoo Nations (District of Langley)
- The rest of the participants indicated that they lived in the following municipalities:
  - Burnaby
  - Coquitlam
  - North Vancouver (City)
  - New Westminster
  - Richmond
  - Surrey
  - Vancouver
- Thirteen participants identified as women; four identified as men.
- Five Participants self-identified as LGBT or Queer.
- Two participants were between the ages of 18-34. Six participants were between the ages of 35-54.
- Six participants shared their level of education:
  - Four participants indicated completing: Master's, PhD. or other Postgraduate Degree
  - One Participant indicated completing: Bachelor's Degree
  - One Participant indicated completing: College or Technical Training
- Six participants indicated being renters or tenants.
- Three participants self-identified as middle-class, while three identified as low-income.

### 4.3 What We Heard

Key themes were gathered from the discussions held during the Listening & Learning engagement sessions, and a summary of these is shown below in Table 6. Following this, a more detailed discussion of the themes is presented, as well as select quotations from participants as examples of the themes. While themes related to Land Use and Growth Management are most relevant to MVRD in terms of experiences of inequities, themes related to Transit and Mobility have been included due to the overlapping and influencing nature of these two categories.

Table 6: Key topics and themes heard from Listening & Learning participants

Topic	Themes
What does Social Equity look and feel like?	
Social Equity for Indigenous Nations and Peoples	<ul style="list-style-type: none"> <li>• Indigenous Social Equity needs to be treated distinctly in recognition of Indigenous Rights and Title</li> <li>• Historical trauma and injustices need to be acknowledged</li> <li>• Each individual's experience is unique, and intersectionality is important</li> <li>• Culture is foundational</li> </ul>
Social Equity for Other Equity-Denied Populations	<ul style="list-style-type: none"> <li>• Move from emphasizing "Equality" to "Equity"</li> <li>• Social Equity is experienced differently</li> <li>• Supporting social equity means supporting people's potential, fair distribution, and feelings of inclusion.</li> <li>• Representation is necessary for social equity</li> <li>• Dignity is inherent to social equity</li> </ul>
Experiences of Inequities in the Region	
Land Use and Growth Management	<ul style="list-style-type: none"> <li>• Homelessness looks different throughout the region</li> <li>• Support and opportunities are needed for equity-denied populations to live and work within the same community</li> <li>• The effects of displacement threaten community connections &amp; support</li> <li>• Parks and green space need to feel welcoming for all</li> <li>• Classism and race bias in relation to community demographics affects services</li> <li>• There is a need for a diversity of housing types in neighbourhoods across the region</li> <li>• Patterns of historical colonial displacement repeat themselves in contemporary gentrification</li> <li>• Retail space affordability and availability impacts equity-denied populations</li> </ul>
Transit and Mobility	<ul style="list-style-type: none"> <li>• Transit-reliant populations face isolation, delays, and fewer opportunities in parts of the region with lower transit connectivity between job centres</li> <li>• Congested transit disproportionately impacts riders with disabilities, medical concerns, or other mobility considerations</li> <li>• A lack of transit frequency and reliability impacts economic and social opportunities</li> <li>• Some sub-regions are experiencing rapid growth due to immigration and lower housing costs, but don't have sufficient transit service to address resulting congestion</li> <li>• Pedestrian health and safety is concerning in areas with rising vehicle traffic</li> </ul>

	<ul style="list-style-type: none"> <li>• Lack of amenities at SkyTrain stations and bus exchanges (public washrooms, WiFi) has disproportionate impacts</li> <li>• Greater focus is needed on enhancing the perception of safety while using transit</li> <li>• Racial bias from transit security and employees is experienced in their enforcement of regulations</li> <li>• Interests of privileged stakeholders should not supersede those of transit-reliant populations</li> <li>• Sustaining relationships/community is difficult when solely transit-reliant</li> </ul>
--	--

#### 4.3.1 Social Equity for Indigenous Nations and Peoples

1. **Indigenous Social Equity needs to be treated distinctly in recognition of Indigenous Rights and Title** - Social equity for Indigenous Peoples arises from a distinctly different history and cultural and legal relationship to land than other equity-denied groups. It is important to acknowledge this distinction, rather than categorizing the experiences and rights of Indigenous Peoples with those of settlers and immigrants. Many believe that Indigenous Peoples do not seek equity but rather reconciliation and a restoration of the health, wellness, self-determination and sovereignty which were eroded through historical and ongoing colonization. In addition, policies addressing Indigenous Peoples have to respond to the complexities arising from the colonial history of 'Indigenous' (and other historical labels) acting as both a political identity, and a racial identity that was created by colonial governments to categorize numerous distinct groups as one.

*"So when governments are engaging with stakeholders, you're looking at 'Who are the people that would be impacted by this?' That is a different place than say a 'rights holder' or a 'title holder', and for Indigenous Peoples, specifically in Vancouver, the 'title holders' are a good 11 or 10 Nations whose territories the Metro Vancouver region is on. Then 'title holders' have a different set of obligations that other institutions must follow."*

*"The Urban Indigenous Peoples Advisory Committee (UIPAC) and the Metro Vancouver Aboriginal Executive Council (MVAEC) have said that putting Indigenous people under equity is like bringing back the 1969 White Paper which was to make Indigenous Peoples 'Canadians' with the same rights. Inherent [Indigenous] rights supercede all equity rights and policies."*

*"What people don't realize - Indigenous People is not a racial category. It is a political category that connects a particular type of people that are found all around the world. There are White Indigenous people, there are Black people, and there are Chinese Indigenous...it's not a racial category. It's a political category that connects Original peoples who are still living on their land and still practicing their cultures and societies of that land with other peoples who also have a similar variety. So it becomes a political category. But there is a racialized element in the sense that Canada racializes Indigenous people through things like the Indian Act and things like policies that target people because of their race. And the health care system as an example of that, the land system as an example. The education system is an example of that. So the state is treating us as a racialized category. And discriminating against us based off of that systemically. And so equity becomes a thing of, well, there are clear indicators that this group of people are being oppressed by policy and law. So equity becomes a call to action to try and address that imbalance that exists."*

2. **Historical trauma and injustices need to be acknowledged** - Social inequities experienced by Indigenous Peoples are created from colonial systems of oppression, including those experienced from residential schools, forced relocation, and limited access to services on reserve. Social equity planning with Indigenous Peoples must begin with acknowledging the legacy of colonization and situating one's

organization within that legacy as part of any policy or process that aims to right historic and contemporary wrongs. If social equity planning is not centered within the wider context and legacy of colonization, it risks losing legitimacy.

*"I think that's a fundamental question about how do we make these decisions about growth and about all these things when we know that there is trauma and there [are] people that have been removed from their land, have been forcibly removed from their lands and there's Urban Indigenous Peoples that live here that also need access to their own practices and healing and wellness centers and things like that. So that's the grand context for me that I'm thinking about, and if we're not anchored in that and those questions then whatever planning we do is quite problematic, and I think for me I've been challenged lately."*

3. **Each individual's experience is unique, and intersectionality is important** - A definition of social equity for the Indigenous Peoples of the Metro Vancouver region needs to consider the diverse experiences held within each community, and within each individual.

*"My version of how I can create more equity in this world is different from how you can create more equity in this world. And it's because we have different resources, we have different worldviews, and it would be so much better if actually we all thought this way because then we're offering 1000 different ways to instill more equity in our lives and the lives of people around us."*

*"We are aligned in terms of the types of discrimination or challenges we face as Indigenous people, but it's uniquely different for us, as Indigenous women than it is for Indigenous men, so I think all of those things are kind of where I tried to build a frame around equity."*

4. **Culture is foundational** - Social equity includes having access to traditional cultures, especially for Indigenous Nations.

*"This is where we get into things like Aboriginal rights and Indigenous rights now in BC. So you get into things like Aboriginal Rights and Indigenous Rights and access, or access and ability to practice in cultural practices that are integral to the society of that Indigenous nation."*

#### **4.3.2 Social Equity for Other Equity-denied Populations**

1. **Move from emphasizing "Equality" to "Equity"** - Policies that were historically established with a desire for 'equality' i.e. the same treatment for all, may actually be inequitable. An example of this is the current fare tiers for transit fares. While reduced concession prices are available for seniors, youth, children and Handycard holders, the realities are that many populations within the "adult" full fare category may face systemic barriers that impact their ability to pay full fare.

*"Equity is just as much about eliminating barriers that may have felt were justified in the name of 'fairness for all', but perhaps penalize some over others - cost is one example. It might be a static thing, but cost differs for all."*

Another example is the unequal impacts experienced by different populations arising from the absence of public washrooms in transit areas. Populations such as seniors, LGBTQ2S peoples, parents with small children, disabled peoples, and/or people experiencing poverty or homelessness all may experience greater sanitation needs while using public transit, and may not have the same options available to them to draw on washrooms provided in the private sector such as in coffee shops.

2. **Social Equity is experienced differently** - Social equity intertwines the lived experiences of individuals with larger systems of power, such as White supremacy and systemic oppression. Identity, place, and institutional discrimination all influence how social equity is experienced at the individual scale.

*"Equity does not mean the same [for everyone]. It's about understanding where everyone is coming from, their background, their experiences, etc."*

*“Social equity is practices that are trying to include factors in addition to above [working definitions], including immigration status, language, ability, race, nationality, income, employment status, education level, etc.”*

*“Social equity looks different for everyone.”*

**3. Supporting social equity means supporting people’s potential, fair distribution, and feelings of inclusion.**

*“Social equity is the proper allocation of opportunities, advantages or privileges to each and every section of the society with no one left out or discriminated against irrespective of creed, race, gender, geographical location or affirmations.”*

*“Social Equity is about providing a safe space.”*

**4. Representation is necessary for social equity** - Social equity is having representation in government and positions of power at all levels of society to produce equitable access, outcomes and opportunities for all.

*[Social equity is] “Power in decision-making, representation in top levels of politics/business/society, representation in media, equal access, opportunities for a meaningful livelihood, equitable health outcomes, right to movement (transportation), right to housing, right to healthy + appropriate food.”*

*“Representation...We need more BIPOC to actually run the government, because systemic inequity is the result of too much of a few privileged groups running the show. We need more BIPOC to smash it all up from the inside.”*

**5. Dignity is inherent to social equity** - Social equity is about treating people with dignity.

*“Social equity means building universal dignity in our society, institutions and communities.”*

### **4.3.3 Experiences of Inequities in the Region**

After discussing concepts and definitions of social equity, participants were asked to share stories of inequities they are experiencing or witnessing in the region as a result of land use and growth, and also those related to transportation. It is also important to note that regional growth and transportation inequities are often experienced simultaneously by participants, and that distinguishing them in a planning context is rarely consistent with the public’s lived experience.

#### **Land Use & Growth Management Key Themes**

**1. Homelessness looks different throughout the region** - the experiences of individuals, and the “visibility” of homelessness, is very different across the region. The 2020 Metro Vancouver Homeless Count found that Indigenous and Black people are significantly overrepresented in the homeless population. This has connections to the distribution of affordable housing, shelters, and the culturally appropriate support services that may be needed by people experiencing homelessness.

*“I’ve lived in the Lonsdale area for about almost four years now and to this day, I am quite shocked by the complete lack of homeless people, homeless transient, [I] just don’t see them. And it’s just such a stark contrast to what we see across the water...I don’t know exactly what it is. But, I suspect there’s some inequities at play.”*

- PARTICIPANT, LIVING IN CITY OF NORTH VANCOUVER

**2. Support and opportunities are needed for equity-denied populations to live and work within the same community** - there needs to be a range of employment opportunities present throughout the region, not just in the major downtown centres. Recent immigrants and other equity-denied populations may not be able to afford to live in urban core areas, and as a result may be required to travel long distances to reach appropriate job opportunities.



*“Sometimes the work that I want to do might not be in Burnaby for example, and I have to drive all the way or take transit to Vancouver. So I think the idea of a complete city is perhaps a place where, if I want to set up a business, I can just do it close to where I live. Where I need a job, I don't have to drive far away. I can just have a job here [in Burnaby]. We know in Vancouver proper, most people cannot afford to live there. So people have been pushed out to other areas. And those are the areas not served as well. Right?”*

- PARTICIPANT, LIVING IN CITY OF BURNABY

3. **The effects of displacement threaten community connections & support** - having support from those with a shared culture living within close proximity is critical. Rising housing costs have impacted the ability for communities to stay together and provide mutual assistance. When cultural communities are forced to move further apart, the transportation costs are felt both in the cost of transit, but also in the time costs.

*“I moved to Vancouver in 1998 and I moved to East Vancouver. I lived with my cousin and we lived close to other people from our communities who had been brave enough to move to the city. And our close proximity to one another in East Vancouver made all the difference. We survived together. A lot of people, you know, got so homesick. They dropped out of school, the first people to go to university and their families and they missed home so much they dropped out and moved back to the village. But there was a small group that managed to make it. You know, I think we did it because we were all close to one another, we could share suppers together, we could babysit each other's kids. I don't have kids, but I sure babysat a lot for people who needed it. Now we all live far apart. It's really difficult to find housing in East Vancouver...I wish we could all be an East Van together still [but] gentrification has taken that option away from us. And the high cost of transit. Not only is it too expensive. It's two hours away. So you're not only taking all my money, you're taking my time too. And it's tough.”*

- INDIGENOUS PARTICIPANT OF NISGA'A AND KWAKWAK'AWAKW HERITAGE, LIVING IN SQUAMISH RESERVE HOUSING, CITY OF NORTH VANCOUVER

4. **Parks and green space need to feel welcoming for all** - there is still a long way to go to make recreational spaces feel inclusive and welcoming to all people, no matter what they look or sound like. Further exploration is required to delve into this theme, such as park distribution. Some neighbourhoods have an abundance of parks while others have less parks, or access to services within these (such as access to public washrooms).

*“We can all have access to parks, to green spaces and not be, you know, looked at in a weird way because I dress differently or speak differently.”*

- PARTICIPANT, LIVING IN CITY OF BURNABY

5. **Classism and race bias in relation to community demographics affects services** - perceived neighbourhood characteristics may impact individuals' access to services such as policing and the quality of these services. This may be in the form of over-policing and surveillance in some neighbourhoods with specific characteristics (e.g. related to race, class, Indigenous identity). It may also be in the form of lower levels of service response to “non emergency” activities in these neighbourhoods. In the example below, a participant feels that the more privileged neighbourhood they now live in resulted in a more prompt and respectful response to a non-emergency call, in contrast to a perception that the same activity originating in another neighbourhood with a less privileged demographic makeup would be perceived as ‘normal’ for the area, and thus ignored when reported.

*“Inequity in my area right now where I live is actually benefiting me, and I'm actually winning from it. And the most recent example I have is I'm going for a walk at night and some things happened. And because I know where I live, and I know my neighborhood, I felt totally comfortable pulling up my phone*

*and looking up the non-emergency line and making a report with the RCMP, and they showed up in eight minutes, and they're very nice, very friendly. They called, they followed up. We stayed on top of things and they made sure my neighborhood was safe. I got off the phone and I was like, this is really weird. Like, I don't feel like I should do this. But that's sort of the neighborhood that I'm in.*

*I know people from down the road there [in Surrey], if they phone the cops for things, it's sort of like 'we'll get to it.' Depending on where you are geographically, unless it's something serious or you own a business - they're really quick to respond in the area to business concerns. But I think for me, there's that part there because I sort of benefit from [inequity] here, where I have level of comfort where I'll do that when something is happening."*

- INDIGENOUS PARTICIPANT OF ST'AT'IMC HERITAGE, LIVING IN LANGLEY TOWNSHIP

6. **There is a need for a diversity of housing types in neighbourhoods across the region** - low-density neighbourhoods made up exclusively of single-detached homes do not provide the range of affordability, unit size, and transit-supportive densities that are required to meet the needs of the diversity of residents in the region.

*"Like in North Van or in Shaughnessy, the Endowment Lands, those types of neighborhoods where they're all very expensive, single-detached homes. With very little diversity in the residential areas, if you were to stick someone in there, say a single mom with several young children with minimum wage income. Are they going to be able to live in those areas that are showing as having very good social equity? Can you imagine someone like that in those areas really having fair access to the same opportunities and services as the rest of the neighborhood? I can't."*

- PARTICIPANT, LIVING IN CITY OF NORTH VANCOUVER

7. **Patterns of historical colonial displacement repeat themselves in contemporary gentrification** - when land use decisions are made to re-develop certain areas to accommodate regional growth priorities, the impacts may be felt differently by marginalized populations.

*"Who [which areas] suffers next for the greater good? And that's the displacement kind of equation that happens. I think it happens to marginalized people more, and in Canada, it happens to Indigenous people. It's 'this is for the greater good of everybody'. So we're on a smaller scale than Canada here, but for the greater good of Metro Vancouver it looks like parts of Surrey and Langley will suffer next for the greater good of the empire. But I do think that we can learn a lot from that. But I think that the stories in there are what's important. The stories in there will get forgotten and will get paved over to build massive developments instead of a sort of diverse housing initiative."*

- INDIGENOUS PARTICIPANT, LIVING IN LANGLEY TOWNSHIP

8. **Retail space affordability and availability impacts equity-denied populations** - affordable retail spaces are affected by displacement, and thus are not equally distributed around the region. Shops providing culturally appropriate food, services etc. may not be available to some residents within their neighbourhoods as part of a compact, complete community. Retailers & entrepreneurs may feel they need to choose between operating in a location then can afford, versus locating in easily accessible areas close to their target populations. There is a need to complement affordable housing with provision of affordable retail space, allowing for more culturally-diverse retail providers.

*"I think for me as an immigrant, sometimes I have not always been able to access cultural foods. I know that businesses that cater to ethnic and cultural groups, for example, cannot afford sometimes to set [up] shop close to where we live, right? Oftentimes, you have to drive outside of where you live to a different city to access your cultured foods."*

- PARTICIPANT, LIVING IN CITY OF BURNABY

## Transportation & Mobility Key Themes

1. **Transit-reliant populations face isolation, delays, and fewer opportunities in parts of the region with lower transit connectivity between job centres** - Transit-reliant populations, such as those employed in low-paying service sector jobs, may find it difficult to travel both within their municipality as well as elsewhere in Metro Vancouver in comparison to those who have access to personal vehicles.

*"I think that on the North Shore, that at least equity in transit access, I think it's lacking. And that's not just for Lonsdale. But going all the way across the region, the North Shore region. So connecting the City and the District of North Vancouver with the District of West Vancouver. there's very few transit connections, and a lot of the service sector that serves those communities takes transit. So it's not a case of 'well, we're a self-sufficient community that does not need any transit.' There are people that rely on it and that the community needs those sectors, but they're not providing equitable access for the people that provide the services that they want."*

- PARTICIPANT, LIVING IN CITY OF NORTH VANCOUVER

2. **Congested transit disproportionately impacts riders with disabilities, medical concerns, or other mobility considerations** - With rapid increases in population growth outpacing local employment creation in some regions, residents are experiencing increasingly crowded SkyTrain commutes. For transit users with visible or invisible disabilities or medical concerns, this may affect their ability to travel. Riders (often women) travelling with young children in strollers are also disproportionately impacted by congested transit. Areas of the region with large populations of racialized, urban Indigenous, recent immigrants, and low-income residents further compounds the inequity of overloaded transit service. Costly distance-based fares exacerbate this issue.

*"The SkyTrain is always full from Surrey, it is very difficult to get a seat. If you are paying a full fare from Surrey, 3 zone, it can become frustrating when you don't get a seat. Especially when you have medical concerns."*

- PARTICIPANT, LIVING IN CITY OF SURREY

3. **A lack of transit frequency and reliability impacts economic and social opportunities** - The auto-oriented design of some communities and lack of frequent buses (running every 10 minutes or sooner) makes it difficult to travel from the region's more suburban municipalities, where buses run every 15, 20 or 30 minutes and have long routes. Congested roads often cause buses to arrive earlier or later than expected. The sporadic arrival of buses is an equity issue, especially for those who rely on transit as their main mode of transportation. It impacts the ability to keep appointments, maintain regular work, attend school, and participate in community life.

*"I 100% used the bus [394 express bus] in the morning to go to my office before COVID. But if I miss one bus, for some unforeseen circumstances – maybe the bus broke down, then I have to wait another half-hour. By chance, if that bus broke down or it's out of order, then I have to go walk for another 15 to 20 minutes [to Newton Exchange]. It's the same in the afternoon. When I am coming back from work, at 5 p.m. or 6 p.m., if the bus is gone or I miss it, I have to wait for another half-hour."*

- PARTICIPANT, LIVING IN CITY OF SURREY

4. **Some sub-regions are experiencing rapid growth due to immigration and lower housing costs, but don't have sufficient transit service to address resulting congestion** - Some auto-oriented communities further from urban core areas are experiencing rising congestion due to growth; many of these communities are majority-racialized, with higher levels of new immigrants looking for more affordable housing. The resulting

car dependency may lead to perceived parking shortages in residential parking at the neighbourhood scale, particularly in areas of invisible density such as locations with high numbers of renters living in basement suites.

*"We live in the City of Surrey and I think it has been getting more crowded with traffic every day. And I think something that the region or city authority has to look into is [residential] parking spaces...most of the parking spaces are super busy. But driving within the City of Surrey, it's really getting a bit of a challenge for most of the people, I think."*

- PARTICIPANT, LIVING IN CITY OF SURREY

5. **Pedestrian health and safety is concerning in areas with rising vehicle traffic** - In auto-oriented communities with large intersections and rising congestion, pedestrian safety is becoming more of an equity issue for non-driving and transit-reliant populations. Seniors, children and low-income residents are all at greater risk of traffic deaths than other populations. In addition, increased traffic volumes affect localized air pollution which has disproportionate affects on certain populations including children, people with certain health conditions such as heart disease or lung disease (especially asthma), and those who face higher exposure to pollutants such as low-income and racialized residents.

*"Something that we need to keep an eye on [are] the people that are driving very fast. And I also have seen a couple of experiences where the sidewalk signal is activated and still drivers feel that 'oh, [the pedestrian] is still on the other side of the road so I can turn quickly'. So I think there is some kind of education or something that people need to be aware of if the sidewalk signal is activated. Whether the person is walking a bit slow or they're on the other side, the driver's need to stop on both sides [before turning] until he or she crosses the road very safely."*

- PARTICIPANT, LIVING IN CITY OF SURREY

6. **Lack of amenities at SkyTrain stations and bus exchanges (public washrooms, WiFi) has disproportionate impacts** - Long transit trips that may involve significant waits (15 to 30 minutes) for buses at SkyTrain stations or standalone bus exchanges can stretch the limits of what some people can comfortably do without access to a washroom. Providing washrooms might make these long trips more manageable for women, children, seniors, disabled, or other populations requiring these amenities more frequently. In addition, the provision of WiFi at stations can support safety and connectivity for lower-income transit users who may not have access to mobile data plans.

*"I was surprised that throughout Vancouver there are not too many services like the Wi-Fi, toilets when waiting in line for buses. But for example, if I want to take a bus, I have to wait at least 15 minutes. And if I miss the bus, I have to wait another 30 or sometimes one hour for the next bus. That's the big issue for me. Especially while waiting. Yeah, I've spent too much time waiting at the bus stop. We really need it especially for women and sometimes for children, for example, if a mother [transits] with her boys or girls and they need to go to the toilet, what can she do, especially on the SkyTrain? Because SkyTrain takes a lot of time for example from [Surrey Central] to Chinatown, it's 40 minutes. So as an adult we can manage it but as children, they cannot manage all that time. It's why most people don't prefer to take transit. Most people buy a car or are trying to buy a car."*

- PARTICIPANT, LIVING IN CITY OF VANCOUVER

7. **Greater focus is needed on enhancing the perception of safety while using transit** - A specific approach to promoting the safety of women, trans and queer, and other non-dominant populations on public transit might be needed, such as targeted communications campaigns and resources as well as increased security. When transit feels unsafe, it limits the ability of women and other populations with non-dominant identities to exercise their right to the city and participate in society to the same extent as men.

*"I just heard about something that happened on the SkyTrain, [someone tried] to rob some female and I think I heard about this news and [I'm] just a little bit afraid of that... So we have to just be careful for [safety of women on transit] or have more police or security staff. A lot of passengers need more information about [security, safety]."*

- PARTICIPANT, LIVING IN CITY OF VANCOUVER

8. **Racial bias from transit security and employees is experienced in their enforcement of regulations** - When the enforcement of transit regulations is at the discretion of individual transit police and security personnel, there is a potential for racism and other identity-driven biases to influence enforcement decisions. Given the legacies of over policing in Indigenous, Black, and other communities of colour in Metro Vancouver and across Canada, it is imperative that transit police and other security staff are trained in cultural sensitivity and recognizing implicit bias.

*"My cousin ... she's really Indigenous looking, she's really dark, she's Cree. She has a wheelchair but she was in a scooter. So she was on the SkyTrain and she would plug into the outlet but she would also play her music, which she's not supposed to do. And I think she annoyed the SkyTrain security and so all along her route, they plugged up where you would plug in your scooter. She's stuck there because the outlets were all covered and so she called me and told me the story. So I called "the Skytrain people." And I said, are people allowed to use them [outlets]? And they said yes they are allowed to, only if they're not in people's way. And so I called her up and I'm like, you should be allowed to use them."*

- INDIGENOUS PARTICIPANT, CURRENTLY LIVING ON THE TERRITORIES OF QAYQAYT, AND KWIKWETLEM INDIGENOUS NATIONS (CITY OF NEW WEST)

9. **Interests of privileged stakeholders should not supersede those of transit-reliant populations** - Equity considerations must inform the engagement and planning phases of transit projects, so the needs of transit-reliant and low-income populations are not drowned out by powerful interests or more privileged residents.

*"I understand the struggle, because they did try to implement the rapid bus through to Dunderave just a few years ago. And it really was the wealthier residents, the business owners on the corridor that opposed it, and it [was cancelled]. So, it's not for lack of trying on the government part, I feel. It's definitely a cultural awareness issue. We need a culture shift in terms of where our priorities should be and what it means to be equitable in our treatment of our neighbours and people that help to build the community, and not just a specific segment of that community."*

- PARTICIPANT, LIVING IN CITY OF NORTH VANCOUVER

10. **Sustaining relationships/community is difficult when solely transit-reliant** - Being able to maintain relationships, particularly with members of your cultural community, is vital to wellbeing. This is becoming harder for equity-denied populations during the pandemic, in addition to challenges resulting from the cost and time it takes to transit throughout the region.

*"I think the hardest part about all of this, though, was the disconnection from the community. I've lost two friends since COVID started. Not being able to go and see them, you know, to take care of their bodies. To take care of cleaning their apartments, being able to see their kids, being able to gather all of these things were struggles, because we all live so far apart from one another and my one friend died. It was unsafe to take the bus to go and see him. And that was really difficult."*

- PARTICIPANT, NISGA'A AND KWAKWAK'AWAKW FIRST NATIONS, LIVING ON SKW'XWU7MESH (SQUAMISH) LANDS (DISTRICT OF NORTH VANCOUVER).



## 5. Recommendations

A wealth of data has been produced with this study, and many of the discoveries and findings will continue to emerge as the data is reflected on and analyzed beyond the scope of this project.

Based on an analysis of the quantitative (Baseline Indicator and Inequity Index) and the qualitative (Listening and Learning engagement sessions) data described in the previous two sections, the consultant team has developed the following recommendations:

1. Use a refined definition of social equity.
2. Target three priority areas for action:
  - a. Focus policy response on inequity indicators connected to regional growth and land use.
  - b. Integrate a selection of social equity indicators into regional growth strategy performance monitoring.
  - c. Develop a corporate social equity plan.
3. Employ the “Social Equity Analysis Tool” (SEAT) to evaluate policies under consideration.
4. Begin a review of existing policy by drawing on previously identified gaps.

These are described in more detail in the following sections.

### 5.1 Social Equity Definition

Before being able to study and address social inequity at the regional scale, a clear, meaningful, and locally-derived definition of social equity is needed. A commonly-held definition ensures that all parties are talking about the same concept when they use the term. It is also important to ensure that indicators are valid and that interventions are addressing the problem they are intended to solve. Part of the Listening & Learning sessions included asking participants to define social equity based on their lived experiences as residents in the Metro Vancouver region. Prior to the sessions, participants were provided with “working” definitions of social equity that MVRD is considering. Participants were asked to respond and reflect on the working definitions to help refine them. This working definition is shown below:

*“The promotion of justice and fairness and the removal of systemic barriers that may cause or aggravate disparities experienced by different groups of people. This can include the many dimensions of identity, such as socioeconomic status, ethnicity, sex, age, disability, gender, sexuality, religion, indigeneity, class, and other equity related issues.”*

Several key themes emerged during the engagement sessions that informed the development of a more refined social equity definition for Metro Vancouver:

- Participants identified a need for greater accountability from MVRD with regard to their equity work, from definitions to evaluation metrics for policies.
- Social equity definitions from authorities like MVRD should not be limited to vague, aspirational messages. Rather, they should be “actionable,” and reference what those organizations can and are planning to do to address inequities in society.

*“And so when I see the Metro Van definition, they didn't actually say anything about what they themselves can do to achieve equity...What's within your jurisdiction to act? I think we've come too far as a society to accept anything less. Show me the details!”*

### 5.1.1 Proposed Metro Vancouver Social Equity Definition

Social equity in Metro Vancouver is the incorporation of justice and fairness within the region's principles, practices and policies in order to support the development of equitable outcomes for all individuals.

It is the promotion of access to context-appropriate opportunities and representation within systems of power for those that face systemic barriers and are the most negatively impacted by regional decisions, often due to intersecting and compounding factors such as race, ethnicity, Indigeneity, gender, sexuality, religion, age, socio-economic status, and mental or physical disability.

Expanding social equity means developing a region where individuals do not experience discrimination or exclusion from society because of their identities, but instead are welcomed, celebrated, supported and treated with dignity and respect.

## 5.2 Priority Areas for Action

Determining which inequities are “priority” is a challenging exercise - often, planning staff and front-line workers may have an anecdotal indication of challenges residents are facing. These may include issues such as homelessness, a housing affordability crisis, lack of rental supply, opioid crisis, the highest and the lowest life expectancy rates in the province within the same health authority, child poverty, and lack of transit access and other services in Indigenous communities. In addition, the participants of the Listening and Learning engagement sessions shared many of their own personal priorities for inequities experienced in the region; while a very small sample size, these stories point to direct and lived experience - capturing nuance and a sense of urgency that quantitative data may not catch. The challenge comes in determining the comparative importance when combining different types and levels of representativeness of data, such as was the case in this study.

Responding to the full range of inequity across the region will require collaboration and partnership across governments, sectors, and geographic areas, but it is important to identify elements that MVRD can play a more direct role in affecting through policy and practice. These can be summarized into three areas, shown in detail in the following section:

1. Policy responses focused on inequity indicators connected to regional growth and land use
2. Equity Performance Measures created and monitored as part of *Metro 2050*
3. Corporate social equity plan developed to help guide broader MVRD social equity practice and policy

### 5.2.1 Focus policy response on inequity indicators connected to regional growth and land use

We decided to focus policy response recommendations on inequities that showed up in both the spatial and narrative analysis, and that could be influenced by regional policy related to land use, growth and transportation. This should be viewed as a starting point, to be refined as additional engagement and research adds to our understanding of the experience of inequity within the region.

Indicators were assessed by both the degree of influence that MVRD has, as well as the degree of variance in the data related to that indicator. A larger variance speaks to a higher level of disparity in the data, pointing to a higher level of inequity. While this is not an exact science, and the analysis rests on all the same limitations and caveats about the data as were presented earlier in this report, it gives a starting point for consideration.

The quantitative data provided through the inequity baseline was then assessed against themes heard from the social equity context experts who participated in the Listening and Learning sessions, and areas where these showed up in both instances (baseline indicators and engagement) were put on a shortlist for prioritization.



The consultant team has identified the following priority inequities connected to regional growth and land use policy. The items are listed in order, starting with the indicator with the highest level of disparity in data and then descending from there.

### 1. Rate of Change - demolitions by land use change

- *What we heard:* Redevelopment and increasing density often results in the erasure of marginalized people from the neighbourhood, and repeats patterns of historic colonial displacement.
- *Why it matters:* High anticipated rates of change indicate areas where there will be significant increases in a population or employment in a given area. These increases, unmitigated, may be a warning sign of gentrification, displacement and unaffordability effects.
- *Areas of highest concern:* Areas with a high rate of demolition by land use change (between 90-100%) are found only in less developed/less urbanized areas within New Westminster, Surrey, South Surrey and Langley.
- *What MVRD can do:* Land use change demolitions (typically) result from the replacement of one type of structure with another higher density structure, for instance a single detached house changed to a multi-unit building. MVRD stewards the implementation of the regional growth strategy, the collective regional vision for how growth will be focused and land use change will be managed over the long term.

### 2. Access to parks and recreation space

- *What we heard:* In addition to the presence and distribution of parks and recreation space in communities, work needs to be done to make them feel more welcoming and inclusive.
- *Why it matters:* Access to parks and recreation space is a factor in positive health outcomes and community belonging. Barriers to park access, park provisioning, and parks programming and quality can all have disproportionate effects on some communities.
- *Areas of highest concern:* The greatest clustering of poor access (less than 3.7 hectares available) occurs in Langley Township, Maple Ridge and Richmond.
- *What MVRD can do:* MVRD can influence the location of regional parks, which can also influence the location or allocation of new park space in member municipalities.

### 3. Subsidized housing

- *What we heard:* Participants shared observations around the different experiences of homelessness throughout the region. There is a need to match supportive, affordable housing and culturally appropriate social services to the demand.
- *Why it matters:* Subsidized housing contributes to affordable housing options, as well as housing security in the face of urban change.
- *Areas of highest concern:* Subsidized housing tends to be clustered, with many areas completely without subsidized housing. Areas with greater than 60% of residents in subsidized housing are found in Vancouver's Downtown-Eastside, Surrey (Newton, Metro-Centre and Guildford neighbourhoods) and Burnaby's Cariboo-Armstrong neighbourhood.
- *What MVRD can do:* Metro Vancouver Housing provides affordable rental homes at below-market rates throughout the region. The regional growth strategy can also include policies supportive of subsidized housing.

### 4. Relative access to transit

- *What we heard:* The auto-oriented design of some communities and lack of frequent transit access disproportionately impacts transit-dependent residents, often racialized, low-income, and women, with long wait times and unreliable scheduling.

- *Why it matters:* Access to transit is an important equity indicator as it signals access to employment (income), education, health, and recreational opportunities for those who cannot drive a personal vehicle due to age, disability, or wealth.
- *Areas of highest concern:* The lowest transit access scores occur in suburban/rural areas not proximate to any major bus or SkyTrain routes.
- *What MVRD can do:* MVRD influences population growth management and major transportation corridors, which in turn affects transit service.

## 5. Rate of change – demolitions by replacement

- *What we heard:* Displacement through gentrification has considerable social costs, impacting the affordability of housing and thus the ability for cultural communities to stay together and provide mutual assistance.
- *Why it matters:* High replacement rate generally indicates loss of old, potentially more affordable buildings, as well as the presence of land speculation. Areas which are experiencing a rapid rate of change typically see a loss of affordable rentals as well as significant disruptions to community cohesiveness.
- *Areas of highest concern:* Replacement rates higher than 4.5% are found in South Surrey north-east of White Rock along King George Blvd and Guildford along Highway 1, as well as in North Vancouver proximate to Iron Workers Bridge. Vancouver's West Point Grey neighbourhood, Kits Point, south Lougheed, just east of Surrey Metro Centre and just north of Langley Town Centre were between 2.5 and 4.5%.  
*What MVRD can do:* The regional growth strategy can include policies that encourage member jurisdictions to guide redevelopment in such a way to avoid or mitigate for involuntary displacement of renters such as tenant protection and relocation policies.

## 6. Housing suitability (overcrowding)

- *What we heard:* There is a need for a variety of affordable housing types and sizes across the region. These can't be provided just through massive developments, but rather should include a range of diverse housing initiatives.
- *Why it matters:* This indicator is a measure of housing size relative to the composition of a household (age, sex, relationships) and can indicate areas where the availability or affordability of housing has created situations where persons cannot live in a dwelling with adequate personal space. It is important to note that the term suitability is highly subjective as the definition prescribed by National Occupancy Standard may not align with cultural preferences and inter-generational living arrangements.
- *Areas of highest concern:* The greatest percentages of households reporting unsuitable housing, at 25% to 39%, are found in Surrey (Newton, Metro Centre, Guildford) and Burnaby (Metrotown).
- *What MVRD can do:* The regional growth strategy can include policies that encourage member jurisdictions to plan for culturally-appropriate family-friendly housing choices such as incentives or requirements for more units in a building with multiple bedrooms. MVRD may also have a role to play in policy research and advocacy for more supports for family friendly affordable housing choices.

## 7. Employment access (transit)

- *What we heard:* Transit-reliant populations, such as those working in the lower-paying service sector, face isolation, delays, and fewer opportunities in some parts of the region with lower transit connectivity between job centres.
- *Why it matters:* Accessibility to employment and low-cost transportation options relate to economic well-being.

- *Areas of highest concern:* Low ratio scores (indicating poorer transit access) occur in suburban parts of Richmond, Delta, Surrey and Langley as well as Maple Ridge Regional City Centre.
- *What MVRD can do:* Through influencing both relative access to transit and expected employment growth as well as regional employment land use designations, MVRD can impact employment access by transit. TransLink planning for transit stop locations and routes would also impact this measure.

**Priority Geographic Locations for Consideration:** In addition to the inequity considerations by category presented above, there will also be specific geographic areas of the region that have multiple overlapping equity considerations, some of which may be influenced by MVRD policy and practice. While by no means a comprehensive analysis, the Inequity Index created as part of this study can be used as a starting point for this. Examples of priority areas of inequity related to specific geographic areas *within MVRD's ability to influence policy* include:

- Subsidized housing in Vancouver - Downtown Eastside
- Exposure to flood hazard, and Rate of Change (by Replacement) in Richmond
- Housing suitability (overcrowding) in Guildford

### 5.2.2 Create and monitor Equity Performance Measures

Measurement and monitoring systems are key to ensuring action. All indicators were evaluated using the following criteria as a framework for inclusion as performance indicators of equity for *Metro 2050*. Each indicator was evaluated by:

- the level of confidence in the data
- if the metric is repeatable for future measurement
- if the metric can be repeated looking at the past
- if the metric is affected by MVRD policy
- if the measure reliably measures inequity.

Each indicator under consideration in this project was evaluated against the criteria above and scores were generated by criterion. A simple, unweighted summary score was generated, representing the sum of all criteria. The following table presents the top ranked indicators in descending order based on the summary score. The table below presents a short-list of indicators that can be functional for evaluation and monitoring of *Metro 2050* moving forward. It should be noted that based on the criteria developed above, all recommended indicators for use as performance metrics are related to conditions as opposed to demographics or population units. This is by design, as two key evaluation criteria measure an indicator's sensitivity to MVRD policy effects, as well as a primary measurement of inequity, both of which are better explained by urban conditions as opposed to population-type indicators.

Table 7: Recommended short list of equity performance measures and their scores

<i>Indicator</i>	<i>Summed Score</i>	<i>Indicator</i>	<i>Summed Score</i>
<i>Urban Tree Canopy</i>	<i>18</i>	<i>Transportation Cost Burden</i>	<i>15</i>
<i>Employment Access (Transit)</i>	<i>16</i>	<i>Unemployment Rate</i>	<i>14</i>
<i>Employment Access (Drive)</i>	<i>16</i>	<i>Income Inequality Ratio</i>	<i>14</i>

<i>Exposure to Flood Hazard</i>	<i>16</i>	<i>Housing Tenure - Renter</i>	<i>14</i>
<i>Average Commute Time</i>	<i>15</i>	<i>Housing Tenure - Owner</i>	<i>14</i>
<i>Subsidized Housing</i>	<i>15</i>	<i>Median Home Value</i>	<i>14</i>
<i>Access to Parks and Recreation Space</i>	<i>15</i>	<i>Relative Access to Transit</i>	<i>14</i>

We suggest choosing 8 to 12 indicators from among the top scores. Eight indicators scored highest, followed by another six that tied for ninth highest scoring. Careful consideration should contribute to the final choice, with particular consideration to which measures are most likely to persist and be used and monitored moving forward. There may be potential to use composite indicators (i.e. bivariate relationships between conditions and populations) as potential indicators for *Metro 2050*. However, complexities inherent in developing a model that captures and evaluates all the potential combinations of indicators is beyond the scope of this project.

### 5.2.3 Develop a corporate social equity plan

While the process and results of this Social Equity Study can be seen as a positive and tangible step towards incorporating social equity into MVRD's regional growth & land use planning and practices, there is still much to be done. Many of the comments and suggestions heard during the Listening & Learning engagement sessions pointed to the importance of process while engaging in equity work, which goes beyond the scope of this study but nonetheless need to be considered.

A corporate social equity plan would allow the organization to look more comprehensively at social equity, including changes needed at the individual, team, department and systemic level. A broader plan needs to involve deep reflection and internal organizational work, supported by a commitment throughout the organization to invest in the time, learning, and 'infrastructure' necessary for transformational change. A social equity plan for MVRD could include a high-level articulation & definitions related to social equity and related concepts, key priority areas, and implementation plans with actions, timeline, budget, etc. specific to each department.

The [Social Equity in Regional Growth Management](#) report (Ecoplan, 2019) provides further guidance around this:

*Organizations must account for and be aware of how their own leadership and bureaucratic processes can function as instruments of exclusion. Literature focused on this area identifies that 'systemic barriers' within an organization aggravate disparities within their current operations and often have a history of inequitable decision-making. In order to move towards equitable outcomes, a more thorough investigation of its own practices must be conducted and recognized. Bias built into decision-making and development review processes must be scrutinized.*

- *Ensure not to create an equity silo within the organization and planning documents.*
- *Involve interdepartmental staff review of non-traditionally "social-related" departments.*
- *Implement external courses for interdepartmental learning and capacity building on equity.*
- *Develop a similar equity training program for municipal partners or an "equity toolbox"*
- *Invite other departments (not just planning) to engagement events involving equity-seeking groups so they can hear about the issues firsthand.*
- *Employ a dedicated staff position to equity building initiatives across policy areas*

- *Develop a set of equity principles to provide more clarity and guidance of internal processes and increase coherence in application across Divisions and Groups.*

Further guidance on developing a social equity plan can be found in [Advancing Equity and Inclusion: A Guide for Municipalities](#).

### **5.3 Social Equity Analysis Tool**

It is important to recognize that assessing social equity should not be limited to one strategy, goal, or policy area, but instead needs to be considered universally. Social equity is too often considered solely within a “social” category, and as a result confined to policy areas with more obvious social components such as affordable housing, childcare or recreation. But social equity needs to be assessed in other (often more “technical”) areas as well, such as environment, transportation and climate change, where it is equally important but perhaps not as evident in how social equity applies.

The Social Equity Analysis Tool (SEAT) can help guide staff through key questions while creating or reviewing policies, amendments, or practices in any area of planning. It follows four stages to consider, with a goal of increasing social equity. Each stage is supported by a series of questions, to guide reflection, research, and action towards a more equitable and inclusive region.

Stage 1: Reflection & Representation

Stage 2: Research & Assumption Check

Stage 3: Impacts & Solutions

Stage 4: Measurement & Evaluation

The questions and reflections in this tool were adapted from a review of best practice in equity and inclusion plans across Canada and the USA (see Appendix I).

### 5.3.1 Undertaking a SEAT Process

Staff are encouraged to work through each stage of the SEAT slowly, thoughtfully, and carefully. It may be helpful to work with a colleague or team. The four stages of the SEAT and their corresponding questions are shown below.

#### *Stage 1: Reflection & Representation*

- a) Map your own identities, perspectives, and power
- b) Consider your bias and stereotypes
- c) Identify missing or marginalized perspectives

Reflect on the following questions:

- What are my own cultural perspectives and worldviews, and how is this different from others?
- Where is power causing inequity, and where and whose power can affect potential change to create a more equitable distribution of resources and opportunities?
- Does our team have relevant and relatable experience to the communities that this work will affect?
- Which employees, partners or community agencies with lived experience in these communities can we collaborate with to get other perspectives?
- Am I working with and listening to people whose identities and experiences differ from mine?
- Am I looking for what I don't know?

#### *Stage 2: Research & Assumption Check*

- a) Collect relevant research and demographic data (quantitative and qualitative)
- b) Consider the affected community/ies' environmental, economic, historic and cultural contexts
- c) Analyse: What does the data say about the community? What does the community say about the data?

Reflect on the following questions:

- What current statistics or demographic data would help us understand the people or communities that face systemic barriers and inequities in relation to the policy/practice in question?
- How might race, gender, orientation, disability, class, sex, etc. affect the impacts of the proposed policy/practice?
- Will data gathered capture the specific characteristics of the population? (i.e. disaggregated)
- Are we making any assumptions that we need to verify?
- Do the research questions help us identify who may be excluded?
- Is there history - between government and community, or between communities - that we need to consider?
- What equity issues are currently being raised by residents in relation to this policy/practice?
- Have we validated the findings with the community so as to minimize our biases?

#### *Stage 3: Impacts & Solutions*

- a) Assess how key policies/practices might impact communities that are marginalized, as benefits, burdens and barriers.
- b) Refine policies/practice to optimize the benefits and minimize the burdens/barriers on affected communities.
- c) Identify mitigation methods to further remove barriers, reduce negative impacts and/or enhance positive impacts of the policy/practice.

Reflect on the following questions:

- What are the social equity concerns related to this policy/practice? (e.g., accessibility, affordability, safety, culture, gender identity, etc.)

- Which social equity opportunity area(s) will the policy/practice primarily impact? E.g. Community Development; Health; Environment; Jobs; Housing
- What benefits, burdens or barriers may result? (potential or actual)
- How will alternative options differ in improving or worsening current social equity conditions?
- How can we address the impacts - both immediate and root causes?
- Where can we lead in the mitigation or enhancements, and where can we partner or advocate?
- What sources exist for resourcing (human and financial) the mitigation or enhancements, both within our organization and with our partners?

#### *Stage 4: Measurement & Evaluation*

- a) Select appropriate social equity performance measures (example criteria: confidence in data, repeatable, affected by policy/practice, reliably measures equity/disparity)
- b) Integrate social equity performance measures into existing monitoring plans.

Reflect on the following questions:

- How will we measure the extent to which the policy/practice contributes to removing barriers or creating opportunities for people who face inequity?
- Do we measure progress against the specific social inequity concerns we identified?
- How do the performance measures report on whether social equity is increasing or decreasing?
- How are the performance measures incorporated into corporate reports?

It is recommended that staff training be developed to support undertaking a SEAT assessment. Training helps staff to understand why they are doing this work, which is a crucial component in building organizational buy-in. Undertaking training as a work team can help staff groups further customize SEAT to their areas of work.

MVRD could also consider requiring a statement on social equity impacts, generated through the SEAT process, for inclusion in all Board reports.

## **5.4 Initial Policy Content Gaps**

The review of *Metro 2040* undertaken as part of the [Social Equity in Regional Growth Management](#) report (2019) can provide an initial starting point for focusing the review of policy and practice, and should be referred to in conjunction with this Social Equity Study.

Some of these recommendations (Ecoplan, 2019) are included here for reference:

*Metro 2040 includes discussion of some of the identified equity issues including: access, affordability, health, and opportunity. However, the plan does not directly discuss discrimination, obstacles, or aspects of disparity.*

*Housing is Metro 2040's policy area with the most equity references. The goal to "Develop complete communities" (Goal 4) is the primary way in which Metro 2040 implicitly supports equity. By developing complete communities, Metro 2040 makes improvements in multiple policy areas, including housing, social services, food, and the environment for all residents. Wellbeing in these policy areas also supports success in other areas of life. However, Metro 2040 does not explicitly discuss how improvements to these policy areas may be inequitably distributed, and that some residents may face greater obstacles than others.*

*Environmental. There is an emphasis on improving air quality which would benefit all residents. Metro 2040 could specify which communities bear this burden most significantly or which residents may be most greatly impacted by poor air quality then target investment, or policy directed to achieve a more equitable outcome.*



*Economy and Employment. Though not mentioned in Metro 2040, plans from other jurisdictions emphasized industrial lands can support a range of skilled to unskilled employment opportunities that can increase additional access to jobs. Mapping transportation networks, employment lands and communities where high proportions of equity-seeking groups live may provide additional insight to access of employment.*

*Climate. Metro 2040 measures communities' climate change preparedness. Metro 2040 could also consider people and communities most vulnerable to natural hazards resulting from climate change and how to equitably distribute the costs of mitigating and adapting to climate change.*

*Agriculture. Agricultural policy focuses on protection of rural lands from urban development but does not identify access to land for employment or small-scale agricultural production.*

*Metro 2040 has a strong monitoring framework, particularly for environmental, economy and employment, and climate policy areas, but does not explicitly mention equity...Currently, equity is not specifically mentioned at the Monitoring level of the plan nor are specific equity-seeking groups emphasized strongly. However, Metro 2040 already tracks several metrics that could contribute to a strong equity monitoring framework.*

## 6. Opportunities for Future Work

The consultants have identified two categories for future work opportunities related to social equity: research and engagement. These are outlined below.

### 6.1 Research

The Social Equity Study includes the first Inequity Baseline developed for Metro Vancouver, and one of the first of its kind in Canada to bring together the data in this way. To date, an inequity assessment model does not formally exist in Canada and as such this work is exploratory. There are numerous potential opportunities for further research and refinement. These opportunities can be broadly categorized into the following:

1. **Inequity Index Enhancements** - better data collection or more thoughtful approaches to certain indicators.
  - a) Currently there are significant gaps in the data for elements such as **health outcomes, mental health and wellbeing**. Many of these elements are collected from two critical data sources: My Health, My Community, and the Provincial COVID-19 population survey. It is our understanding that the MHMC survey will be renewed in 2021 and all elements of that survey should be included in future iterations of this work. The provincial COVID-19 survey represents an excellent opportunity for additional data points at highly refined geographies. We suggest that these data elements be incorporated into future iterations of this work as well. Absent these two data sources, we suggest that MVRD collaborate with appropriate partners on a systematic health and well-being survey that captures these elements in a consistent manner and at a reasonable geographic scale. We recognize that there are considerable costs associated with this type of survey, but without these data points we are missing key descriptors of unequal health outcomes and may miss the presence of highly marginalized populations.
  - b) Many **environmental considerations** such as criteria air contaminants, noise pollution, and nuisance areas, for example, are not well explored in this study due to project scope limitations. This is due to the fact that some of these elements do not lend themselves well to survey data but rather require significant modeling and measurement to establish baselines and disturbances. Many of these elements can be constructed or modeled from sensor data over time or with well calibrated models, and should be included in future iterations of this work.
  - c) Information with regards to **personal safety, crime, collisions, and policing** are not captured at all in this work. This is due to the fact that most of this information is captured at the local level and by municipal authorities, and may not be publicly available. We encourage MVRD to work with municipalities and provincial agencies to collate crime and safety data in such a fashion that it can be used in a regional study to understand the spatial variability of safety in the region.
  - d) **Universal accessibility and ability** are poorly explored in this work due to the fine scale of the data (for example: curb cuts, cross-walks, etc.); moreover, considerable information that is at the street scale is not incorporated into this work. While a systematic examination of every street by a surveyor is out of the question, technologies currently exist that allow for automatic classification of streetscapes through an AI-driven process such as State of Place. While imperfect in its subject application, this type of effort can be used to bring in urban design elements into regional equity work and can help weave in narratives with regards to the urban realm and its impact on social equity.
  - e) **Wealth and political power** are also not well explored in this work. While income is incorporated into the baseline, it is a weak descriptor of inequity and should be replaced by an indicator that measures wealth and/or intergenerational stability. Furthermore, voting patterns present a cursory examination of the role of the political process in dictating equity. Some elements that may be useful to strengthen these indicators could include:
    - An assessment of home values and the presence of mortgages at finer geographic scales

- An assessment of pace of change in a neighborhood versus real estate transactions or apartment renovations
  - An assessment of representativeness of local neighbourhood associations versus the demographics of their constituents
  - An assessment of political representation versus the demographics of their constituents
- f) Finally, the assessment of **displacement and gentrification** could have been strengthened considerably with additional resources and research parameters. Two possible avenues of exploration could include:
- Developing a model of gentrification that measures current or forecasted gentrification as opposed to past gentrification. This type of effort should be instrumental in identifying areas that are vulnerable to rapid changes in neighbourhood composition.
  - Developing a more concrete model that accurately predicts displacement from new development. This model should include granular data and rely on market information to predict when, how and what change will occur in an area. These changes can be used to predict social equity impacts which are discussed in the section below.

2. **Inequity Index Extensions** - These are possible future explorations of equity using the inequity baseline. All are grounded in past baseline efforts of the peer jurisdictions we profiled for best practices. They include:

- a) **Bottom-up models of equity** - This is a type of work completed by the Cities of Ottawa and Tacoma that incorporates the lived experience of diverse communities in the formulation of an inequity baseline. This could involve a more inclusive engagement process for developing an inequity index. While we consider the inequity baseline presented in the Social Equity Study as sound, our experiences as analysts and professionals with a great deal of privilege can in no way replace or even come close to matching the appreciation of equity that is observed each day by groups facing systemic social inequity and injustice. We strongly recommend that future phases of this work incorporate these voices into subsequent iterations of the inequity baseline.
- b) **Equity impact model** - when paired with disaggregate data, inequity index baseline data can be effectively employed as a model for planning work to understand the equity impacts of various land use decisions. However, for this to occur several preconditions must be achieved:
- we must develop a shared notion of unintended consequences and positive and negative equity impacts of urban change. This should necessitate thoughtful study of the real effects of urban planning on disparate populations;
  - we must be able to disaggregate data down to a level wherein planning scale decisions can be interpreted beyond abstract considerations of growth and change. This may not be possible at the regional scale due to considerable data requirements as well as the multidimensional nature of equity information. However, a disaggregate data strategy (see below) can be instrumental in preparing a foundation for this type of analysis; and
  - we must study past effects and determine if they will be impactful into the future. That means a thoughtful examination of the outcomes of past planning decisions and the resulting impacts to communities. Certain case examples such as the displacement of lower cost rental housing in Burnaby could serve as a starting point for this assessment.
- c) **Disaggregate data strategy** - We strongly suggest that to progress the inequity baseline and analysis work in the region, the development of a disaggregate data strategy is required. This type of strategy is necessary to:
- develop data at scales that are functional for planning type decisions;
  - maintain the privacy and safety of groups with multiple overlapping equity considerations;
  - identify and explore smaller scale communities of interest;

- create guidelines for information dissemination and visualization that protect privacy as well as reduce subjectivity in interpretation;
- build trust in data and develop repeatable processes for maintaining high quality equity data over time; and
- prepare a basis by which citizen and community prepared data can be integrated into the authoritative information that is prepared by government and non-profit agencies.

A good case example for the development of a disaggregate data strategy is the City of Toronto. Their multi-year process to develop a framework for data capture and dissemination should lead to more effective equity impact analysis in the GTA. We believe that MVRD is well positioned to lead the effort to build a disaggregate data strategy and we would be happy to explore this required element with the corporation further.

d) **Regional Equity Explorer** - a potential tool that has considerable utility beyond the static mapping prepared for this baseline, a regional equity explorer can democratize the availability of this information for multiple user groups. For each of the tools highlighted below, it becomes apparent how an interactive user interface coupled with significant documentation and support can allow for these data to be used a variety of user types. That being said, we also note that access to the Internet as well as the computing power necessary to run these applications is limited for some populations so we also support the continued development of static products that can be made available to most populations. High quality examples of these types of tools are available for:

- the City of Tacoma's [Equity Index](#);
- LA County's [equity indicator tool](#); and
- Ottawa's [neighbourhood equity map](#)

## 6.2 Engagement

How MVRD engages with community members, partners, consultants, and other individuals and communities external to the organization is another place where inequity can show up. Much of what we heard and read about as part of the Social Equity Study can inform MVRD engagement practices. While this should not be viewed as a comprehensive set of recommendations around social equity-informed engagement, it can be a starting point. These build on an earlier set of recommendations from the [Social Equity in Regional Growth Management](#) report (Ecoplan, 2019), presented below:

- *Develop policy to support engagement of diverse perspectives.*
- *Maintain advisory bodies and innovation groups: equity based working groups, community advisory committees or an ongoing community advisory board, codesign labs*
- *Redefine “the expert” for data collection.*
- *Develop a framework for obtaining data from community members of equity-seeking groups that involves co-development of the process as well as data collection. Pay for these services through an honorarium, hourly or other means.*
- *Reduce barriers to engagement by offering travel subsidy, childcare or reimbursement of costs for childcare, honorarium for community leaders, food at events*
- *Observe best practices for engagement and provide a wide variety of opportunities and outreach to equity-seeking groups for engagement on incorporating equity – focus groups, public opinion surveys, stakeholder forums, online, etc.*
- *Include materials in formats relevant to communities – for example videos, use of multiple languages, and allowing the time needed for engagement and multiple events to build substantial relationships.*
- *Ensure that a wide range of staff be engaged directly with communities, in particular those traditionally less called upon to conduct engagement (e.g. engineering/infrastructure) and not*

*just planning, communications or a specific outreach team.* [Note: relevant training in respectful engagement techniques would need to accompany this approach]

One theme that strongly emerged throughout this project was the need to take a distinct approach to engaging with Indigenous Peoples. This starts with a fundamental question: How do we move forward on social equity work with the recognition that we are trying to do so on unceded territory? It is recommended that MVRD dedicate adequate resources to undertake a specific and distinct engagement process with rural and urban Indigenous populations to better understand how each community defines social equity, in addition to identifying specific inequities they face.

There is also a need to provide accountability to the public and the community, to demonstrate following through from consultation to impact. This sentiment is eloquently made in a statement by the Urban Indigenous Peoples' Advisory Committee to the City of Vancouver, in a document titled "*Calls for Meaningful Action on Anti-Racism and Reconciliation by Mayor, Council and Civic Departments*" (July 7, 2020): "We see much more attention focused on consultations and dialogue, without the corresponding commitments of action and meaningful change. From our perspective, the continued refrain of 'starting a conversation' and 'engaging in a dialogue' feels disingenuous when we see so little impact resulting from them."

## 7. Conclusion

Expanding social equity in a society that has developed to privilege some at the expense of others is a complex task. In addition to the legacy of colonialism and institutional racism, inequity in the region is further compounded by rising unaffordability and the reality of climate change, which exacerbate the impacts of structures of oppression. Human-related issues such as social inequities are complex and messy in reality, despite our efforts to set up linear systems to address them. Moving towards a more equitable and just region will require confronting our past, taking an iterative process, learning and evolving as we go, deep and inclusive engagement, and making a commitment to build on earlier steps.

This report provides a snapshot of various inequities present in the region, as well as an approach for continuing to identify and address systemic barriers and issues. It highlights the priority inequities in the region connected to growth and land use policy, and suggests tangible ways to measure the progress of addressing these inequities in the form of recommended Equity Performance Measures. It recommends a refined definition of social equity in Metro Vancouver to help provide clarity and consistency, while a Social Equity Analysis Tool (SEAT) gives MVRD a process to help achieve this. Finally, recommendations for next steps towards improving/increasing social equity through regional growth planning are outlined, including the creation of a corporate social equity plan; additional research opportunities; and engagement recommendations.

More broadly, MVRD's social equity work should strive to remove inequity-producing mechanisms within its jurisdiction, and commit to co-creating equitable outcomes with affected communities. It will mean institutional atonement, made possible through advocacy and shared learning that creates policy and practice which corrects historic wrongs. If equity work is guided by these commitments, it is positioned for success.

Integrating social equity in MVRD's processes and practices will help the organization meet sustainability and liveability objectives of creating complete communities, increasing access to transportation and housing choices, and responding to the impacts of climate change with dignity, respect and justice.

# Appendices

## I. Literature Review

There have been significant contributions to the understanding of lived experiences of inequity over recent years, with many researchers, writers, professionals and activists sharing stories and meaning in articles, podcasts, books, workshops and lectures. Indigenous, Black, People of Colour, queer, trans, non-binary, two-spirit, lesbian and gay voices - and the intersectional identities these folks inhabit - have surfaced issues and complexities that many in dominant identity groups can and should listen to and learn from.

While these contributions were not explicitly focused on the regional planning context, they provide valuable insight that can be applied in this setting. Key themes and issues have been selected from articles, workshop and lecture notes, and other writing and presented here as part of the Social Equity Study. These key themes from the review of the literature are organized into the following categories:

- Internal Corporate Commitments
- Engagement
- Research + Data
- Planning + Development
- Placemaking

### Theme: Internal Corporate Commitments

**Organizations should assess internal equity capacity before taking on external work.** Understanding more about yourself as an organization will help confront personal and organizational biases, and ensure that space is being made internally for the voices that may not be being heard. Urban planning consultant Tamika Butler recommends asking questions such as: “Who works for the agency? Who are the decision makers? What type of training does the staff do, and what kinds of continuing education are they getting? Is equity being addressed within the agency?” Butler critiques the tendency for agencies to centre conversations about equity out in the community, and not on the agency itself. “To expand these conversations about equity, we must first make sure that our systems are more representative and diverse, bringing more voices to the conversation earlier on,” says Butler (S. Gienuzzi, 2019). Placemaking consultant Jay Pitter (2020) recommends reviewing “policies and practices that may be creating invisible barriers for team members from equity-seeking groups to make meaningful contributions within your municipality or organization/firm.”

**Commitments must be paired with concrete actions.** It’s not enough to say you or your organization are anti-racist, or are committed to equity. It’s about what you are doing. This involves admitting we live in a racist society, and admitting our mistakes and learning from them (I. Kendi, 2020). The City of Seattle uses a racial equity toolkit to ensure racial equity is considered in all projects. The tool is used to determine, for instance, the risk of displacement for different communities and how to mitigate this. Another example might be adding “Equity Impact” as a topic to address in all Board reports, so it is part of agency decision-making.

**People in power make policy choices based on their own experiences.** Planners can have biases and training as bureaucrats that affect their ability to listen to, understand, and represent the needs of the community. There are barriers to accessing opportunities to hear from different voices, and distortion of facts and stories arising from hearing limited perspectives. When community members don’t approve of what is being proposed, it can cause planners to become frustrated as they consider the supposed superiority of their own education, expertise and previous work. It is all the more important to listen to these voices. “Lived experiences should be leveraged and seen as truth, even when planners can’t connect with them” (J. Aviles, 2020).

**Consider how elements of White (body) supremacy culture may be fundamental to your organization.** Trauma specialist and therapist Resmaa Menakem describes the concept of ‘White body supremacy’ as “the perpetuation of a false narrative that White people are better than people with other skin colors and ethnic backgrounds.” It is viewing Whiteness as the status quo, placing White people at the top of a ladder of racial



hierarchy while positioning Black populations at the bottom. Many people may view White supremacy only through the, “narrow lens of the Ku Klux Klan or similar extreme representations of racist harms. While the KKK embodies White supremacy, so too do many other societal norms that are taken for granted” (K. Jagoo, 2020). Understood more broadly, White supremacy culture can be seen as a set of often unspoken norms, beliefs, practices, behaviours, and systems that reproduce the ideology that White people are superior.

Characteristics of White body supremacy are often present within governments and planning organizations, but very difficult to name or identify. They can be used as the default norms without being pro-actively named or chosen by the group using them. Examples of these are taken from Kenneth Jones and Tema Okun (2001), and presented in the table below.

Table 8: Characteristics, consequences, and antidotes to White body supremacy

Characteristics	Consequences of these Characteristics	Antidotes to these Characteristics
Perfectionism	Little appreciation for the work. Often focus on what's wrong rather than identifying what is right, very limited reflection or learning.	Instead: develop a culture of appreciation, learning and shared expectations.
Sense of Urgency	Continued sense of urgency that makes it difficult to take time to be inclusive. Frequently results in sacrificing communities of colour for highly visible results to the benefit of White communities.	Instead: focus on realistic work plans and funding proposals that acknowledge what it means to set goals of inclusivity and diversity.
Defensiveness	Defensiveness to new ideas, resulting in difficulty raising these ideas. Creates an oppressive culture.	Instead: understand the link between defensiveness and fear, and give people credit for their ability to handle more than you might imagine.
Quantity over Quality	All resources of organization are directed toward producing measurable goals.  Things that can be measured are more highly valued than things that cannot.	Instead: include process or quality goals in your planning and ways to measure these.  Ensure your organization has a values statement that highlights the manner in which you want to do your work.
Worship of the Written Word	Little value given to other ways in which information gets shared. If it's not in a memo, it doesn't exist.  Those with strong documentation and writing skills are more highly valued,	Instead: recognize contributions and skills of everyone in the organization, such as relationship building.  Determine what needs to be written down, and then come up with alternate ways to capture other material.

	even in organizations where ability to relate to others is key to the mission.	
Only One Right Way	<p>The belief that once people are introduced to the “right way,” they will see the light and adopt it.</p> <p>When they do not adapt or change, then something is wrong with them, not with us (those who know the right way).</p>	<p>Instead: accept there are many ways to get to the same goal, and work on ability to notice when people do things differently and how that might improve your approach.</p> <p>When working with communities different than your own, recognize your need to learn about the communities’ ways of doing.</p>
Paternalism	Those with power believe in making decisions for and in the interests of those without power, often without understanding the experiences of those for whom they are making decisions for.	Instead: provide clarity on level of responsibility and authority throughout the organization, and include people who are affected by decisions in the decision-making.
Either/Or Thinking	<p>Things are simplified and framed as either/or, good/bad, right/wrong, with us/against us.</p> <p>Creates conflict and increases sense of urgency, with no time to consider alternatives.</p>	<p>Instead: notice when complex issues are being simplified, particularly when stakes seem high or urgent.</p> <p>Slow it down and encourage a deeper analysis.</p>
Power Hoarding	<p>Little, if any, value around sharing power. Power seen as limited, only so much to go around.</p> <p>Those with power are threatened by suggestions for change and feel they are a reflection on their leadership.</p>	<p>Instead: understand that change is inevitable and challenges to leadership can be healthy and productive.</p> <p>Power is not a limited quantity, with only so much to go around.</p>
Fear of Open Conflict	<p>People in power are scared of conflict and try to ignore it or run from it. Those with power equate the raising of difficult issues with being impolite, rude, or out of line.</p> <p>When someone raises an issue that causes discomfort, the response is to blame the person for raising the issue rather than to look at the issue.</p>	<p>Instead: practice role playing conflict resolution before conflict arises, and once a conflict is resolved take the time to revisit it to see how it may have been handled differently.</p> <p>Distinguish between being polite and raising hard issues, and recognize that people shouldn’t be required to raise hard issues only in ‘acceptable’ ways.</p>

Individualism	Competition is more highly valued than cooperation. Little experience or comfort working as part of a team, as well as delegating work to others.	Instead: include ability to delegate and to work as part of a team within performance and hiring evaluations.
Progress is Bigger, More	Observed in systems of accountability and ways we determine success.  Progress is an organization which expands (adds staff, adds projects) or develops the ability to serve more people (regardless of how well they are serving them).	Instead: ensure any cost-benefit analysis includes full costs i.e. cost in morale, credibility, use of resources.  Include process goals in planning, around how you want to work not just what you want to do.
Objectivity	The belief that there is such a thing as being objective or free from bias.  The belief that emotions are inherently irrational and should not inform decision-making or group process.	Instead: recognize everybody has a world view that affects the way they understand things, and push yourself to sit with the discomfort that arises when people are expressing themselves in ways that are not familiar/the same as yours. Assume everybody has a valid point.
Right to Comfort	The belief that those with power have a right to emotional and psychological comfort while scapegoating those who cause discomfort.  Equating individual acts of unfairness against White people with systemic racism experienced by People of Colour.	Instead: understand discomfort is at the root of all growth and learning, and welcome it.  Don't take everything personally.

### **Theme: Engagement**

**Equity as a process**, not so much a destination. We can't just tick it off a "to do" list - we need to put continued effort and energy towards the equity process. A good way of doing this is to commit to engaging the community throughout the whole planning process, not just during the lead-up to a decision. Consider what it would look like for planners to build an engagement strategy for every phase of a project - predesign, design, construction, and evaluation (J. Aviles, 2020).

**Incorporate Social Equity Context Experts in any new project.** While it may challenge traditional timelines and ways of engaging, it is critical to commit to the inclusion of people with lived experience throughout a project process. Recognize that this way of working, based on building trust and relationships, takes time, effort and open communication - no matter who is involved. Some key principles learned through the experience of the City of Kelowna during their "Journey Home Strategy to End Homelessness" (BC Healthy Communities, 2020) include:

- Compensate people for their contributions.

- Use a convener rather than a facilitator, to allow for a more peer-based dynamic and to create an atmosphere of trust and sharing without direction or influence by project staff.
- Note-taking can be triggering, bringing to mind writing in files during intake at institutions. Consider using a graphic facilitator to take visual notes instead. Another benefit of this approach is that it accommodates various levels of literacy and English language fluency.
- Choose meeting locations that are neutral spaces, rather than hosting at the offices of the project owner.
- An inclusive process should not limit the number of people who can attend.
- Invest in relationship-building between disparate groups, and in less formal settings such as sharing a meal.

Jay Pitter (2020) also highlights the benefits of incorporating context experts: “Lived experience experts are...the keepers of important place-based stories and rituals. When this form of knowledge is coupled with professional expertise and translated into design, programming and policy decisions—community transformation processes are more harmonious and productive.”

### **Theme: Research + Data**

**Use data and research to challenge racist misconceptions.** Black, Brown and Indigenous people are disproportionately poor. Dominant society may attribute this to something inherently “wrong” with the group rather than an outcome of systemic oppression. These racist ideas prevent people from seeing the true source of the inequity: racist policies and compounding historic injustices. Consider these stereotypes when proposing new policies or projects, and bring the data and research that negates these into the conversation preemptively (I. Kendi, 2020)

**Humanize data collection by including stories and context.** Inequities and lived experiences aren’t simply captured in statistics, but stories, too. Without context, datasets can easily be misinterpreted, or even manipulated. Tamika Butler stresses the need to “take a step back and make it about people and say, ‘This is what the data shows us about our community. This is what it means’...For example, imagine a project aimed at shortening the run-time of a [transit] route. It’s possible to reach the goal by [looking at the data and] cutting a stop that has a high dwell time. But why does that stop have longer dwell time? Maybe it’s near a senior center and by cutting the stop, older adults would have to walk farther to get to the bus. Numbers are necessary, but a holistic approach is ideal” (S. Gienuzzi, 2019).

**When sharing data, include asset-based stories and give context for disparities.** We need to not only focus on disparities, but on stories of strength and resilience, too. “Often, quantitative research focuses through a lens that measures and reports on the disparities of Indigenous Peoples, rather than highlighting positive successes in healing, health and wellness...The deficit lens undermines Indigenous Peoples’ self-confidence and stigmatizes them with labels” (R. Wuttunee, 2019). When discussing inequities that affect Indigenous Peoples, include a discussion on the systemic barriers that have caused these inequities. Wuttunee states, “Indigenous Peoples are aware their communities have higher incarceration rates, suicide rates, poverty and addiction than the rest of Canada. However, they may not know or understand why these conditions exist for them, especially the younger population, which in turn affects their self-worth...Information about Indigenous health in mainstream research is usually presented without sufficient context. When context about Indigenous health data is not provided, there is insufficient information needed to make sense of the facts highlighted.”

**Incorporate cultural protocols of the Indigenous nations involved in the research.** This is a matter of respect for the culture and diversity of the host nation. It is also a way to decolonize by demonstrating “a willingness to acknowledge the procedures and processes of another cultural community as equally valid and worthy” (R. Wuttunee, 2019). There are many Indigenous Peoples, some living inside and many outside their traditional territory, within Metro Vancouver. Rachel Wuttunee shares an Indigenous approach to following protocols in this urban context: “Ask the host nations for guidance on protocols, as this is still their unceded, ancestral, and

traditional territory. Indigenous Peoples live their daily routines with their own cultural protocols but ultimately respect, acknowledge and follow the protocols of the nations on whose land they are on.”

### **Theme: Planning + Development**

**Urban densification plans need to offer more options than just high-priced condos or neglected public housing.** Jay Pitter (2020) compares two forms of density: *Dominant density* is “designed by and for predominantly White, middle-class urban dwellers living in high-priced condos...with large parks, generous pedestrian infrastructure, and proximity to jobs and services.” *Forgotten density* includes “factory dorms, seniors’ homes, tent cities, Indigenous reserves, prisons, mobile home parks, shelters, and public housing...with common characteristics such as ageing infrastructure, over-policing, predatory enterprises like cheque-cashing businesses, inadequate transportation options, and sick buildings.” Density can bring benefits to a community, such as improved walkability, economic opportunity, social networks, and land use efficiencies. But we need to work with racialized communities and other social equity context experts to co-create the parks, housing, markets and streets that make up the developments to ensure that those benefits are shared equitably. Pitter suggests the need to focus on “access to green space and culturally responsive amenities, accommodating middle-to-lower income residents and diverse housing types, transit-supportive densities, and rehabilitating aging building infrastructure without displacing entire communities.” This approach will ensure communities are not only planned in a healthy and sustainable manner but are also inclusive of racialized and other marginalized populations who are often displaced through high-density condo developments.

**Gentrification and displacement occurring from Transit-Oriented Development (TOD) is not an accident or an anomaly.** This is a deeply entrenched structural issue that is happening more and more often. We need to consider how to counter this - to ensure the benefits of TOD are shared by everyone including Indigenous people, People of Colour, women, and other social equity context experts, some of whom may be existing residents; for TOD to centre local assets and hidden routes of long-standing communities; and to provide mechanisms for ensuring moderate to low-income residents remain “in place” amid TOD (J. Pitter, 2019).

**“Revitalization” can mean the systematic and deliberate destruction of place-based communities.** White neighbourhoods are often pointed to as the highest point of livability, while predominantly Black and Indigenous communities are frequently seen as requiring infrastructure and design innovations that can result in displacement and increased surveillance, achieved through “Eyes on the Street” design and often, increased police presence (A. Yasin, 2020). These revitalization processes are often initiated to make Black and Indigenous neighbourhoods more inviting to White residents and easier to police, rather than increasing livability for existing populations.

### **Placemaking**

**Be wary of “pop up urbanism” and pilot projects.** These pilots and experiments often occur in low-income communities, and circumvent thoughtful and participatory community engagement in service of quick-build projects. These projects override public feedback processes that are necessary for community support, and can exclude entire communities (D. Thomas, 2020).

**White planners view placemaking as an important liveability goal. For Black, People of Colour and Indigenous, this can feel very different.** The intersectional realities of identity, including race, gender, ability and age, concretely shape our experience of public spaces. Jay Pitter (2020) argues that this is why “even the most well-designed public space can elicit an infinite number of experiences within and across diverse groups.” The notions of “placemaking” for BIPOC communities can include legacies such as ‘place as watchtower to track and police the movement of BIPOC people’; ‘place as quarters for forced labourers’; ‘place as the severing of kinship ties’; ‘place as routes designed to confine movement.’ Planners and urbanists need to consider how our history of city building has gotten us to a point where Black community members are more likely to be harassed and killed in public spaces by public officials (J. Pitter, 2020). In the words of Amina Yasin (2020), quoting Dr. Ibram Kendi: “Since cities were built on stolen lands by stolen people, there is ‘no such thing as a non-racist idea’ when it comes to urbanism.” Placemaking initiatives must be interrogated from a social equity perspective

with special attention paid to recognizing and protecting places that are already special or important to various groups.

**CPTED and ‘Eyes on the Street’ can uphold inequity.** Crime Prevention Through Environmental Design (CPTED) and similar urbanist principles can uphold and enforce biases that criminalize Black, Indigenous and People of Colour - and poor people of all races - by portraying these groups as ‘out of place’ in public space. Furthermore, current CPTED practices may not result in improved safety for Black, Indigenous, and People of Colour. We need to acknowledge the historic and linked relationship between public space, enforcement and racism. “Cities and neighbourhoods across North America developed by ensuring that social and public interactions became institutionalized and regulated through racial segregation. As a result, many White neighbourhoods and residents are shielded from the type of police violence experienced in Black, racialized and Indigenous communities...This shows up repeatedly when Black people make use of their right to ‘White spaces,’ resulting in being policed in their homes or common areas by predominantly White neighbours who assert their ownership and intended use” (A. Yasin, 2020).

**Vision Zero needs to mean zero BIPOC lives lost on streets, including due to police violence.** Vision Zero is typically regarded as a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy mobility for all. However, planners need to spend as much energy fighting for human rights as we do fighting cars. In the words of Dr. Destiny Thomas (2020), “Until Black people are no longer being hunted down by vigilantes, white supremacists and rogue police, private vehicles should be accepted as a primary mode of transportation.” This can include investing in trauma-informed urban design (with a goal of creating physical spaces that promote safety, well-being and healing), housing, youth development, equitable transportation and non-displacement policies, and restructuring “neighbourhood watch” programs as “neighbourhood care” programs (A. Yasin, 2020).

#### *Sources*

Aviles, Jose Richard. **Planners as Therapists, Cities as Clients.** 2020 -10. *APA Journal*

BC Healthy Communities. **Kelowna’s Lived Experience commitment to healthy community engagement.** Accessed online 2020-11-03.

Guerrazzi, Siena. **Data Is a Tool for Equity and Inclusion: Interview with Tamika Butler.** 2019-10-18. *Swiftly*

Jagoo, Krystal. **What is White Supremacy?** 2020-10-11. *VeryWellMind*

Jones, Kenneth & Okun, Tema. **The Characteristics of White Supremacy Culture.** 2001. From *Dismantling Racism: A Workbook for Social Change Groups*

Kendi, Dr Ibram X. **Tactical Anti-Racism: Creating Equitable Communities by Transforming Systems.** 2020-10-21. Railvolution Regional Forum

National Inquiry into Missing and Murdered Indigenous Women and Girls. **Reclaiming Power and Place: Final Report - Calls to Justice.** 2019.

Pitter, Jay. **A Call to Courage: An Open Letter to Canadian Urbanists.** 2020-06-10. Canadian Urban Institute

Pitter, Jay. **Urban Density: Confronting the Distance Between Desire and Disparity.** 2020-04-17. *Azure Magazine*

Pitter, Jay. **Beyond the Map.** 2019-09-08. Railvolution Regional Forum

Thomas, Dr. Destiny. **Urbanism is Complicit in Infra-Structural Racism – And Reparations Have a Place in the Built Environment.** 2020-07-27. *StreetsBlogUSA*

Thomas, Dr. Destiny. **‘Safe Streets’ are not safe for Black lives.** 2020-06-08. *CityLab*

Wuttunee, Rachel. **Indigenous Equity Data**. 2019-08-30. City of Vancouver

Yasin, Amina. **Whose Streets? Black Streets**. 2020-06-18. *The Tyee*

## Equity and Inclusion Policy Assessment Tools

List of documents and sources referred to while developing the SEAT

- [Advancing Equity and Inclusion: A Guide for Municipalities](#)
- City of Edmonton: [The Art of Inclusion. Our Diversity & Inclusion Framework](#)
- City of Ottawa [Equity & Inclusion Lens](#)
- City of Seattle [Racial Equity Toolkit \(Race & Social Justice Initiative\)](#)
- City of Toronto [Equity Lens](#)
- City of Vancouver (conversations with staff)
- [Equitable Development Principles & Scorecard](#)
- [Global Diversity & Inclusion Benchmarks: Standards for Organizations Around the World](#)
- LA County Metro [Equity Platform Framework](#)
- PlanH [Equity Action Guide](#)
- King County [Equity Impact Review](#)



## II. Developing the Inequity Baseline

### Key Elements of an Inequity Baseline

1. **Purpose and Best Practice** - Based on our review of inequity baseline best practices from peer jurisdictions, we noticed that the most common purpose of an equity baseline is to assist planners and social policy practitioners in their efforts to understand and address disparities in their localities. GIS makes it possible to provide a high-level overview of inequity indicators. With that in mind, it should be noted that the inequity baseline cannot be used to replace community consultation; rather, it can be used as a tool to identify trends that can then be confirmed through inclusive public consultation and on-the-ground participatory research.

Second, we noted that the best equity baselines were constructed from the ground up, through strategic consultation with social equity context experts<sup>1</sup> (people with lived experience of inequity, based on one or more intersecting characteristics of their identity). Data selection and interpretation were done collaboratively between the GIS practitioners and populations most affected through this process. While this was not the case for this project, as this work is exploratory in nature, we strongly suggest that subsequent steps involve extensive consultation with members of the community to evaluate, confirm and prioritize addressing intersecting social inequities at a regional level. To further address historical under-representation in decision-making, there should be an emphasis placed on centering Black, Indigenous and People of Colour professionals to guide the equity building work with their communities, and within the organization.

2. **Uses** - An inequity baseline or index can be used in a number of ways, such as:
  - a. To identify communities who may have compromised adaptive capacity and higher sensitivity to many hazards such as communicable disease (such as COVID-19), extreme heat, air pollutants, flooding and/or sea-level rise, water pollutants;
  - b. To prioritize locations or groups for short, medium and long-term plans, investments, programs, interventions and / or policies;
  - c. To support and supplement public and professional consultation for the construction of an overall equity framework;
  - d. To create benchmarks for the region using indicators for ongoing measurement of progress / performance;
  - e. To identify the presence, or determinants of, social inequity including environmental racism, sexism, ableism, ageism, displacement and gentrification, housing instability, rapid urban change, and/or volatile economic systems, and lack of access to clean drinking water, etc.;
  - f. To understand and mitigate the impacts of planning decisions as they pertain to social wellbeing of existing and future residents.
3. **Baseline construction** - Our general method to construct the baseline followed the best practice of the City of Oakland, which is a leader in equity and social justice planning practice. The general steps presented below conform to the work plan used for this project:
  - a. Research best practices and consult with other equity practitioners in the region;
  - b. Research regional inequities (i.e. the conditions of equity), those who experience those inequities (populations), and the region's policy priorities;

---

<sup>1</sup> We prefer the term "social equity context experts" over the term "equity-seeking group" for this project. The phrase "equity-seeking" overburdens those who are already impacted by systemic inequities to drive the rationale for equity building. Working towards equity means positioning those that hold systemic power as "equity-sharing" groups, thus balancing and including all the necessary actors for socially equitable outcomes for all to be possible and attainable.

- c. Create draft equity considerations and inequity concerns, based on the research in Steps a and b;
  - d. Solicit feedback from a range of stakeholders, including community members, advocacy groups, government agencies, and regional and municipal leadership. (In future, this step should include community workshops.) Due to the limited nature of the project, learning from others was limited to the following groups:
    - i. Regional equity practitioners;
    - ii. Regional land use and transportation planners; and
    - iii. Literature review of secondary sources: leaders in equity and social justice.
  - e. Revise the draft baseline in accordance with the feedback received;
  - f. Test the indicators through targeted case examples;
  - g. Revise the baseline and solicit additional feedback as needed;
  - h. Finalize the tool and publish findings.
4. **Integrity and Success** - There are significant technical as well as ethical requirements to produce a high-quality baseline. Below are some important considerations for our work:
- a. Indicators should be measurable and demonstrable on an ongoing basis and at a regional scale; differentiating and impactful (diverse and relevant); grounded in social and environmental justice theory; and relevant to the core vision and mission of Metro Vancouver and member municipalities;
  - b. Indicators selected should be approachable, comprehensible, accessible and relevant to the general public and especially to social equity context experts;
  - c. Indicators should lend themselves to consistent interpretation in future years to establish a sense of direction and progress as well as to highlight the effects of well-intentioned policy; and
  - d. Indicators should lend themselves to respectful and intersectional interpretation, without adding to existing subjective bias or implicit value judgements.
5. **Ethics of the data** - Equity data, especially data that pertains to specific populations with multiple equity concerns, can be leveraged to reconcile past harms and mitigate the effects of future decisions. However, this same data can be used to benefit those least at risk, or to override populaces with potentially fewer tools or reduced capacity to withstand the forces of urban change. For instance, data could be used to identify areas where community opposition to new developments may be low due to the presence of multiple intersecting social inequities. Practitioners who use this equity/inequity baseline will benefit from using it from a position of empathy and in-depth understanding and with a goal of addressing the impacts of inequities across the region.

## Inequity Baseline Best Practice Review

Table 9: List of equity studies and indices consulted for inequity baseline best practices review.

Study	Link to Resource	Year of Work	Scale
Oakland Equity Index	<a href="#">Oakland Equity Index</a>	2018	Municipal
City of Tacoma - Equity Baseline	<a href="#">City of Tacoma - Equity Baseline</a>	2019	Municipal
Boston Social Vulnerability Indices	<a href="#">Boston Social Vulnerability Indices</a>	2016	Municipal
City of Vancouver Impacted Populations	In Process	2020	Municipal
City of Ottawa	<a href="#">Neighbourhood Equity Index</a>	2019	Municipal
LA County Equity Index	<a href="#">LA County Equity Index</a>	2016	Regional
King County Equity Index	<a href="#">King County Equity Index</a>	2017	Regional
California HPI	<a href="#">California HPI</a>	2020	State
Opportunity Index	<a href="#">Opportunity Index</a>	2020	National
Health Equity Index	<a href="#">Health Equity Index</a>	2020	National
National Equity Atlas	<a href="#">National Equity Atlas</a>	2020	National

## Inequity Baseline Assumptions and Limitations

### 1. Data Sources

#### *Statistics Canada - Census*

Statistics Canada collects Census data every 5 years, with the latest available Census being published in 2016. While this data's age may not always accurately represent our changing communities, it is currently the most comprehensive and reliable source of information on the region. Comparison with future Censuses is useful to determine changes and, eventually, trends. While it is currently the most comprehensive demographic research available, there are many facets that are not surveyed whatsoever or are not surveyed at a sufficiently granular scale, such as same-sex couples, and as such may only tangentially address equity concerns. Moreover, Census data is limited in scope as it is collected only one day a year every five years. We would also like to highlight that the Census survey from 2016 was not an inclusive process and as such many important populations were erased from the data. For example, the Census limits lone-parent families to male or female-headed, but does not explicitly include transmen, transwomen, or non-binary individuals.

In instances where the data originates from the Census, the original data title used by Statistics Canada is used and where appropriate an alternative data title may be included in brackets.

### *My Health My Community*

The My Health, My Community data is from the 2014 and was completed by over 33,000 participants in Vancouver Coastal and Fraser Valley health authority regions, which is a small fraction of the total population in the region. The survey was designed to reach as many people as possible, being provided across several media and in several languages. The data collection process utilized quotas to attempt to cover a statistically broad range across ages, genders, educational backgrounds, and ethnicities and numbers were adjusted to fairly distribute representativeness.

### *Early Development Instrument - UBC Human Early Learning Partnership*

The Early Development Instrument (EDI) is a questionnaire completed by kindergarten teachers from across British Columbia for all children in their classes. The [questionnaire](#) measures five core areas of early child development that are known to be good predictors of adult health, education and social outcomes. The EDI analysis has been repeated six times since 2004, with the most recent reporting occurring between 2017-2019.

## **2. Limitations: Indicators Omitted from the Inequity Baseline due to Lack of Data**

### *LGBTQIA2+ Community*

The lesbian, gay, bisexual, trans, queer, intersex, asexual and two-spirit (LGBTQIA2) communities in British Columbia experience numerous and intersectional inequities relating to employment, healthcare and economic factors, among others. This inequity is further exacerbated when other factors, such as age, income, ethnic identity and access to health care intersect with gender identity and sexual orientation. While inequities are experienced differently by each of the LGBTQIA2 communities, it is generally accepted that they are all social equity context experts. However, there is a lack of publicly available data available to incorporate these populations into this baseline study.

### *Additional Omissions*

Other key indicators or proxies omitted due to lack of data, scope, or granularity of available data were:

- Health - such as: life expectancy, health insurance (employment with benefits), preventable hospitalizations, hospitalizations from chronic disease, disabilities, substance abuse, infant mortality, premature death, and COVID-19 related data
- Environment - such as: clean air, projected extreme heat (climate change projections), food insecurity, brownfield or contaminated sites, proximity to nuisance areas (heavy industrial, freeway), proximity to major transportation corridors, noise
- Crime and safety - data on crime is unavailable at the regional scale. Data on collisions involving pedestrians or cyclists in conjunction with traffic volume, or incidents aboard public transit
- Education - such as: graduation rates, milestone grade proficiencies, chronic absenteeism, teacher turnover, teacher experience, teacher representation of student population

## **3. Granularity**

The data inputs for this study were available at a variety of different scales/granularity. For the purpose of our analysis, the study unit was defined as the Transportation Analysis Zone (TAZ). Many of the data sources were available at varying levels of detail, such as at the dissemination area (Census) or neighborhood (My Health, My Community). While the best available data to support this report, finer scale information through public engagement would benefit the study and improve the precision of the analysis.

### III. Data Dictionary for Inequity Indicators

Metro Vancouver Equity Study - Data Dictionary						
Indicator	Units/Type	Data Source	Link	Variable(s) Used	Proportional To (Census)	Notes
1. Visible Minority	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	__Total_visible_minority_population	Total_Visible_minority_for_the_population_in_private_households	
2. Indigenous Identity	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	__Aboriginal_identity	Total_Aboriginal_identity_for_the_population_in_private_households	
3. Seniors	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	__65_years_and_over	Total_Age_groups_and_average_age_of_the_population__100 percent__	
4. Children	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	__0_to_14_years	Total_Age_groups_and_average_age_of_the_population__100 percent__	
5. Single Parent Families	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	__Total_loneparent_families_by_sex_of_parent	Total_number_of_census_families_in_private_households__100 percent__	
6. Female-Headed Households	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	___Female_parent_1	Total_number_of_census_families_in_private_households__100 percent__	
7. Ethnic Diversity Index	Index from 0 to 1	Census, 2016	<a href="#">Census Profile 2016</a>	___South_Asian; ___Chinese; ___Black; ___Filipino; ___Latin_American; ___Arab; ___Southeast_Asian; ___West_Asian; ___Korean; ___Japanese; ___Not_a_visible_minority	Total_Visible_minority_for_the_population_in_private_households"	
8. Median Age	Integer (age)	Census, 2016	<a href="#">Census Profile 2016</a>	Median_age_of_the_population	N/A	
9. No Knowledge of Official Languages	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	__French_only; __English_only; __English_and_French	Total_Knowledge_of_official_languages_for_the_total_population__	Sum subtracted from 1
10. Median Household Income	Dollar CAD	Census, 2016	<a href="#">Census Profile 2016</a>	__Median_total_income_of_households_in_2015_dollar	N/A	
11. Poverty Ratio - Low Income Measure (LIM)	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	Prevalence_of_low_income_based_on_the_LowIncome_measure_after_tax	N/A	
12. Unemployment Rate	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	Unemployment_rate	N/A	
13. High Paying Jobs Index	Index from 0 to 1	Census, 2016	<a href="#">Census Profile 2016</a>	Single digit codes from: Employment Income Statistics (7), Occupation - National Occupational Classification (NOC) 2016 (193A), Work Activity During the Reference Year (9) and Sex (3) for the Population Aged 15 Years and Over in Private Households of Canada, Provinces and Territories and Census Metropolitan Areas, 2016 Census - 25% Sample Data	N/A	Proportion of high paid residents located from NOCs codes from Census and high paid job location extrapolated from TransLink commute data
14. Income Inequality Ratio	Ratio	Census, 2016	<a href="#">Census Profile 2016</a>	___In_the_eighth_decile; ___In_the_second_decile	Total_Economic_family_income_decile_group_for_the_population_in	
15. Expected Employment Growth	Percentage	Metro Vancouver Targets, 2016 and 2050	None	N/A	N/A	
16. Housing Cost Burden	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	__Spending_30percent_or_more_of_income_on_shelter_costs	Total_Owner_and_tenant_households_with_household_total_income__	
17. Housing Tenure - Renters 18. Housing Tenure - Owners	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	__Renter; __Owner	Total_Owner_and_tenant_households_with_household_total_income__	
19. Median Home Value	Dollar CAD	Census, 2016	<a href="#">Census Profile 2016</a>	__Median_value_of_dwellings_dollar__	N/A	
20. Housing Suitability (Overcrowding)	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	__Not_suitable	Total_Private_households_by_housing_suitability__25percent_samp	

21. Gentrification Score	Index from 0 to 1	Census 2016, Census 2006	<a href="#">Census Profile 2016</a>	<p>2016:</p> <p>Under \$10,000 (including loss)</p> <p>\$10,000 to \$19,999</p> <p>\$60,000 to \$69,999</p> <p>\$70,000 to \$79,999</p> <p>\$80,000 to \$89,999</p> <p>\$90,000 to \$99,999</p> <p>\$100,000 and over</p> <p>University certificate, diploma or degree at bachelor level or above</p> <p>Average household size</p> <p>Average monthly shelter costs for rented dwellings (\$)</p> <p>Median total income of households in 2015 (\$)</p> <p>2006:</p> <p>Average number of persons in private households</p> <p>Median household income \$</p> <p>Average gross rent \$</p> <p>Bachelor's degree</p> <p>University certificate or diploma above bachelor level</p> <p>Under \$1,000</p> <p>\$1,000 to \$2,999</p> <p>\$3,000 to \$4,999</p> <p>\$5,000 to \$6,999</p> <p>\$7,000 to \$9,999</p> <p>\$10,000 to \$11,999</p> <p>\$12,000 to \$14,999</p> <p>\$15,000 to \$19,999</p> <p>\$60,000 and over</p>	N/A	<a href="#">Census 2006</a>
22. Subsidized Housing	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	__percent_of_tenant_households_in_subsidized_housing_1	N/A	
23. Rate of Change - Demolitions by Replacement	Rate	Metro Vancouver, 2016 and 2050	None	N/A	N/A	
24. Rate of Change - Demolitions by Land Use Change	Rate	Metro Vancouver, 2016 and 2050	None	N/A	N/A	
25. No Post-Secondary Education	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	__No_certificate_diploma_or_degree_1; __Secondary_high_school_diploma_or_equivalency_certificate	Total__Highest_certificate_diploma_or_degree_for_the_population1	
26. Early Childhood Development - Language and Cognitive Development - Vulnerable Children	Percentage	Human Early Learning Partnership (UBC), 2017-2019	<a href="#">HELP EDI, Feb 2020</a>	PCTLANRI_7	N/A	
27. Early Childhood Development - Communication Skills - Vulnerable Children	Percentage	Human Early Learning Partnership (UBC), 2017-2019	<a href="#">HELP EDI, Feb 2020</a>	PCTCOMRI_7	N/A	
28. Access to Parks and Recreation Space	Hectares	Open Trip Planner, Province of BC Local Parks and Greenspaces	<a href="#">Parks</a>	N/A	N/A	
29. Urban Tree Canopy	Percentage	Metro Vancouver LiDAR 2014-2017	<a href="#">Tree Canopy</a>	N/A	N/A	
30. Access to Grocery Stores	Distance (km)	Food Flow Study, Dunn and Brad Street business data, 2018	None	N/A	N/A	Data provided by Metro Vancouver
31. Urban Heat Island	Degrees Celsius	USGS, August 2020	<a href="https://earthexplorer.usgs.gov/LANDSAT_C1_Analysis_Ready_Data_(US_Landsat_4-8_ARD)">https://earthexplorer.usgs.gov/LANDSAT_C1_Analysis_Ready_Data_(US_Landsat_4-8_ARD)</a>	N/A	N/A	File name: LC08_CU_003000_20200814_20200825_C01_V01_ST
32. Exposure to Flood Hazard	Percentage	Census 2016, Metro Vancouver	None	N/A	N/A	Data provided by Metro Vancouver
33. Relative Access to Transit	Index from 0 to 1	Statistics Canada Proximity Measures, 2020	<a href="#">Proximity Measure Database, April 2020</a>	prox_idx_transit	N/A	This raw measure is normalized 0 to 1 across Canada. It was re-normalized 0 to 1 across the region for this study
34. Average Commute Time	Minutes	Census 2016	<a href="#">Census Profile 2016</a>	__Less_than_15_minutes; __15_to_29_minutes; __30_to_44_minutes; __45_to_59_minutes; __60_minutes_and_over	Total__Commuting_duration_for_the_employed_labour_force_aged_15_	The centre point of each range was used in calculating the final overall average for this study.
35. Transportation Cost Burden	Percentage	Environics, 2020	None	caspendingfacts_hstr001s_a (2020 HHs Exp:Transportation: Average) caspendingfacts_hstt001_a (2020 HHs Exp:Tot Expenditure: Average)	Average transportation spend to total average household spend	ArcGIS Online (Geoenrichment)

36. Average Transportation Spend	Dollar	EnviroNics, 2020	None	caspendingfacts_hstr001s_a (2020 HHs Exp:Transportation:		ArcGIS Online (Geoenrichment)
37. Jobs Accessible Within 45 Minutes by Car	Count	Metro Vancouver Employment , Open Trip Planner	None	N/A		Data provided by Metro Vancouver
38. Jobs Accessible Within 45 Minutes by Transit	Count	Metro Vancouver Employment, Open Trip Planner	None	N/A		Data provided by Metro Vancouver
39. Ratio of Employment Access Within 45 Minutes: Transit/Car	Ratio	Metro Vancouver, Open Trip Planner	None	N/A		Data provided by Metro Vancouver
40. Voter Turnout 2017	Percentage	Province of BC Open Data 2017, Crown Corporations and Agencies - Elections BC	<a href="#">Elections BC, 2018</a>	PARTICIPATION, REGISTERED_VOTERS, AGE_GROUP, ED_ABBREVIATION	N/A	Voter turnout calculated by electoral district
41. Youth Voter Turnout 2017	Percentage	Province of BC Open Data 2017, Crown Corporations and Agencies - Elections BC	<a href="#">Elections BC, 2018</a>	PARTICIPATION, REGISTERED_VOTERS, AGE_GROUP, ED_ABBREVIATION	N/A	Voter turnout calculated by electoral district
42. Four or More Persons to Confide In	Percentage	My Health My Community, 2014	<a href="#">My Health My Community, 2014</a>	4+ people to confide in or turn to for help	N/A	
43. Strong Sense of Community Belonging	Percentage	My Health My Community, 2014	<a href="#">My Health My Community, 2014</a>	Strong sense of community belonging	N/A	
44. Long Term Residency (Mobility Status)	Percentage	Census, 2016	<a href="#">Census Profile 2016</a>	___Nonmovers	Total___Mobility_status_5_years_ago___25percent_sample_data	
45. Sense of Safety	Percentage	My Health My Community, 2014	<a href="#">My Health My Community, 2014</a>	Feel safe walking after dark	N/A	
46. Access to Primary Healthcare	Index from 0 to 1	Statistics Canada Proximity Measures, 2020	<a href="#">Proximity Measure Database, April 2020</a>	prox_idx_health	N/A	This raw measure is normalized 0 to 1 across Canada. It was re-normalized 0 to 1 across the region for this study
47. General Health	Percentage	My Health My Community, 2014	<a href="#">My Health My Community, 2014</a>	General health – excellent/very good	N/A	
48. Mental Health	Percentage	My Health My Community, 2014	<a href="#">My Health My Community, 2014</a>	Mental health – excellent/very good	N/A	
49. Chronic Conditions (1+)	Percentage	My Health My Community, 2014	<a href="#">My Health My Community, 2014</a>	One or more chronic conditions	N/A	



IV. Principal Component Analysis (PCA) Methodology

A PCA is a statistical process that helps to make sense of multiple potentially co-related variables. In general, principal component analysis is a very technical, mathematical function. For the most usefulness and readability, the results of the PCA were used to calculate an inequity index score - a single value to be used as a tool for focusing the eye to areas with multiple indicators overlapping independently and highlighting areas for deeper analysis.

The consultant team feels that PCA is the best method for producing an Inequity Index for the following key reasons:

- 1. There is no agreed-upon model for mapping intersecting social inequities and/or disparities at the regional level. As such, a new composite model cannot generally be completed without introducing subjectivity and value-based considerations for the indicators. As an example, it may be impossible to suggest that overcrowding is more or less of an equity/inequity concern than absence of green space without introducing individual bias;
- 2. To avoid introducing additional subjective bias as well as to avoid the prioritization of one target group over another, a data-agnostic approach such as PCA is preferred as it reduces the universe of indicators to a set that best describes the variations in the data without placing a value judgement on any one particular indicator; and
- 3. When many inequity concerns are cross-correlated, the PCA approach is designed to correct for correlation between indicators and reduces the set to the most valuable elements. This is crucial as it is important that we do not overload any one index with many closely related considerations.

Using PCA to calculate an inequity index is a more valuable technique than simply scaling and indexing the data. For example, an inequity index could have been created simply by scaling (standardizing) the values from each indicator to be equal to between 0-1, then adding the scores for each indicator. This would create a score that would simply indicate areas that had the most overlapping high scores (dark purple areas) between all maps. However, as many inequity variables are cross-correlated, this approach would not account for relationships between variables. The PCA approach is designed to account for correlation between indicators and reduces the set to the most valuable elements, or in other terms, the variables that account for the most variance (or disparity) are identified and statistically weighted in the final index score. This is crucial as it is important that we do not overload any one index with many closely related considerations.

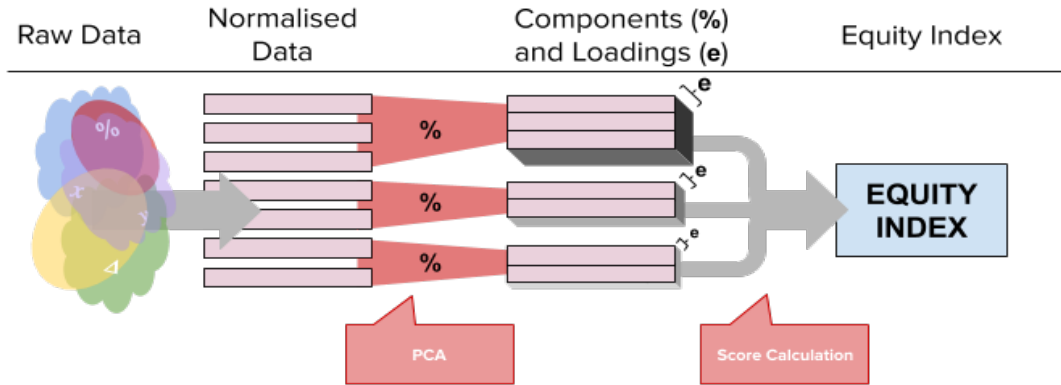
We ran a total of three PCAs, outlined in Table 2, with different themed variables and subsequently calculating three equity indices: an overall PCA with all forty-nine indicators, a demographics PCA to highlight areas that may have multiple equity-seeking populations, and a conditions PCA to highlight areas that may have multiple equity issues. The results are summarized and discussed in the body and tables of this appendix below.

Table 2. Principal component analyses performed for equity baseline project.

PCA	Equity Theme
A	All indicators
B	All condition-related indicators
C	All demographics/identity-related indicators

The workflow used for each inequity index is shown below. The first step in this process was to normalize raw data to a scale range of zero to one, as is necessary for PCA computation. This allows data variables that are of different measurements, such as percentages or dollar values, to be comparable. This was accomplished

using minimum-maximum normalization. In addition, data was reclassified so that the directionality of equity scoring was the same for all variables, where a higher value indicated greater equity concern.



**Figure A.** Workflow of Equity Index calculation. PCA is used to group normalised data and calculate component percentages (%) and loadings (e). Component percentages refer to similarity of variables to one another. Loadings refer to the weight of the component relative to other components in the score calculation process.

Once normalised, the data undergoes a PCA. Any normalised data that has missing values will have the missing values imputed as the average of the variable. The PCA outputs include (1) components, and (2) loadings. The components determine the similarity of variables, based on the variance of the data. This means variables that have similar effects on the variance and direction of variance, which is important as datasets that are statistically similar will not be overemphasized. The data is grouped in the PCA based on how much they contribute to each component. Loadings show the degree of correlation of each component. A component with a larger loading value means that the component heavily influenced the PCA and largely characterised the data. Components with small loading values will have had smaller influence in the PCA and therefore characterise the data less. The final step is to calculate the equity index from the identified component and loading values, as well as the component data in its raw form, as shown in Equation 1. This calculation involves first multiplying all raw data for each component by the respective component percentage. These multiples are then summed and multiplied by the component loading value. These steps are repeated for each variable grouping (or principle component). The outputs are then normalised and summed to result in an aggregate indexed value for each spatial unit (equation 2). The indexed value highlights areas with overlapping and more PCA-influential equity concerns.

$$(1) \quad PC_n = \Sigma(raw_v * contribution_v) * loading\ value$$

$$(2) \quad Equity\ Index = PC_n + PC_{n+1}$$

Where  $PC_n$  is the principal component for group  $n$ ;  $Raw_v$  is the raw data for variable  $v$ ;  $contribution_v$  is the contribution value for variable  $v$ ; and  $loading\ value$  is the loading value for the principal component.

## V. Inequity Baseline Indicator Descriptive Statistics

The following table is a summary of the main statistics for each indicator. The type of indicator is listed to show how the values should be understood. The percentage shown in the column “Percentage of MV Population in Most Affected TAZs” represents the percentage of the Metro Vancouver population within TAZs that measured in the bottom or top 10% of the measure, depending on which is considered the least equitable.

Table 10. Summary statistics for each indicator

Indicator	Type	Mean	Min.	Max.	Relative Standard Deviation (+/- relative to the mean)	Percentage of MV Population in Most Affected TAZs	Relative Ranking of Variance (of 48)
Visible Minority	Proportion	0.47	0	0.99	51%	12%	23
Indigenous Identity	Proportion	0.03	0	0.91	148%	8%	7
Seniors	Proportion	0.16	0	0.68	49%	8%	24
Children	Proportion	0.14	0	0.28	33%	12%	32
Single Parent Families	Proportion	0.15	0	0.43	35%	8%	31
Female-Headed Households	Proportion	0.12	0	0.43	39%	8%	29
Ethnic Diversity Index	Index	0.49	0.06	0.87	32%	10%	34
Median Age	Age	41.87	0	69.72	15%	8%	44
No Knowledge of Official Languages	Proportion	0.12	0.01	0.39	36%	11%	30
Median Household Income	Currency	79,987.07	0	188,198.53	29%	9%	35
Poverty Ratio - Low Income Measure (LIM)	Proportion	0.17	0	0.66	52%	10%	22
Unemployment Rate	Proportion	0.06	0	0.22	40%	8%	28
High Paying Jobs Index	Index	0.08	0.01	1	106%	3%	10
Income Inequality Ratio	Proportion	1.33	0.04	8.5	66%	10%	17
Expected Employment Growth	Proportion	0.52	-0.68	52.55	411%	11%	2
Housing Cost Burden	Proportion	0.31	0	0.74	33%	8%	33
Housing Tenure - Renters	Proportion	0.34	0	1.04	59%	9%	18
Median Home Value	Currency	964,260.25	0	3,959,019.41	67%	10%	16
Housing Suitability (Overcrowding)	Proportion	0.07	0	0.39	75%	12%	12
Gentrification Score	Index	0.27	0	1	55%	8%	20
Subsidized Housing	Proportion	0.07	0	0.83	184%	8%	5
Rate of Change - Demolitions by Replacement	Proportion	0.01	0	0.09	101%	9%	11
Rate of Change - Demolitions by Land Use Change	Proportion	0	0	1	1242%	9%	1
No Post-Secondary Education	Proportion	0.08	0	0.52	74%	11%	13
Early Childhood Development - Language and Cognitive Development - Vulnerable Children	Proportion	0.1	0.01	0.25	48%	8%	25
Early Childhood Development -	Proportion	0.16	0.04	0.33	40%	10%	27

Communication Skills -  
Vulnerable Children

Access to Parks and Recreation Space	Area	35.58	0	819.47	273%	6%	4
Urban Tree Canopy	Proportion	0.22	0	1	107%	8%	9
Access to Grocery Stores	Distance	1,707.39	55.57	16,150.99	68%	8%	14
Urban Heat Island	Temperature	30.69	29.46	31.44	1%	8%	49
Exposure to Flood Hazard	Proportion	0.1	0	1	279%	11%	3
Relative Access to Transit	Index	0.07	0	1	170%	5%	6
Average Commute Time	Time	25.7	15.31	33.67	9%	10%	46
Transportation Cost Burden	Proportion	0.11	0.06	0.27	21%	12%	40
Average Transportation Spend	Currency	14,175.22	0	74,565.21	43%	9%	26
Jobs Accessible Within 45 Minutes by Car	Count	21.26	1	29	24%	8%	39
Jobs Accessible Within 45 Minutes by Transit	Count	9.63	0	23	68%	2%	15
Ratio of Employment Access Within 45 Minutes: Transit/Car	Proportion	0.42	0	1	58%	8%	19
Voter Turnout 2017	Proportion	0.60	0.47	0.72	8%	9%	47
Youth Voter Turnout 2017	Proportion	0.58	0.5	0.66	6%	10%	48
Four or More Persons to Confide In	Proportion	0.45	0	0.61	18%	10%	41
Strong Sense of Community Belonging	Proportion	0.55	0.29	0.75	16%	9%	43
Long Term Residency (Mobility Status)	Proportion	0.55	0.05	0.88	25%	7%	36
Sense of Safety	Proportion	0.58	0.21	0.83	25%	9%	37
Access to Primary Healthcare	Index	0.08	0	1	144%	7%	8
General Health	Proportion	0.51	0.34	0.73	18%	10%	42
Mental Health	Proportion	0.58	0.4	0.8	12%	11%	45
Chronic Conditions (1+)	Proportion	0.27	0	0.43	24%	8%	38

## VI. Listening & Learning Session Detailed Agenda

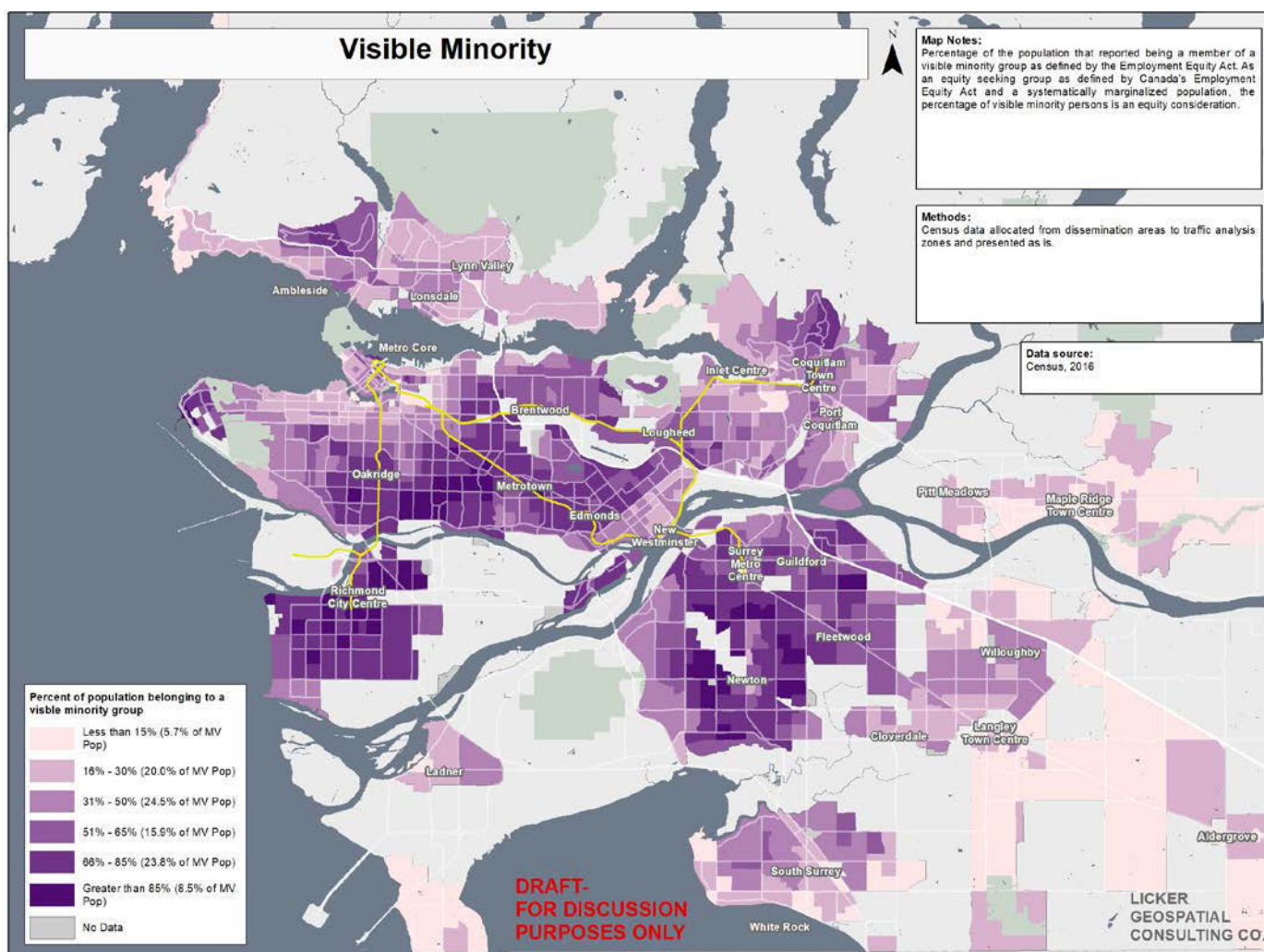
TITLE	DESCRIPTION
SESSION OPENS Grounding + Territorial Acknowledgment	Luna opens in Teochew (Ancestral Language)
INTRODUCTIONS	Share with us your name and the identities you lead with, as much as you want. Share with us where you are located at the moment. Describe your favourite food from your culture. Where do you go to get the food that most nourishes you?
SELF-CARE AND SAFER SPACE	Support each other's right to privacy and confidentiality. Move up, Move up Listening/Speaking Role It's ok to have Zoom awkwardness Take intentional breaths for hard and vulnerable moments It is ok to not feel ok. Reach out if needed. Water, snacks, comfort and grounding things around you Hold space with each other - Be present with each other
BODY AS STORY Reflection Tool	Participants given a writing prompt tool to reflect on questions asked.  "Before you start, take a deep breath for be still for 1 min. What sensations in your body are coming up for you? Note these sensations down. Example "I feel a sense of urgency and it's kind of making my back ache a little" After noting the sensation, take another deep breath, and another. Write down what might be coming up for you. Use describing words - "I see", "I feel", "I hear", "I experience"
SOCIAL EQUITY DISCUSSION Whole Group	Question 1: Social equity is a word that we are hearing a little more often. Organizations like MVRD and TL are also responding to this call to infuse social equity and transform their practices. If someone ask you what social equity really is to you, what might you express?
Breakout Group	Question 2: Where does inequity show up in your life in regards to where you live? i.e. your home, your neighbourhood, where you do your shopping, recreation, etc  Question 3: Where does inequity show up in how you get around? i.e. travel patterns, transit, mobility/connectivity, etc
Whole Group	Question 4: In your words, what would it feel like to live/work/learn/play/travel, etc. in a fair and equitable region?
BREAK	
SOCIAL INEQUITY INDEX DISCUSSIONS	Social Inequity Index maps Open group reflection
RECOMMENDATIONS & NEXT STEPS	Last comments, recommendations and next steps.
SESSION CLOSE	

## VII. Developing the Listening & Learning Engagement Sessions

### Priorities for Participant Selection

In recruiting participants to the Listening and Learning Sessions, the consultant team decided to prioritize recruitment of two identity groups that are generally the least likely to be heard or represented through planning processes: racialized people and those who identify as Lesbian, Gay, Bisexual, Trans, Queer, 2 Spirit (LGBTQ/2S). The intersectional nature of identity meant that engagement participants could also have identities related to other equity-denied groups (women, people with low income, people with disabilities etc.)

The decision to prioritize participants who self-identify as racialized as well as LGBTQ/2S within the engagement activities was informed by the context of Metro Vancouver as well as wider systemic issues. In the 2016 Census, the visible minority population (48.9%) of the Vancouver Census Metropolitan Area (CMA) exceeded the European Canadian population (48.6%) for the first time. Furthermore, the Aboriginal population of the region accounted for 2.5% of all residents. While the majority of residents living in Metro Vancouver belong to racialized communities, Census data reveals that racialized communities are not evenly distributed throughout the region.



Where racialized populations live in the region has significant implications for regional growth and transportation planning, from access to employment, leisure and natural areas, to walkability and proximity to rapid transit.

The legacy of colonization, both in the planning of Metro Vancouver and at all levels of Canadian society, coupled with systemic racism (e.g. racial wage gap, rental and job market discrimination) and increasing reports of racist violence in the region (verbal and physical incidents), makes it imperative that regional and transportation planning authorities prioritize engagement and relationship-building with racialized communities.

In addition, Canadian Census data on non-dominant gender and sexual identity are limited to regional level statistics on Same-Sex Households (Common-Law Relationships, Marriages, and Parents). This data gap, coupled with the disproportionate discrimination, homelessness, health impacts and violence experienced by self-identified LGBTQ2S populations, makes it important to prioritize engaging this population.



**VIII. High-Resolution Indicator Maps**

See following pages.

---

To: Regional Planning Committee

From: Erin Rennie, Senior Planner, Regional Planning and Housing Services  
Lucy Duso, Policy Coordinator, External Relations

Date: February 22, 2021 Meeting Date: March 5, 2021

Subject: ***Metro 2050 Phase 1 Engagement Report***

---

### **RECOMMENDATION**

That the MVRD Board receive for information the report dated February 22, 2021, titled “*Metro 2050 Phase 1 Engagement Report*”.

---

### **EXECUTIVE SUMMARY**

With direction from the MVRD Board in September 2019, the *Metro 2050* project team began implementing the *Metro 2050 Engagement Plan* in support of Phase 1 of the update to *Metro 2040*, the regional growth strategy. The focus of Phase 1 was to review *Metro 2040* by topic area and identify opportunities for improvement. Engagement has focused on the strategy’s signatories, non-signatories (aligned or impacted organizations), First Nations and the broader public.

Through public events that attracted 600 participants, newsletter audiences, social media promotions including engaging videos, 8000 visits to the web resources, 30,000 responses to a survey on values pertaining to regional growth, the reach of the engagement to date is about 120,000 people, and this is in addition to working directly with members and other signatories. The input received to date is being considered as staff prepare and refine the recommended policy directions and draft *Metro 2050* content. Engagement will continue through to the approvals phase.

### **PURPOSE**

The purpose of this report is to provide an update to the MVRD Board on the implementation of the *Metro 2050 Engagement Plan*. This report highlights engagement activities and input received to date.

### **BACKGROUND**

At its September, 2019 meeting, the MVRD Board approved the *Metro 2050 Engagement Plan*. This report provides an update on engagement activities and input received to date.

### **METRO 2050 ENGAGEMENT PROGRAM**

The *Metro 2050* project team has coordinated an engagement program that provides multiple opportunities and venues for input. The engagement plan focused on four audiences; the strategy’s signatories, non-signatories (aligned or impacted organizations), First Nations, and the broader public. Staff have reached out to each audience group for input, ideas, and wherever possible, ongoing dialogue and relationship-building. The *Metro 2050* project manager provides quarterly updates to the MVRD Board on the policy reviews and engagement, and this report features cumulative highlights from numerous activities now that Phase 1 of the work has come to a close.

### **Engagement Objectives**

The *Metro 2050* project team has delivered an engagement program that fulfills the commitments in the Board-approved *Metro 2050 Engagement Plan* (Reference 1). This engagement program aligns with Metro Vancouver's Public Engagement Policy, and meets the requirements specific to a regional growth strategy as set out in the *Local Government Act*. As a comprehensive update, the adoption of *Metro 2050* will require a Type 1 Major Amendment, needing acceptance from all affected local governments and triggering consultation requirements identified through Sections 434 and 450 of the *Local Government Act*; one of the requirements is the establishment of a *Metro 2050* Intergovernmental Advisory Committee which has been initiated, the members of which are listed in Attachment 1.

In July 2019, the MVRD Board directed staff to explore additional public engagement opportunities, and staff have been able to deliver additional public dialogue sessions, a public webinar and found opportunities to increase outreach in the Covid-19 induced virtual environment. An infographic highlighting public input is provided in Attachment 2.

The objectives of the engagement program are to:

- broaden audience and raise the profile of the regional growth strategy;
- build relationships about growth management planning with signatories, non-signatories and First Nations; and
- hear ideas on where to improve goals and strategies of the regional growth strategy.

### **Engagement Activity Summary**

To increase awareness and promote the opportunities to provide input into the development of *Metro 2050*, a variety of online tools were developed. These include a web-based *Metro 2050* information hub; social media content promoting public dialogues, webinars and a video series explaining the benefits of regional planning (References 2, 3 and 4); the online distribution of newsletters, and more direct updates to signatories, non-signatories, First Nations; and an in-house database of residents who have expressed interest in regional work. The result of these efforts was a broad reach within the region.

Staff organized many engagement events, in-person and online, to walk through the approach to updating the regional growth strategy, summarize the opportunities and challenges being considered, and to receive ideas and input on both the approach and content on the update. A list of these events and audience is provided in Attachment 3. Some of these events were open to the public while others were more targeted. This included invitation-only events and others in coordination with agencies working on aligned policies; for example, joint events with TransLink's *Transport 2050* (Regional Transportation Strategy) project.

Another layer of engagement undertaken was the policy-specific engagement on the 11 themed policy reviews associated with updating *Metro 2040* that involved engagement with impacted stakeholders. These were: Urban Centres and FTDA's, Agriculture, Rural, Industrial and Mixed Employment, Housing, Environment, Transportation, Complete Communities, Projections, Implementation, and Climate Change and Natural Hazards (Reference 5). For example, there was targeted engagement with the agriculture community on the Agriculture Policy Review. All of the

policy reviews included engagement with the Regional Planning Advisory Committee (including TransLink and adjacent regional districts), the Regional Planning Committee and Provincial staff.

This process also included four intensive policy-specific workshop-style meetings with Provincial staff from various ministries. Summaries of input gathered from this engagement has been provided to the Regional Planning Committee and MVRD Board in the reports on each of the respective policy reviews, as well as in the quarterly update staff reports on the policy reviews and engagement completed to date.

### **Integration with *Transport 2050***

The *Metro 2050* project team continues to work closely with TransLink's *Transport 2050* project team to ensure a strong integration of transportation and growth management planning; this includes alignment, where possible, of engagement and policy development work between the two entities. In the Summer of 2019, Metro Vancouver and TransLink partnered in a public opinion survey completed by over 31,000 residents. The survey asked residents about their values and their hopes and fears about the future of the region. The results showed that residents in the region place a high value in the region's natural areas, its efficient transportation, and its complete communities. Coordinated engagement between the two agencies also included cross-participation in webinars and stakeholder events like the RailVolution Regional Day in September 2019. Through these collaborative engagement events, residents indicated support for key concepts in the current regional growth strategy to be carried forward, in particular: protecting the environment; focusing growth in compact communities; strengthening the role of affordable housing; improving transit and reducing traffic congestion; and expanding actions on climate mitigation and adaptation. A report was provided to MVRD Board at its February 7, 2020 meeting summarizing the joint engagement with TransLink (Reference 6).

### **THE IMPACT OF COVID- 19 ON ENGAGEMENT**

The *Metro 2050 Engagement Plan* reflects a pre-Covid-19 world, where public engagement was planned to be in-person and discussions to take place around tables. By the end of March 2020, the engagement plan moved to a completely virtual environment through online meetings and the distribution of documents primarily via e-mail and the web. While limiting engagement in some ways, the pandemic also enabled greater access to engagement in others. For example, over 500 people registered for the Spring 2020 public webinar. The move to online enabled many residents to participate in new ways.

### **Social Inequities**

Covid-19 has also made apparent to more people what was already obvious and experienced by some: i.e. the inequality in the social fabric of our communities, including, but not limited to disparity in access to education and economic opportunities. The rapid increase in public interest on issues of social equity, diversity and inclusion has raised some questions in relation to the goals and principles of regional planning. During the development of the *Metro 2040* policy reviews, it was determined that climate action, resiliency, and equity were important considerations that needed more attention, but this has been magnified over the past year.

The MVRD Board received a report at its May 1, 2020 meeting that provided a proposed approach to better incorporate the considerations of social equity in the development of *Metro 2050* (Reference

7). The *Social Equity and Regional Growth Management Study* has been underway since the Summer of 2020. The Study was scoped to inform *Metro 2050* and included stakeholder engagement activities, focused specifically on hearing stories and perspectives of social equity context experts (i.e. people with lived experience of inequity). The results of the Study will be reported out separately.

### **HIGHLIGHTS FROM PHASE 1 ENGAGEMENT**

Input received to date as part of the *Metro 2050 Phase 1 Engagement Program* is summarized below with the exception of the input received as part of the *Metro 2040* policy reviews, which has already been reported out. Input received was complex and varied, however some of the major themes from Phase I engagement include:

- the need to incorporate an equity, diversity and inclusion analysis to align with public concern and discourse and ensure equity is embedded in policies;
- an interest in how Reconciliation with Indigenous peoples can be furthered through regional planning;
- strong support for the Urban Containment Boundary, the Agricultural Land Reserve, and transit-oriented development;
- the need to expand transit service and active transportation options, and reduce traffic congestion;
- the need to more strongly link affordable housing and transit location;
- address housing affordability and involuntary displacement (gentrification) concerns;
- a strong desire to protect the natural environment and expand greenspaces in urban areas;
- there is support needed for local business including improving employee access to transit and relieving traffic congestion on goods movement corridors;
- the importance of ensuring there are adequate resources, services, and spaces for future generations;
- interest in how the Covid-19 pandemic will impact the region's growth projections, travel patterns, commercial space needs, and housing development patterns;
- the importance of promoting a healthy built environment; and
- support for addressing the impacts of climate change.

The general public provided input through an online comment form, the *Metro 2050* Dialogue Series, and the Spring 2020 Webinar. A selection of the input received at these events is listed below.

*Online Comment Form:* Since December 2019, an online comment form has been available to members of the public on the *Metro 2050* webpage (Reference 2). To date, 51 forms have been submitted. In general, this feedback indicated that respondents are:

- largely interested in the environment, climate and sustainability;
- generally supportive of the ideas and directions of the regional growth strategy;
- interested in more car-free development and rental housing allocation; as well as more general approaches such the value of collaboration and standardization across the Province;
- providing creative ideas, including: a suggestion to not only protect but expand the Agricultural Land Reserve; to consider how the shift to work-from-home might impact office

space demand; consider the need to provide a global context in presenting a localized growth plan; and that the plan should involve a collaboration with large employers and land owners.

**Metro 2050 Dialogue Events:** Through a pre-Covid 19 in-person public dialogue series, staff again largely heard support for the approach and strategies in the regional growth strategy. Question and comment segments were robust and lively and included ideas such as:

- complete communities should allocate space for children, similar to allocating space for parking or office space. This space should include greenspace, safe walking routes and access to recreation. In addition, the need for childcare was frequently mentioned.
- build walkable communities for people without cars;
- include a metric for greenspace;
- assess equity in relation to green space, housing, transportation and history and heritage;
- the strong need to better connect affordable housing and transportation;
- the need to protect employment and industrial lands and support for transit-oriented jobs;
- bring financial institutions into the approach to affordable housing;
- interest in how Reconciliation will be considered as part of the plan development process; and
- working more with adjacent regional districts.

**Spring 2020 Webinar:** The public webinar hosted on June 17, 2020, attracted a large audience with over 290 participants. Most of the comments echo the input already shared but some relatively new comments included:

- accountability for housing targets;
- apply the regional growth strategy as tool for a low-carbon economy; and,
- consider more mixed-use and transit-access in industrial areas.

### **Engagement with First Nations**

Engagement with First Nations has been a distinct stream of the Metro 2050 Engagement Plan with activities focused primarily on notification letters and the offer of one-on-one meetings. To date the project team has met with staff from the Musqueam Indian Band, Matsqui First Nation, Tsawwassen First Nation, and Kwantlen First Nation. Each conversation has reflected the unique circumstances, resourcing constraints and interests of each First Nation, but some common themes emerged including:

- strong expressed interest in participating in the *Metro 2050* process, but noting the need for capacity funding and support for First Nations to meaningfully and effectively engage on this and other initiatives;
- interest in compact communities, the need for better transportation choices, protection of greenspace, and the importance of planning for growth and development;
- concerns about climate change and environmental protection;
- noting a lack of transit, walking, and cycling connections to, from, and between reserve communities;
- the need for affordable housing options;

- some First Nation communities are surrounded by agriculture lands, but lack access to locally grown food;
- economic development and access to regional liquid waste services;
- gaining access to traditional resources on public lands (e.g. specific herbs or trees); and
- health and environmental impacts from marine and river pollution, including the impact on fisheries.

The MVRD Board received a report at its September 11, 2020, meeting on this early engagement (Reference 8). Staff continue to connect with First Nations regarding the development of *Metro 2050* including through the *Metro 2050* Intergovernmental Advisory Committee.

First Nations with reserve lands inside Metro Vancouver borders have been invited to send staff representation to the Intergovernmental Advisory Committee. At its February 19, 2021 meeting, the *Metro 2050* IAC benefited from representation of several First Nations. This resulted in a conversation where Committee members expressed a need for improved engagement with First Nations on the update to the regional growth strategy along with opportunities to engage more broadly on local and regional planning matters related to land use, transportation and infrastructure.

First Nations' representatives again expressed the need for a more inclusive process that recognizes the capacity constraints that many First Nations in the region are facing, particularly in the face of significant planning processes and projects that have significant and lasting impacts on traditional territories, Reserve and other held lands. Other *Metro 2050* IAC members recommended that staff consider how to amend the *Metro 2050* process, including consideration of an amended timeline to enable more fulsome engagement and conversations with First Nations.

### **Applying the Input**

The *Metro 2050* engagement activities demonstrate that there is widespread support for the general goals, strategies and directions in *Metro 2040*. However, engagement with the public and targeted audiences has confirmed the need for an update. Engagement to date has raised a number of issues and opportunities to improve the regional growth strategy including a new emphasis on housing issues, a concern about the impacts of climate change, concerns about cumulative environmental impacts, a desire for better transportation options, and a deep concern about ensuring that future generations have the resources, the services, and the spaces they will need to thrive.

Input received to date is being incorporated into the development of *Metro 2050* including new and revised content related to climate action and social equity. Affordable housing, childcare and protecting the environment are also clearly top of mind with the region's residents and will be addressed in *Metro 2050* through, for example, adding clarity on affordable housing policies and incorporating ecosystem mapping and revised greenhouse gas emission targets. The close coordination between transportation and growth management, another common area of interest, will be strengthened and reflect some of the ideas heard in the engagement.

Staff are exploring options to respond to the *Metro 2050* IAC member and First Nation representatives' requests, and will report back at the April 2021 Regional Planning Committee meeting.



### **Engagement Next Steps**

While the greatest opportunity to provide new ideas to improve the regional growth strategy was in Phase 1, the *Metro 2050* team is continuously open to input and different perspectives. At the time of writing of this report, the *Metro 2050* work plan is in Phase 2 (Plan Development) where the main tasks are to write new and amended draft *Metro 2050* content and circulate for formal comment. As policy language is written and revised through the Spring of 2021, the project team will be meeting regularly with the member of the *Metro 2050* Intergovernmental Advisory Committee, and policy-specific stakeholders. A second public webinar is planned for the Fall of 2021 once a complete draft of *Metro 2050* is available, and smaller virtual public forums have been offered to all signatories in alignment with local council meetings where *Metro 2050* is on the agenda.

In Phase 3 (January – July 2022) Metro Vancouver will consider readings on the *Metro 2050* bylaw, hold a public hearing, conduct a 3-month period of council acceptance meetings, and finally consider adoption of *Metro 2050*, targeting July of 2022.

### **ALTERNATIVES**

This is an information report. No alternatives are presented.

### **FINANCIAL IMPLICATIONS**

The engagement activities to support the development of *Metro 2050* can be accommodated within the Board-approved Regional Planning budget. There are no financial implications.

### **CONCLUSION**

The *Metro 2050* engagement program to date has been successful. The project team has reached a broad audience, confirming that the goals of the regional growth strategy continue to align with the goals of the region's residents, specifically: protecting greenspace and agriculture lands; addressing growth and transportation planning cohesively; the desire for complete communities, acknowledging the vision of 'complete' differs for different people; and addressing concerns regarding the impacts of climate change.

Staff continue to build relationships with audiences and continue to communicate directly with the stakeholders identified in the *Metro 2050 Engagement Plan* including:

- liaising closely with Translink's *Transport 2050* team;
- growing relationships with First Nations;
- thorough conversations with member jurisdictions and provincial representatives; and
- broad outreach to residents.

With the disruptions and illuminations presented by the Covid-19 pandemic, staff have been pushed to more deeply consider the connection between growth management and social equity, diversity and inclusion, and to consider these impacts in light of the principles of regional planning. As of January 2021, the engagement program has moved to Phase 2 and drafting new content in close collaboration with the *Metro 2050* Intergovernmental Advisory Committee is well underway.

**Attachments** (43717496)

1. Regional Planning Intergovernmental Advisory Committee Membership
2. Metro 2050 Update Participation Highlights
3. Metro 2050 Phase 1 Engagement (April 2019 – January 2021)

**References**

1. [Metro 2050 Engagement Plan, August 15, 2019](#)
2. [Benefits of Regional Planning Video Campaign](#)
3. [Video Featuring Public Dialogue](#)
4. [Metro 2050 Engagement website](#)
6. [Results of the Regional Stakeholder Workshop and \*Transport 2050\* Phase 1 Engagement Survey and Key Findings for \*Metro 2050\*, Regional Planning Committee Report, February 7, 2020](#)
7. [Social Equity in Regional Growth Management Phase 2 Study – Project Initiation, Regional Planning Committee Report, May 1, 2020](#)
8. [Engaging and Recognizing First Nations in \*Metro 2050\*, Regional Planning Committee Report, September 2020](#)

43583265

## Metro 2050 Intergovernmental Advisory Committee Members

As of February 4, 2021

<b>ORGANIZATION (Signatory)</b>
Village of Anmore
Village of Belcarra
City of Burnaby
City of Coquitlam
City of Delta
City of Langley
Township of Langley
Village of Lions Bay
City of Maple Ridge
City of New Westminster
City of North Vancouver
City of Pitt Meadows
District of North Vancouver
City of Port Coquitlam
City of Port Moody
City of Richmond
City of Surrey
Tsawwassen First Nation
City of Vancouver
City of White Rock
District of West Vancouver
Metro Vancouver
Squamish-Lillooet Regional District
Fraser Valley Regional District
TransLink
<b>ORGANIZATION (Non-Signatory)</b>
City of Abbotsford
Bowen Island Municipality
City of Chilliwack
District of Mission
District of Squamish
Ministry of Environment
Ministry of Municipal Affairs and Housing
University Endowment Lands
University of British Columbia (UBC)

<b>ORGANIZATION (First Nation)</b>
Katzie First Nation
Kwantlen First Nation
Kwikwetlam First Nation
Matsqui First Nation
Musqueam First Nation
Semiahmoo First Nation
Squamish Nation
Tsleil-Waututh Nation
<b>ORGANIZATION (Non-Signatory)</b>
Agricultural Land Commission
BC Housing Management Commission
BC Hydro
CMHC
Environment Canada
Fortis BC
Fraser Health Authority
Integrated Partnership for Regional Emergency Management
Kwantlen Polytechnic University
Simon Fraser University
Port of Vancouver
Transport Canada
Vancouver Coastal Health Authority
Vancouver International Airport Authority (YVR)

# METRO 2050 Update Participation Highlights

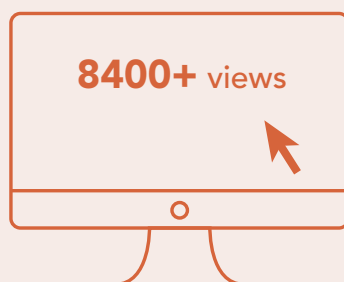
## Six newsletter articles

Regional Planning Bulletin | Chair's Update | Metro Vancouver Update



**5500+** public  
**150+** elected  
**700+** stakeholders

## METRO 2050 webpage



**51** online feedback forms



## Registration

**290** METRO 2050 webinar participants

**300+** METRO 2050 Dialogue Series

Vancouver | Fraser-South/ Surrey  
North Shore | Tri-Cities

**20+** policy-based stakeholder workshops

**10** presentations  
to Municipal Councils

**4** meetings  
with individual First Nations



Metro Vancouver Regional District



## Social Media promotion

METRO 2050  
Sustainability Dialogues  
reached **53,000** residents

METRO 2050  
Webinar  
reached **33,000** residents

Benefits of Planning videos  
viewed **800**



Joint online survey with  
Translink's Transport 2050  
**31,000+** responses.



**4** METRO 2050  
videos circulated

**Metro 2050 Phase 1 Engagement (April 2019 - January 2021)***Summary of Activity by Audience Group (non-exhaustive)*

<b>Audience</b>	<b>Engagement Activity</b>	<b>Timing</b>
<b>Signatories</b>		
Intergovernmental Advisory Committee (IAC)	Presentations with Q&A Sessions	January 17, 2020 January 22, 2021
Council of Councils	Presentations with Q&A Session	Ongoing
Regional Planning Committee	Presentations with Q&A Sessions	Monthly, Ongoing
Regional Administrators Advisory Committee (RAAC)	Presentations with Q&A Sessions	Ongoing
Regional Planning Advisory Committee (RPAC)	Presentations with Q&A Sessions	Monthly, Ongoing
RPAC – Social Issues Subcommittee	Presentations with Q&A Sessions	Quarterly, Ongoing
RPAC – Environment Subcommittee	Presentations with Q&A Sessions	Ongoing
Regional Engineers Advisory Committee (REAC)	Presentations with Q&A Sessions	September 13, 2019, October 9, 2020
Regional Transportation Advisory Committee (RTAC)	Presentation with Q&A Session	November 12, 2020
TransLink	Workshops and meetings on: <ul style="list-style-type: none"> <li>• Major Transit Network alignment</li> <li>• Urban Centres, FTDAs, and the Major Transit Growth Corridor</li> <li>• Social Equity Study</li> <li>• Resiliency Study</li> <li>• GHG modelling</li> <li>• Other topics of shared interest</li> <li>• Integration of T2050 and M2050</li> </ul>	Ongoing dialogue and frequent meetings
Agricultural Advisory Committee (AAC)	Presentation with Q&A Session	September 27, 2019
Regional Economic Prosperity Advisory Committee	Presentation with Q&A Session	February 20, 2020
City of Delta	Presentation to Council with Q&A Session	November 4, 2019
City of North Vancouver	Presentation to Council with Q&A Session	November 18, 2019
City of White Rock	Presentation to Council with Q&A Session	December 2, 2019
City of New Westminster	Presentation to Council with Q&A Session	January 27, 2020
District of North Vancouver	Presentation to Council with Q&A Session	February 3, 2020
City of Surrey	Presentation to Council with Q&A Session	February 10, 2020
City of Maple Ridge	Presentation to Council with Q&A Session	November 3, 2020
Tsawwassen First Nation	Presentation to Council with Q&A Session	February 4, 2020
Village of Lions Bay	Presentation to Council with Q&A Session	December 15, 2020
City of Burnaby	Presentation to Council with Q&A Session	February 8, 2021
Staff from all Member Jurisdictions	“Roadshow” Meetings on Projections - Population, Employment, Housing	September 2020 to January 2021
Fraser Valley Regional District	Staff to Staff Meetings	July 8, 2019 September 24, 2020 February 3, 2021

Audience	Engagement Activity	Timing
Squamish-Lillooet Regional District	Staff to Staff Meetings	July 31, 2019 April 7, 2020
Specialist staff from member jurisdictions	Policy review forums and workshops	Ongoing
<b>Non-Signatory Regional Stakeholders</b>		
Metro Vancouver Regional Parks	Internal department meeting with discussion	June 1, 2020
Metro Vancouver Air Quality & Climate Change	Internal department meeting with discussion	August 10, 2020
Metro Vancouver Liquid Waste Services and Water Services	Internal joint department meeting with discussion	June 16, 2020
Provincial staff (various ministries represented)	Presentations with Q&A sessions	October 29, 2019, August 12, 26, September 16, December 3, 2020
Vancouver Coastal Health	Staff to Staff Meeting	September 6, 2019
Fraser Health and Vancouver Coastal Health Authorities	Staff to Staff meeting with Q&A Session, and also ongoing via RPAC Associate and RPAC-SIS meetings.	February 21, 2020
Agricultural Land Commission	Staff to Staff meeting with Q&A Session	August 27, 2020
IPREM	Staff to Staff meeting with Q&A Session	July 20, 2020
Vancouver Airport Authority (YVR)	Staff to Staff meeting with Q&A Session	March 3, 2020
Port of Vancouver / Vancouver Fraser Port Authority	Staff to Staff meetings with Q&A Sessions	March 11 and July 22, 2020
Fraser Basin Council	Phone Meeting	February 1, 2020
Surrey Board of Trade	Presentation to Board with Q&A Session	November 14, 2019
Greater Vancouver Board of Trade	Presentation to Board with Q&A Session	November 15, 2019
Urban Development Institute (UDI)	Presentations with Q&A Sessions	March 10 and July 23, 2020
Joint Urban Freight Council and Gateway Council	Presentation with Q&A Session	October 3, 2019
Greater Vancouver Urban Freight Council	Presentation with Q&A Session	February 21, 2020
Gateway Transportation Collaboration Forum (GTCF)	Presentation with Q&A Session	December 15, 2020
Sunshine Coast Regional District	Staff meeting with Q&A Session	November 26, 2019
RailVolution Regional Forum	Conference presentation with Q&A Session	September 2019
UBC School of Community and Regional Planning Students	Presentation with Q&A Session	October 31, 2019
<b>Non-Signatory First Nations</b>		
Musqueam Indian Band	Meetings with Q&A Sessions	April 9, 2019, September 8, 2020
Matsqui First Nation	Meeting with Q&A Session	February 28, 2020
Kwantlen First Nation	Meeting with Q&A Session	May 1, 2020
<b>General Public</b>		

<b>Audience</b>	<b>Engagement Activity</b>	<b>Timing</b>
North Vancouver	<i>Metro 2050</i> Public Dialogues with Q&A	February 12, 2020
Vancouver	<i>Metro 2050</i> Public Dialogues with Q&A	February 20, 2020
Surrey	<i>Metro 2050</i> Public Dialogues with Q&A	February 25, 2020
Coquitlam	<i>Metro 2050</i> Public Dialogues with Q&A	February 27, 2020
Regional residents, signatory stakeholders	Newsletters – Regional Planning Bulletin, Chair’s Update, and Metro Vancouver Update	Ongoing
Regional residents, signatory stakeholders	Social Media – information and promotion of feedback form	Ongoing
Regional residents	TransLink’s <i>Transport 2050</i> survey	May to Sept. 2019
Regional residents	TransLink’s <i>Transport 2050</i> related report	December 2019
Regional residents	<i>Metro 2050</i> Webinar with Q&A	June 17, 2020
Regional residents	Regional Planning Videos / Social Media	December 14, 2020
Regional residents	<i>Metro 2050</i> Online Comment Form	January 2019 to July 2020





---

To: MVRD Board of Directors

From: Mayors Committee

Date: March 11, 2021

Meeting Date: March 26, 2021

Subject: **Vancouver Police Department's Mental Health Program**

---

**MAYORS COMMITTEE RECOMMENDATION**

That the MVRD Board write a letter to the Province and the Special Committee on Reforming the Police Act requesting increased regional access to mental health services to partner and support police in all Metro Vancouver communities.

---

At its March 5, 2021 meeting, the Mayors Committee received a presentation from Fiona Wilson, Superintendent, and A.J. Benefield, Police Sergeant, Vancouver Police Department (VPD), and considered the attached presentation titled "Vancouver Police Department Mental Health Unit", dated March 5, 2021.

The Committee discussed challenges facing Metro Vancouver communities from individuals struggling with mental health issues and associated impacts on police services. Members recognized limitations for local jurisdictions and the need to advocate for provincial funding to improve community-based mental health programs across Metro Vancouver. The Committee subsequently passed the recommendation as presented above.

This matter is now before the Board for its consideration.

**Attachment**

Presentation titled "Vancouver Police Department Mental Health Unit", dated March 5, 2021

## ATTACHMENT

## Vancouver Police Department Mental Health Unit

### What We Do, Who We Are, How We Can Help



### BACKGROUND

Partnership of VPD with VCH and Providence Health Care to better coordinate and as a result, improve quality of life for people living with mental illness.



A commitment to work together to assist mutual clients who suffer from mental illness and problematic substance use and addiction.

**"...will maximize any and all efforts to provide cooperative care, response and service for some of Vancouver's most vulnerable citizens."**



## Police Calls for Service Involving People Who Are Mentally Ill

	MHF YES GOs (Ops)	MHF NO GOs (Ops)	Total Yes+No	% Yes
<b>2016</b>	12556	60444	73000	17.20%
<b>2017</b>	12732	62074	74806	17.02%
<b>2018</b>	12102	62602	74704	16.20%
<b>2019</b>	11952	61780	73732	16.21%
<b>2020</b>	11104	53832	64936	17.10%



## Car 87

A partnership between Vancouver Police Department and Vancouver Coastal Health.

The Car 87/88 team includes plain-clothed constables from VPD MHU and nurses from VCH Mental Health team.

Collaborate to provide follow up resources to patrol and VCH, respond to crises/assist with information sharing.

This collaboration is believed to reduce admissions to the hospital, keep people in the community and provide support to those making referrals.


**\*\*LEAST INTRUSIVE RESOLUTION – HEALTH BASED APPROACH\*\***




**Car 87**

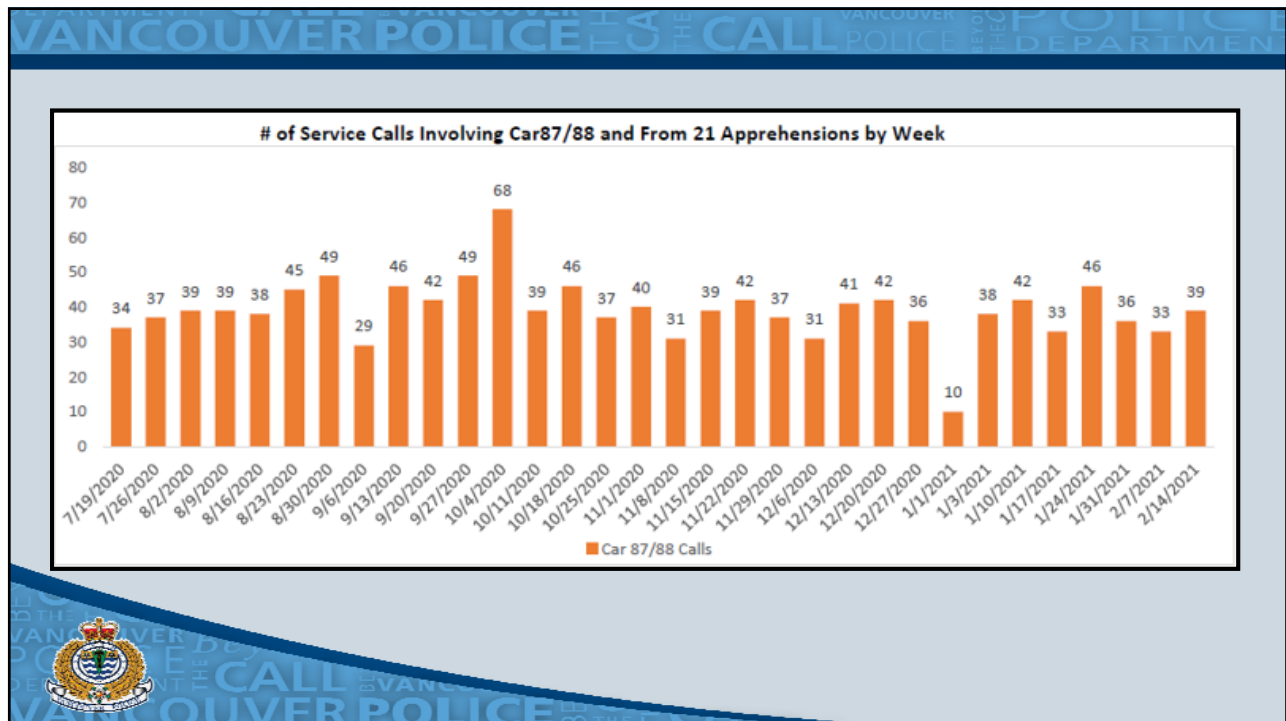
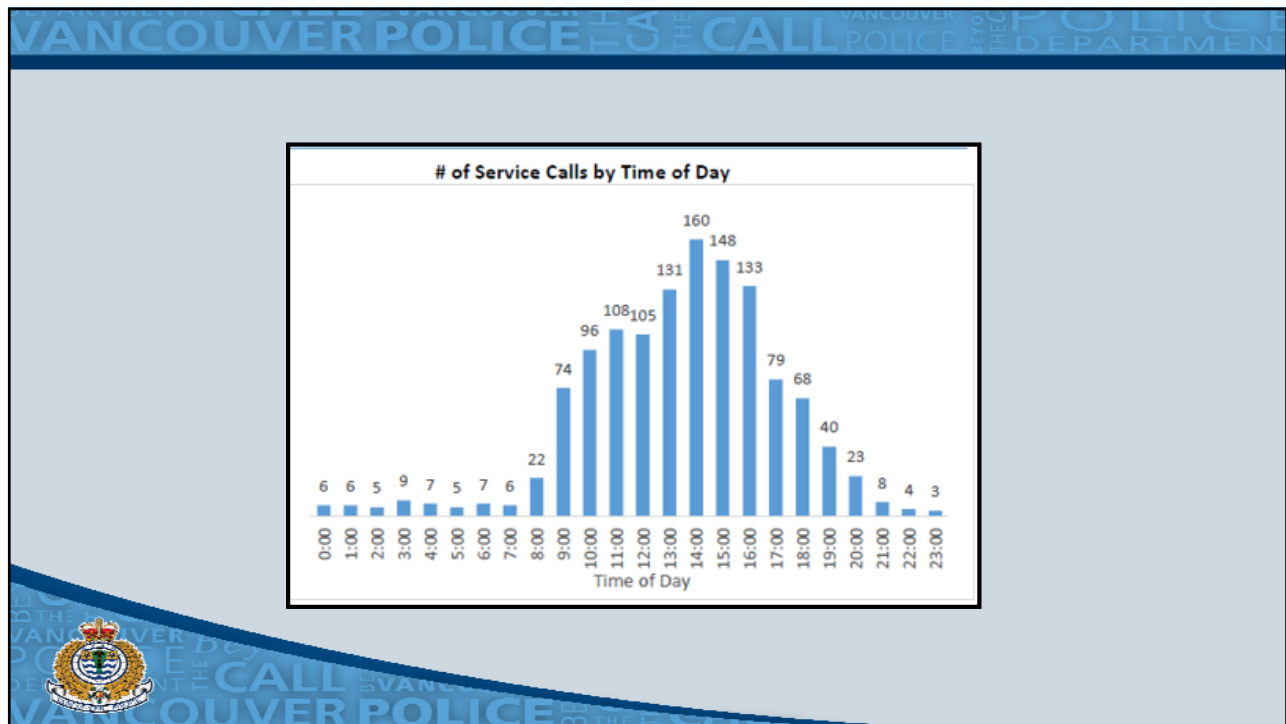
Intervention responses may include, but are not limited to:

- Phone assessments
- Outreach, assessment and support
- Administration of medications
- Referral and connection to additional community and health supports/services
- Apprehensions under the Mental Health Act
- Assisting VPD patrol officers and/or other units with incidents.




**EARLY INTERVENTION DURING A CRISIS  
OFTEN REDUCES UNNECESSARY ADMISSION  
TO HOSPITAL AND CAN LEAD TO BETTER  
HEALTH OUTCOMES FOR PATIENTS, CLIENTS  
AND THEIR COMMUNITIES.**







## HOURS OF OPERATION


- Car 87/88 is deployed seven days a week (4 shifts on, 4 shift off) on a shifting pattern that covers both day shift and afternoon shift.
- Car 87 (dayshift): 07:00 hours to 18:15 hours.
- Car 88 (afternoon shift): 12:00 hours to 23:15 hours.
- As of July 2020, Car 87/88 is co-located at the AOT office, which is located at 865 West 10th Avenue, across from the entrance to Emergency at VGH.



## CAR 87/88 VEHICLES




Unmarked SUV with a transportation compartment.




**ACT and AOT**

In addition to Car 87, which was established in 1978, Project LINK led to the formation of the VPD MHU and resulted in the formation of the Assertive Community Treatment (ACT) teams and the Assertive Outreach Team (AOT).



**ACT: Assertive Community Treatment**

- Began in 2011 by VCH and grew to include VPD
- Teams consist of social workers, nurses, psychiatric nurses, peer support members, vocational therapists, psychiatrists
- 2 full time plain clothes officers working day shift 4/4 rotation – 7 days a week. Officer meets team at location when required
- Prepare client for a successful transfer to a step down community service








	ACT 1			ACT 2			ACT 3 VAN			ACT 4			ACT 5		
	Pre	Post	Current	Pre	Post	Current	Pre	Post	Current	Pre	Post	Current	Pre	Post	Current
<b>Negative Police Contacts</b>	728	-8%	-27%	566	-36%	-64%	237	-17%	-50%	714	-21%	-55%	543	-16%	-69%
<b>Form 4, 21 and Section 28</b>	245	-45%	-53%	249	-40%	-81%	64	-41%	-59%	242	-43%	-61%	184	-33%	-72%
<b>Violent Offences</b>	88	-3%	-48%	43	-51%	-49%	20	-25%	-35%	54	-30%	-63%	35	0%	-49%
<b>Street Disorders</b>	129	42%	-32%	96	-47%	-65%	37	11%	-46%	112	-5%	-54%	101	-40%	-80%
<b>Victim of Violent Offences</b>	21	10%	24%	26	-35%	-73%	10	-70%	-70%	9	11%	67%	5	40%	0%
<b>Criminal Justice Involvements</b>	204	1%	-19%	86	-31%	-40%	99	-9%	-67%	166	-16%	-54%	138	1%	-72%

## ASSERTIVE OUTREACH TEAM (AOT)

- Created in March 2014.
- Collaboration between VPD, VCH and Providence Health Care.
- 4 full time plain clothes officers working 2 shifts – AM and PM.
- Police officer partnered with team of health care professionals including psychiatric nurses, clinical supervisors and psychiatrists.

## Who qualifies to be an AOT client?



## Outcomes

	AOT			VISU		
	Pre	Post	Current	Pre	Post	Current
<b>Negative Police Contacts</b>	205	-40%	-68%	1205	-35%	-56%
<b>Form 4, 21 and Section 28</b>	63	-29%	-81%	91	-19%	-42%
<b>Violent Offences</b>	24	-79%	-79%	81	-31%	-62%
<b>Street Disorders</b>	43	-65%	-74%	205	-56%	-70%
<b>Victim of Violent Offences</b>	5	-100%	-80%	13	0%	-15%
<b>Criminal Justice Involvements</b>	64	-52%	-66%	508	-33%	-60%



VANCOUVER POLICE THE CALL POLICE DEPARTMENT

## Our Members



CAR 87 Team




ACT Team

VANCOUVER POLICE THE CALL POLICE DEPARTMENT


VANCOUVER POLICE THE CALL POLICE DEPARTMENT

## Plain clothes

Less stigma utilizing unmarked cars and officers in civilian clothing



VCH AOT STAFF



AOT

VANCOUVER POLICE THE CALL POLICE DEPARTMENT



---

To: Regional Parks Committee

From: Jamie Vala, Division Manager, Planning and Resource Management, Regional Parks

Date: February 11, 2021 Meeting Date: March 10, 2021

Subject: **Regional Parks Plan Update**

---

**RECOMMENDATION**

That the MVRD Board authorize staff to proceed with phase 1 of the *Regional Parks Plan* update as presented in the report dated February 11, 2021, titled “Regional Parks Plan Update”.

---

**EXECUTIVE SUMMARY**

Metro Vancouver is undertaking an update of the *Regional Parks Plan* which describes the strategic vision for Regional Parks. The update will confirm Regional Parks’ existing ‘protect and connect’ mandate and ensure the plan addresses the key issues of climate change, social equity, and human health and wellness. The updated plan will guide delivery of the Regional Parks Service in a growing region for the next 30 years and provide a 10-year implementation plan and updated performance metrics.

Input from member jurisdictions, other government agencies, First Nations, stakeholders, subject matter experts and the public is important to the completion of the Regional Parks Plan update. Staff is seeking MVRD Board authorization to proceed with phase 1 of the project which will focus on research and early engagement during 2021.

**PURPOSE**

To provide the Regional Parks Committee and MVRD Board with background on the preparation of the *Regional Parks Plan* update and to seek authorization to proceed with phase 1 of the project focused on research and early engagement.

**BACKGROUND**

At its January 20, 2021 meeting, the Regional Parks Committee endorsed the *Regional Parks Committee 2021 Work Plan*. The work plan identified the update of the *Regional Parks Plan* as a key priority for the year. As per Metro Vancouver’s Public Engagement Policy, staff are now seeking authorization to initiate phase 1 of the Regional Parks Plan update.

**REGIONAL PARKS PLAN**

Adopted by the Metro Vancouver Regional District Board in 2016, the *Regional Parks Plan* describes the long term strategic vision for the Regional Parks Service. The plan clarified Regional Parks’ protect and connect mandate. Since that time, the *Regional Parks Plan* guided the development of key strategies and frameworks such as the *Regional Parks Land Acquisition 2050* strategy, the *Regional Parks Public Programming Strategy*, and the *Regional Parks Natural Resource Management Framework* as well as the development of important new facilities for connecting people to nature

such as the Sheep Paddocks Trail in Colony Farm Regional Park and the nature discovery area at Aldergrove Regional Park.

### **REGIONAL PARKS PLAN UPDATE**

The planning update process includes research and analysis, early engagement, plan development, Committee review, broad engagement of the draft plan, and MVRD Board adoption. It is divided into two phases, with the first focused on research, early engagement, and developing a draft plan and the second focused on broad engagement of the draft plan.

#### **Regional Parks Plan Update Phase 1**

Phase 1 will take place in 2021. It will be investigative in nature and focused on exploring the key issues of climate change, social equity, and human health and wellness with subject matter experts using a variety of tools from best practice research to meetings or workshops. A public opinion survey will be employed to explore key themes along with public values relating to regional parks. Early engagement will take place with municipal jurisdictions through the regional advisory committees. A project website will be set up to inform the public and stakeholders and to provide an opportunity for early feedback.

Concurrently, a process to engage with First Nations will be undertaken. Metro Vancouver will share relevant information on the plan update with First Nations and engage in an appropriate and respectful manner with those First Nations that indicate an interest in obtaining more information and providing feedback on the plan update.

Based on information gathered through these activities as well as review of the existing plan content, a draft plan will be prepared.

#### **Phase 1 Methods and Timing**

In order to undertake research and early engagement with member jurisdictions, subject matter experts, stakeholders and the public, the following methods are being proposed for phase 1.

<b>Method</b>	<b>Purpose</b>	<b>Timing</b>
Meetings	To gather input from subject matter experts, other government agencies and key stakeholders to better understand context and options for policy changes around key issues	Spring/Summer 2021
Advisory committee updates	To inform key regional advisory committees on plan update and gather feedback	Spring/Summer 2021
Project webpage	To provide an information portal on plan update, key themes and ways to engage	Spring 2021

---

Public opinion survey	To obtain a statistically valid measure of public opinion on regional parks and key issues	Spring/Summer 2021
-----------------------	--	--------------------

---

### **Regional Parks Plan Update Phase 2**

Phase 2 of the process will include broad engagement on the draft Regional Parks Plan with member jurisdictions, other government agencies, subject matter experts, stakeholders and the public. The concurrent First Nations engagement process will continue during phase 2 of the project. Feedback received during phase 2 will be used to revise the plan prior to submission to the MVRD Board for final adoption. A detailed engagement plan for phase 2 will be developed following phase 1 of the project.

### **ALTERNATIVES**

1. That the MVRD Board authorize staff to proceed with phase 1 of the *Regional Park Plan* update as presented in the report dated February 11, 2021, titled “Regional Parks Plan Update”.
2. That the MVRD Board receive for information the report dated February 11, 2021, titled “Regional Parks Plan Update” and provide staff with alternate direction.

### **FINANCIAL IMPLICATIONS**

The 2021 Regional Parks budget includes \$195,600 to support the development of the *Regional Parks Plan* update.

### **CONCLUSION**

Metro Vancouver is undertaking an update of the *Regional Parks Plan*. The update will confirm Regional Parks’ ‘protect and connect’ mandate and ensure the plan addresses the key issues of climate change, social equity and human health and wellness. The updated plan will guide delivery of the Regional Parks Service in a growing region for the next 30 years, provide a 10- year implementation plan, and updated performance metrics.

Staff is seeking MVRD Board authorization to proceed with phase 1 of the Regional Parks Plan update which will focus on research and early engagement. Phase 1 will conclude with development of a draft plan. Phase 2 of the project will focus on broad engagement with municipal jurisdictions, First Nations, other government agencies, subject matter experts, stakeholders and the public.

Staff recommends the Board approve Alternative 1.

43604414



---

To: Finance and Intergovernment Committee

From: Joe Sass, Director, Financial Planning and Operations

Date: February 23, 2021 Meeting Date: March 10, 2021

Subject: **Allocation of COVID-19 Safe Restart Grant**

---

**RECOMMENDATION**

That the MVRD Board approve the allocation of COVID-19 Safe Restart Grant funding per the Schedule – Allocation of COVID-19 Safe Restart Grant (Attachment 2) as presented in the report dated February 23, 2021, titled “Allocation of COVID-19 Safe Restart Grant.”

---

**EXECUTIVE SUMMARY**

As part of the Provincial and Federal government response to the COVID-19 pandemic, a funding stream was established to provide direct grants to local governments. This funding stream is called “COVID-19 Safe Restart Grants for Local Government” and provides \$425 million for local operations impacted by COVID-19.

Metro Vancouver received a total one-time grant funding of \$2,325,000 in November 2020 and proposes to apply \$1,737,322 for extraordinary costs incurred in 2020 with the remainder reserved for use in 2021. The Schedule – Allocation of COVID-19 Safe Restart Grant shown in Attachment 2 contains the proposed allocation of the funds received under this program.

**PURPOSE**

To obtain approval for the allocation of the COVID-19 Safe Restart Grant funding provided by the Province of BC.

**BACKGROUND**

To help address the fiscal impacts of COVID-19, in September 2020 the Province of British Columbia announced nearly \$2 billion in joint federal/provincial spending, including: \$540 million for local governments, \$418 million for community infrastructure, and \$1 billion for transit and ferries.

The \$540 million for local governments was further divided into three funding streams. Two streams (“Development Services” for \$15 million and “Strengthening Communities” for \$100 million) will be application-based funding.

The third stream was for direct grants to local governments. This funding stream is called the “COVID-19 Safe Restart Grants for Local Governments” and provided up to \$425 million for local operations impacted by COVID-19. This funding is to support local governments as they deal with increased operating costs and lower revenue due to COVID-19. It will also ensure local governments can continue to deliver the services people depend on in their communities.

As part of the funding allotment under the third stream, Metro Vancouver received \$2,325,000.

### **ALLOCATION OF THE FUNDING**

With respect to the funds received by Metro Vancouver, the proposed allocation for 2020 is for \$1,737,322 to offset a variety of extraordinary costs including technology, cleaning, PPE and safety supplies as set out in the Schedule – Allocation of COVID-19 Safe Restart Grant shown in Attachment 2. These uses are within the eligible costs as set out in the letter from the Deputy Minister of Municipal Affairs and Housing (Attachment 1).

The remaining \$587,678 will be reserved for use in 2021 for similar costs that arise.

<b><u>Department</u></b>	<b><u>Amount</u></b>
Information Technology	\$ 1,300,340
Regional Parks	103,526
Corporate Safety	89,683
Housing	77,705
Building Operations	64,834
Other	101,234
Reserved for future use	587,678
<b>Total Grant Funding Received</b>	<b>\$ 2,325,000</b>

This allocation includes \$37,964 of costs deemed ineligible for emergency funding claims by Emergency Management BC.

### **ALTERNATIVES**

1. That the MVRD Board approve the allocation of COVID-19 Safe Restart Grant funding per the Schedule – Allocation of COVID-19 Safe Restart Grant (Attachment 2) as presented in the report dated February 23, 2021, titled “Allocation of COVID-19 Safe Restart Grant.”
2. That the MVRD Board receive for information the report dated February 23, 2021 titled “Allocation of COVID-19 Safe Restart Grant” and provide alternate direction to staff.

### **FINANCIAL IMPLICATIONS**

Should the MVRD Board approve Alternative 1, the allocation of the COVID-19 Safe Restart Grant funding as set out in Attachment 2 will be reflected in the 2020 Metro Vancouver financial statements. The funding received reimburses expenditures incurred to support the COVID-19 response and reserves the remainder for 2021.

### **CONCLUSION/SUMMARY**

As part of the Provincial and Federal government response to the COVID-19 pandemic, a funding stream was established to provide direct grants to local governments. Metro Vancouver received \$2,325,000.

The proposed allocation for 2020 is for \$1,737,322 to offset a variety of extraordinary costs including technology, cleaning, PPE and safety supplies as set out in Attachment 2. The remaining \$587,678 will be reserved for use in 2021 for similar costs that arise.

Staff recommend Alternative 1.

**Attachments**

1. Letter dated November 2, 2020 from Kaye Krishna, Deputy Minister of Municipal Affairs and Housing (*Doc # 44078317*)
2. Schedule – Allocation of COVID-19 Safe Restart Grant (*Doc # 44070093*)



November 2, 2020

Ref: 257735

Jerry Dobrovolny  
Chief Administrative Officer  
Metro Vancouver Regional District  
4730 Kingsway  
Burnaby BC V5H 0C6

Dear Jerry Dobrovolny:

The provincial government understands the fiscal impacts that COVID-19 has placed on local service providers. To help address these challenges, in September the Province of British Columbia announced nearly \$2 billion in joint federal/provincial spending, including: \$540 million for local governments, \$418 million for community infrastructure, and \$1 billion for transit, TransLink and ferries.

The \$540 million for local governments was further divided into three funding streams. Two streams ("Development Services" for \$15 million and "Strengthening Communities" for \$100 million) will be application-based funding. More information on these funding streams will be forthcoming.

The third stream will provide direct grants to local governments. This funding stream is called the "COVID-19 Safe Restart Grants for Local Governments" and will provide up to \$425 million for local operations impacted by COVID-19. This funding will support local governments as they deal with increased operating costs and lower revenue due to COVID-19. It will also ensure local governments can continue to deliver the services people depend on in their communities. Eligible costs will include:

- addressing revenues shortfalls;
- facility reopening and operating costs;
- emergency planning and response costs;
- bylaw enforcement and protective services like fire protection and police;
- computer and other electronic technology costs (to improve interconnectivity and virtual communications);
- services for vulnerable persons (e.g. persons living with disabilities, mental illness or addictions, persons experiencing homelessness or other vulnerabilities); and
- other related costs.

.../2

As you may recall, during the early months of COVID-19, the provincial government required all municipalities to fully remit requisitions to regional districts by August 1, 2020, despite any shortfalls in municipal tax collection. This was designed to ensure regional district requisitions were kept whole in 2020. Because of this earlier action, the COVID-19 Safe Restart Grant for Local Governments will place a funding emphasis on municipalities. However, there is still considerable funding under this grant program for regional districts.

I am pleased to advise you that **Metro Vancouver** is the recipient of a **\$2,325,000** grant under the COVID-19 Safe Restart Grant for Local Governments. This amount will be directly transferred to your regional district in the coming days.

Under section 36 of the Local Government Grants Regulation, the amount of the grant to each local government is set by Minister of Municipal Affairs and Housing. The determination of this amount was based on a formula that applies to all regional districts. The funding formula for regional districts is based on three components: a flat funding amount plus two per capita amounts. The flat amount will be \$300,000 to each regional district.

The first per capita amount will be based on the total regional district population (rural and municipal). This will provide \$3.10 per person. There will be a funding limit on this first per capita amount. The limit is \$1.8 million for Metro Vancouver and \$900,000 for all other regional districts. The higher limit for Metro Vancouver is in recognition of their larger population. The overall purpose of these limits is to ensure that the very largest regional districts do not receive a disproportionate share of funding compared to smaller and mid-sized regional districts.

The second per capita amount will be based on the rural population of a regional district (i.e. the population outside the boundaries of an incorporated municipality). This second per capita amount will provide \$8.13 per rural population. This second per capita amount is in recognition of the additional burden on regional districts because they are the primary local service provider in rural parts of British Columbia.

This overall formula is designed to ensure that larger regional districts receive more money than smaller ones, but that smaller and rural regional districts receive higher per capita funding than larger ones. This is in recognition that small regional districts often lack a diverse revenue base and the economies-of-scale to easily restart their operations.

An example of the funding formula (for a regional district of 65,000 people) is provided as an attachment to this letter. If you wish, you can apply this formula to your 2018 total population of **2,652,302** and rural population of **27,542** to determine your total funding amount. 2018 population data was used because it is the last year in which we have complete financial and demographic data for each regional district.

.../3

Before December 31, 2021, (a little over a year from this letter) the regional board must fully allocate the grant funds to the appropriate services. This allocation will be entirely at the discretion of the board. Ministry staff are available to assist regional district staff should they have any questions on allocation.

To ensure optimal transparency on the use of funds, there are two reporting requirements for regional districts. **First**, as part of the 2021 audited financial statements, the regional district must provide a report on how the funds were allocated to various regional and local services.

The **second** reporting requirement is an annual report on how the grant funds were spent in that year. This will be a schedule to your audited financial statements, under section 377 of the Local Government Act. The schedule will include the amount of funding received, the use of those funds, and the year-end balance of unused funds. This report may be consolidated for the entire regional district, rather than reporting on a service-by-service level. Your regional district must continue to annually report on the use of grant money until the funds are fully drawn down.

If you have questions or comments regarding this letter, please feel free to contact Jennifer Richardson, Grants Analyst, Local Government Infrastructure and Finance Branch, by email at: Jennifer.Richardson@gov.bc.ca, or by phone at: 778-698-3243.

The provincial government welcomes this opportunity to support COVID-19 restart and recovery throughout British Columbia. We believe that this funding will contribute to the long-term recovery of local governments who are both critical service providers and crucial drivers in the British Columbia economy.

Sincerely,



Kaye Krishna  
Deputy Minister

Attachment

pc: Jennifer Richardson, Grants Analyst, Local Government Infrastructure and Finance Branch  
Dean Rear, Chief Financial Officer, Metro Vancouver Regional District

**Attachment 1: Example Calculation for a Regional District with 65,000 People**

**Rockridge Regional District**

**Variables:**

	Population	Per Capital Amount	Funding Limit	Flat Funding Amount
Total RD	<b>65,000</b>	<b>\$3.10</b>	<b>\$900,000</b>	n/a
Rural Part of RD	<b>20,000</b>	<b>\$8.13</b>	n/a	n/a
Other	n/a	n/a	n/a	<b>\$300,000</b>

**Calculation:**

	A	B	C=AxB	D	E=min(C or D)
Cost Item	Population	Per Capital Amount	Pop-Based Funding	Ceiling	Funding
Total Population	<b>65,000</b>	<b>\$3.10</b>	201,500	<b>900,000</b>	201,500
Rural Population	<b>20,000</b>	<b>\$8.13</b>	162,600	<b>n/a</b>	162,600
Flat Amount	-----				<b>300,000</b>

**TOTAL**

664,100

Funding is based on a flat amount (**\$300,000**) plus two per capita amounts.

One per capita amount is based on total RD population times \$3.10 per person. This first per capita amount is subject to a funding ceiling of \$0.9M (or \$1.8M for Metro). In the above example, this amount equals **\$201,500**.

The second per capital amount is based on the rural population (i.e. outside municipal boundaries) times \$8.13 per person. In the above example, this equals **\$162,600**.

The total funding is the sum of these three amounts. In the above example, this equals **\$664,100**.

The RD population data is for 2018 (from BC Stats as at Oct 1, 2020)  
<https://www2.gov.bc.ca/gov/content/data/statistics/people-population-community/population/population-estimates>  
 "Municipal and sub-provincial areas population, 2011 to 2019.xls"



**Schedule – Allocation of COVID-19 Safe Restart Grant**

<u>Department</u>	<u>Amount</u>	<u>Description</u>
Information Technology	\$ 1,300,340	Hardware and virtual meeting (Zoom) licenses
Regional Parks	103,526	Additional cleaning services, traffic control services and other safety supplies
Corporate Safety	89,683	Masks and other safety supplies
Housing	77,705	Overtime for property operations and site administration staff and other safety supplies
Building Operations	64,834	Additional janitorial and security costs
Other	101,234	Other COVID-related costs including SVFD PPE, cleaning supplies and EOC costs not recovered under emergency funding
Reserved for future use	<u>587,678</u>	
<b>Total Grant Funding Received</b>	<b><u><u>\$ 2,325,000</u></u></b>	

---

To: Regional Parks Committee

From: Jamie Vala, Division Manager, Planning and Resource Management, Regional Parks

Date: February 10, 2021 Meeting Date: March 10, 2021

Subject: **Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021**

---

**RECOMMENDATION**

That the MVRD Board:

- a) give first, second and third reading to *Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021*; and
  - b) pass and finally adopt *Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021*.
- 

**EXECUTIVE SUMMARY**

The Local Government Act authorizes a regional district to dedicate land as regional park by way of a bylaw. *Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021* (Attachment) will dedicate land acquired in 2020 by MVRD for use as regional park. Work is in progress in 2021 to review regional park land that is not currently not dedicated for inclusion in a future bylaw.

**PURPOSE**

To obtain MVRD Board approval of *Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021* (Attachment) for the dedication of land acquired in 2020 as Regional Park.

**BACKGROUND**

Section 30 of the *Community Charter*, applicable to regional districts pursuant to section 278 of the *Local Government Act*, authorizes a regional district to dedicate land as a park by way of a bylaw. Lands dedicated and held as a regional park or trail cannot be utilized for non-park or trail uses, thereby providing additional protection for the intended use of the lands.

**PARK LAND DEDICATION**

The *Local Government Act* authorizes a Regional District to dedicate land as regional park by way of a bylaw. Once dedicated the land cannot be put to non-park uses. Dedication of land as a regional park can only be revoked by a bylaw adopted with the approval of the electors.

The lands included in Schedule A to the attached bylaw have been acquired by the MVRD in 2020 for park purposes. Schedule B is a list of all regional parks land dedicated through bylaw.

## **FUTURE DEDICATION AND PLANNING**

Metro Vancouver will be undertaking a project to review all regional park land that is not currently dedicated through bylaw and will be bringing a bylaw amendment forward to dedicate regional parks interests in the future.

## **ALTERNATIVES**

1. That the MVRD Board:
  - a) give first, second and third reading to *Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021*; and
  - b) pass and finally adopt *Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021*.
2. That the MVRD Board receive for information the report dated February 10, 2021, titled “Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021” and provide alternate direction to staff.

## **FINANCIAL IMPLICATIONS**

There are no financial implications as the result of this bylaw.

## **CONCLUSION**

The Local Government Act states that land for regional park must be dedicated to meet the definition of a ‘regional park’. Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021 will dedicate land acquired by MVRD for a regional park in 2020. Staff recommend that the MVRD Board choose Alternative 1, that the MVRD adopt Bylaw No. 1319, 2021. The lands identified in Schedule A and B have been acquired specifically for use as a regional park.

## **Attachment** (43677648)

*Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021*

METRO VANCOUVER REGIONAL DISTRICT  
BYLAW NO. 1319, 2021  
A Bylaw to Dedicate Land as Regional Park

WHEREAS:

- A. Section 30 of the *Community Charter*, applicable to regional districts pursuant to section 278 of the *Local Government Act*, authorizes a regional district to dedicate land as a park by way of a bylaw.
- B. the Greater Vancouver Regional District changed its name to “Metro Vancouver Regional District” by way of Letters Patent dated January 13, 2017, as approved by Province of British Columbia Order of the Lieutenant Governor in Council no. 023 dated January 30, 2017;
- C. the Greater Vancouver Regional District and the Metro Vancouver Regional District, as applicable, have previously dedicated land as a park by way of:
  - i. Greater Vancouver Regional District Dedication of Land as Regional Park Bylaw 1061, 2007,
  - ii. Greater Vancouver Regional District Dedication of Land as Regional Park Bylaw 1076, 2008,
  - iii. Greater Vancouver Regional District Dedication of Land as Regional Park Bylaw 1111, 2009, and
  - iv. Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1300, 2020(collectively, the “**Past Dedication Bylaws**”);
- D. the Metro Vancouver Regional District has acquired land legally described in the attached Schedule “A” (the “**Land**”) for regional park purposes; and
- E. the Land and those lands dedicated as park under the Past Dedication Bylaws are legally described in the attached Schedule “B”.

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

**Citation**

1. The official citation of this bylaw is “Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021”.

## **Dedication**

2. The Land is dedicated as regional park.

## **Schedules**

3. The following Schedules are attached to and form part of this bylaw:
  - a. Schedule "A", Lands acquired in 2020 for Regional Park Purposes; and
  - b. Schedule "B", Lands held for Regional Park Purposes.

Read a first, second and third time this \_\_ day of \_\_\_\_\_, 2021.

Passed and finally adopted by a 2/3 vote of all members of the Board this \_\_ day of \_\_\_\_\_, 2021.

---

Sav Dhaliwal, Chair

---

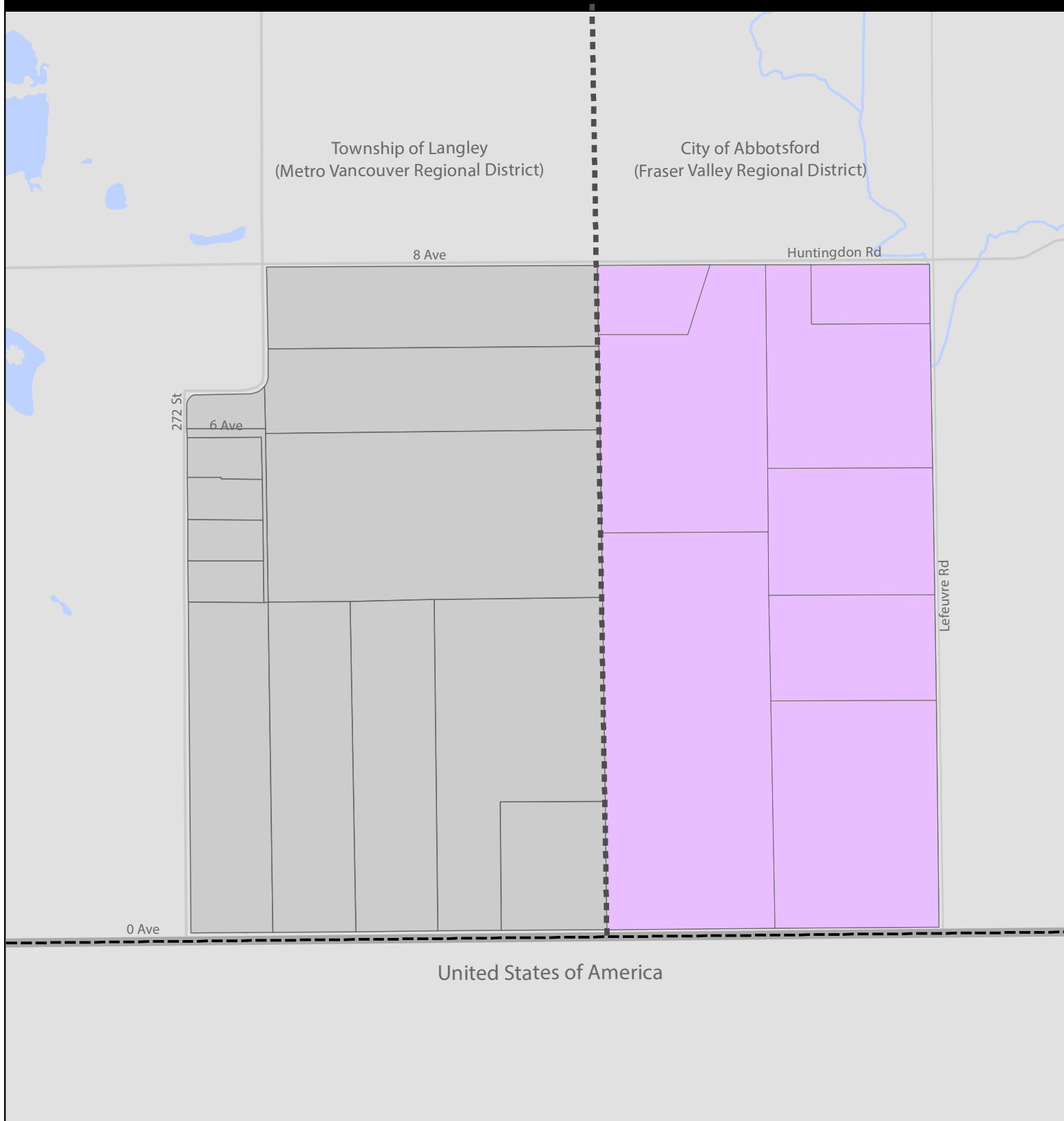
Chris Plagnol, Corporate Officer

## Schedule "A"

### Schedule A - Metro Vancouver Regional Parks List of 2020 Park Dedications




PARK	MUNICIPALITY	TENURE	LEGAL DESCRIPTION	PID	DATE OF ACQUISITION
<b>Aldergrove Regional Park</b>					
Aldergrove Regional Park	Abbotsford	Fee Simple	Lot "A" Section 5 Township 13 NWD Plan 17233	010-288-511	February 2020
Aldergrove Regional Park	Abbotsford	Fee Simple	West Half of the North East Quarter Section 5 Township 13 Except: Firstly: part Subdivided by Plan 17233, Secondly: part Subdivided by Plan 19412, Thirdly: Parcel "C" (Bylaw Plan 62651), NWD	013-330-802	February 2020
Aldergrove Regional Park	Abbotsford	Fee Simple	Lot "B" Section 5 Township 13 New Westminster District Plan 19412	010-486-411	February 2020
Aldergrove Regional Park	Abbotsford	Fee Simple	Parcel "A" (Explanatory Plan 12755) of the North 50 Acres of the East Half of the North East Quarter Section 5 Township 13 New Westminster District	013-330-837	February 2020
Aldergrove Regional Park	Abbotsford	Fee Simple	Lot 1 Section 5 Township 13 New Westminster District Plan 31567	006-609-601	February 2020
Aldergrove Regional Park	Abbotsford	Fee Simple	East Half of the North East Quarter Section 5 Township 13 Except: the North 50 Acres New Westminster District	013-330-756	February 2020
Aldergrove Regional Park	Abbotsford	Fee Simple	Lot 1 Section 5 Township 13 New Westminster District Plan 35703	007-181-205	February 2020
Aldergrove Regional Park	Abbotsford	Fee Simple	Lot 2 Section 5 Township 13 New Westminster District Plan 35703	007-181-221	February 2020
<b>Burns Bog Ecological Conservancy Area</b>					
Burns Bog Ecological Conservancy Area	Delta	Fee Simple	Lot B Section 12 Township 6 New Westminster District Plan EPP44870	029-928-494	August 2020
Burns Bog Ecological Conservancy Area	Delta	Fee Simple	Lot 1 District Lots 130 and 437 Group 2 New Westminster District Plan EPP41430	029-529-298	August 2020
Burns Bog Ecological Conservancy Area	Delta	Fee Simple	Lot A District Lot 437 Group 2 New Westminster District Plan EPP39194 Except Plan EPP67855	029-602-483	August 2020
Burns Bog Ecological Conservancy Area	Delta	Fee Simple	Lot 1 District Lot 14 Township 4 New Westminster District Plan EPP42759	031-162-088	August 2020
<b>Crippen Regional Park</b>					
Crippen Regional Park	Bowen Island	Fee Simple	Lot 6 District Lot 1910 Plan 13749	008-497-460	April 2020
<b>Kanaka Creek Regional Park</b>					
Kanaka Creek Regional Park	Maple Ridge	Fee Simple	That part of Lot 32 Section 13 Township 12 New Westminster District Plan NWP67649 as shown on Plan EPP98554	031-072-020	April 2020

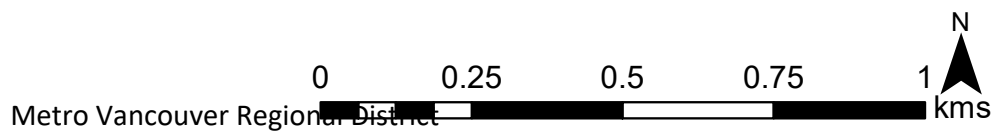
# Aldergrove Regional Park



## Metro Vancouver Regional Park Land Interests

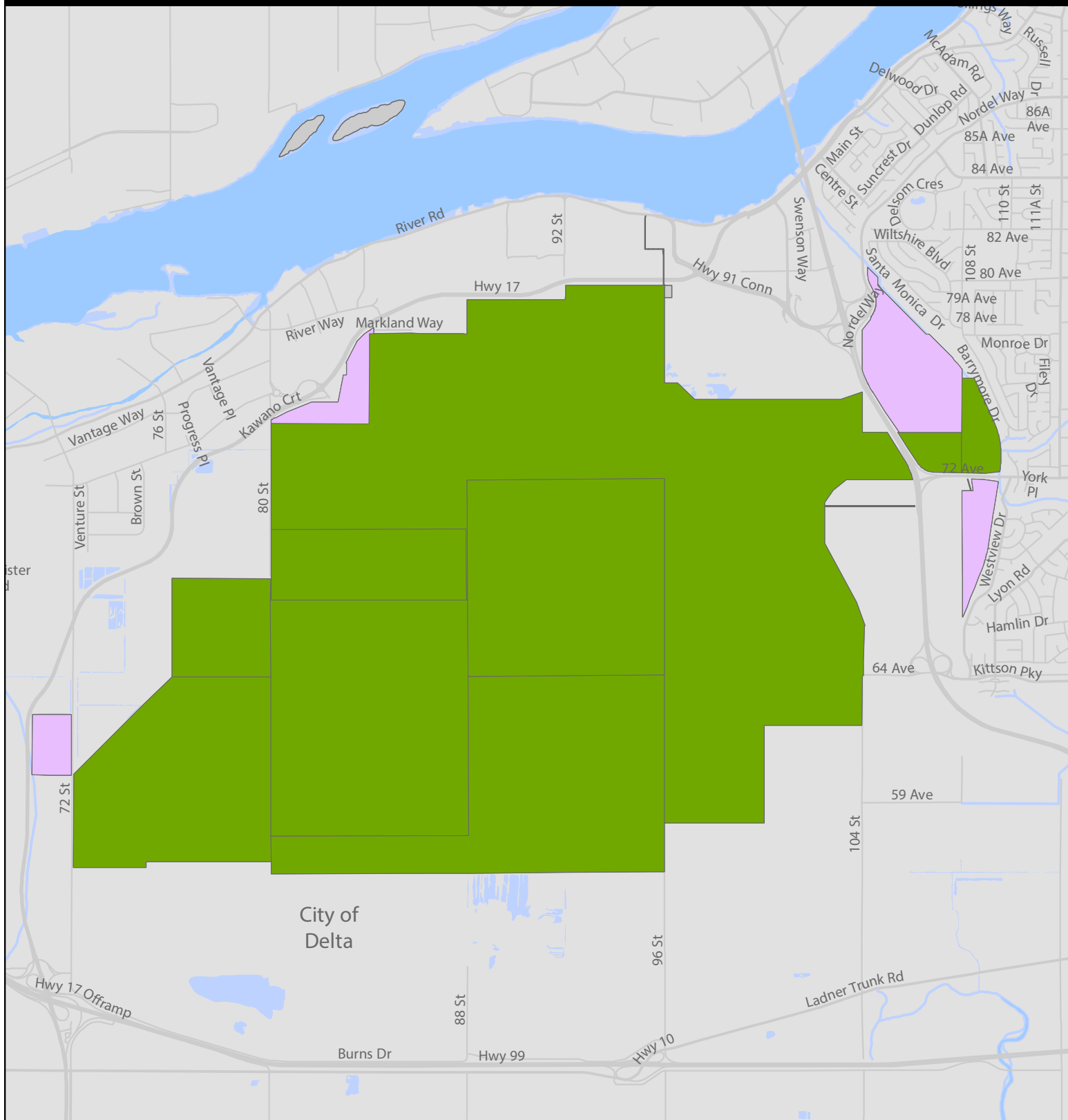
February 2021

-  Proposed dedication through this Bylaw (1319)
-  Dedicated through Previous Bylaws (1061, 1076, 1111 & 1300)
-  Not Dedicated through Bylaw








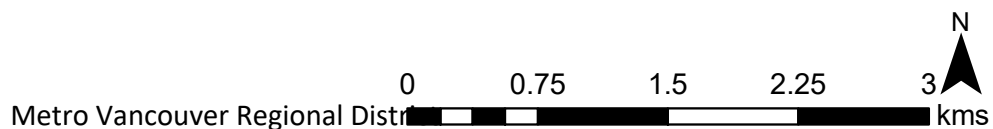
# Burns Bog Ecological Conservancy Area



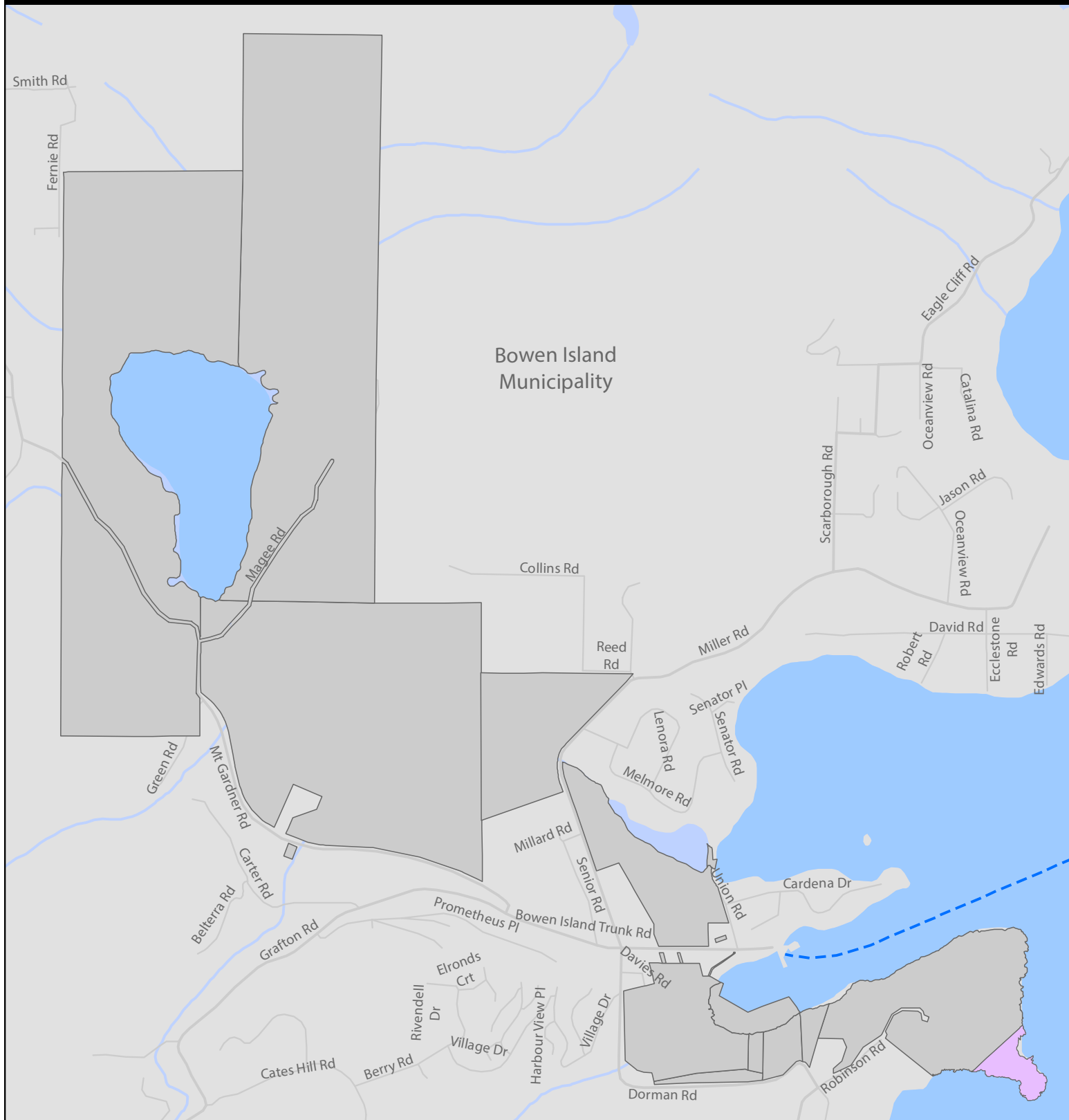
## Metro Vancouver Regional Park Land Interests

February 2021

-  Proposed dedication through this Bylaw (1319)
-  Dedicated through Previous Bylaws (1061, 1076, 1111 & 1300)
-  Not Dedicated through Bylaw



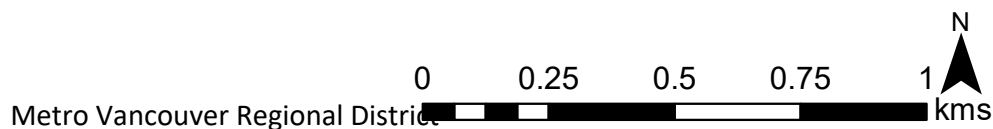
# Crippen Regional Park



## Metro Vancouver Regional Park Land Interests

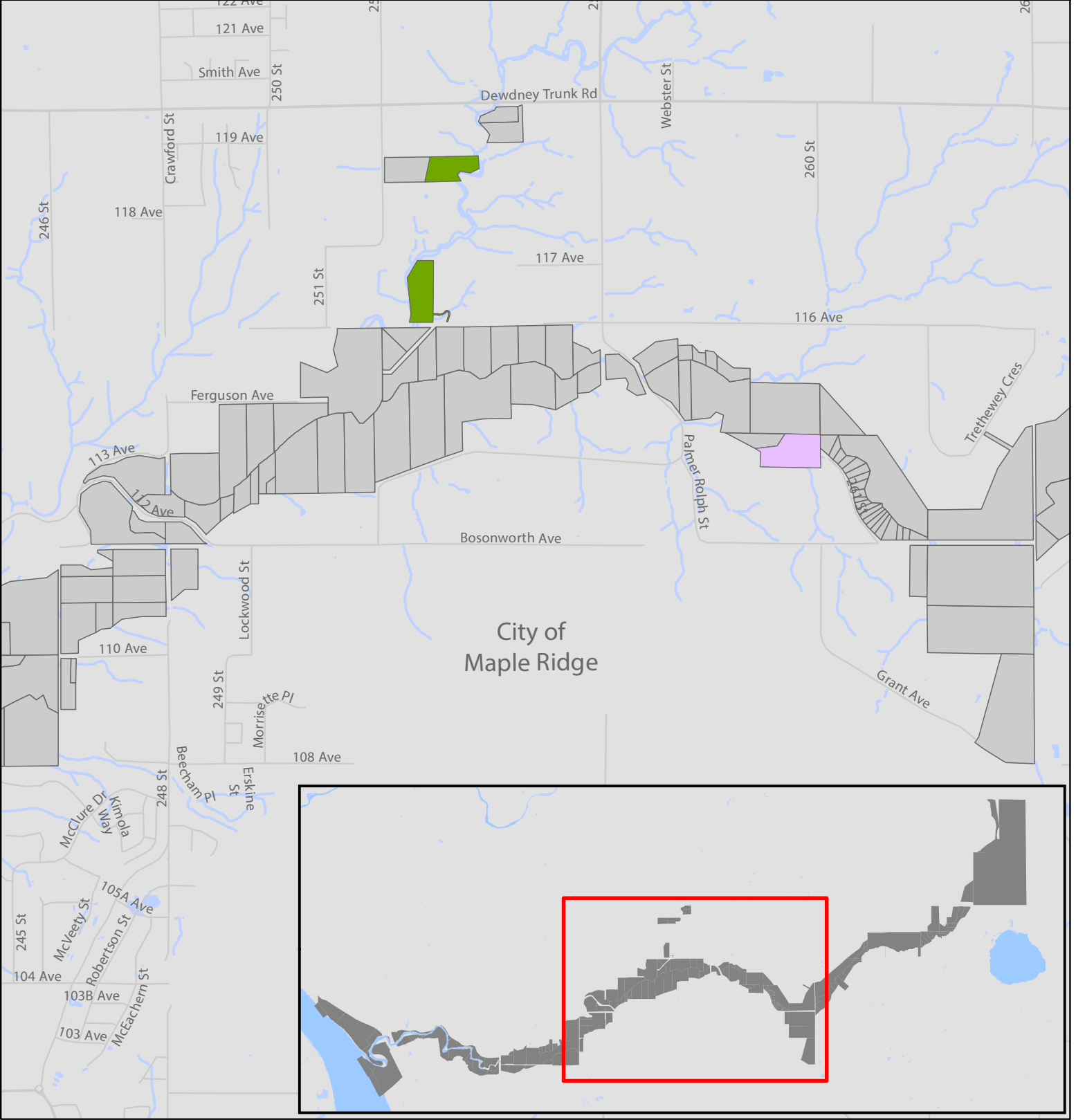
February 2021

- Proposed dedication through this Bylaw (1319)
- Dedicated through Previous Bylaws (1061, 1076, 1111 & 1300)
- Not Dedicated through Bylaw



Metro Vancouver Regional District

## Kanaka Creek Regional Park

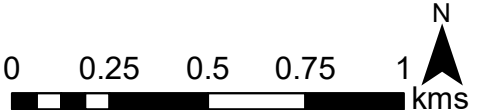


# Metro Vancouver Regional Park Land Interests

February 2021

- |   |
|---|
| Proposed dedication through this Bylaw (1319)               |
| Dedicated through Previous Bylaws (1061, 1076, 1111 & 1300) |
| Not Dedicated through Bylaw                                 |

# Metro Vancouver Regional District



## Schedule “B”

### Schedule B - Metro Vancouver Regional Parks Record of Historic Land Dedications

PARK	MUNICIPALITY	TENURE	LEGAL DESCRIPTION	PID	DATE OF ACQUISITION	DATE OF DEDICATION	BYLAW NO.
<b>Aldergrove Regional Park</b>							
Aldergrove Regional Park	Abbotsford	Fee Simple	Lot "A" Section 5 Township 13 NWD Plan 17233	010-288-511	February 2020		
Aldergrove Regional Park	Abbotsford	Fee Simple	West Half of the North East Quarter Section 5 Township 13 Except: Firstly: part Subdivided by Plan 17233, Secondly: part Subdivided by Plan 19412, Thirdly: Parcel "C" (Bylaw Plan 62651), NWD	013-330-802	February 2020		
Aldergrove Regional Park	Abbotsford	Fee Simple	Lot "B" Section 5 Township 13 New Westminster District Plan 19412	010-486-411	February 2020		
Aldergrove Regional Park	Abbotsford	Fee Simple	Parcel "A" (Explanatory Plan 12755) of the North 50 Acres of the East Half of the North East Quarter Section 5 Township 13 New Westminster District	013-330-837	February 2020		
Aldergrove Regional Park	Abbotsford	Fee Simple	Lot 1 Section 5 Township 13 New Westminster District Plan 31567	006-609-601	February 2020		
Aldergrove Regional Park	Abbotsford	Fee Simple	East Half of the North East Quarter Section 5 Township 13 Except: the North 50 Acres New Westminster District	013-330-756	February 2020		
Aldergrove Regional Park	Abbotsford	Fee Simple	Lot 1 Section 5 Township 13 New Westminster District Plan 35703	007-181-205	February 2020		
Aldergrove Regional Park	Abbotsford	Fee Simple	Lot 2 Section 5 Township 13 New Westminster District Plan 35703	007-181-221	February 2020		
<b>Burns Bog Ecological Conservancy Area</b>							
Burns Bog Ecological Conservancy Area	Delta	Fee Simple	Lot B Section 12 Township 6 New Westminster District Plan EPP44870	029-928-494	August 2020		
Burns Bog Ecological Conservancy Area	Delta	Fee Simple	Lot 1 District Lots 130 and 437 Group 2 New Westminster District Plan EPP41430	029-529-298	August 2020		
Burns Bog Ecological Conservancy Area	Delta	Fee Simple	Lot A District Lot 437 Group 2 New Westminster District Plan EPP39194 Except Plan EPP67855	029-602-483	August 2020		
Burns Bog Ecological Conservancy Area	Delta	Fee Simple	Lot 1 District Lot 14 Township 4 New Westminster District Plan EPP42759	031-162-088	August 2020		
<b>Crippen Regional Park</b>							
Crippen Regional Park	Bowen Island	Fee Simple	Lot 6 District Lot 1910 Plan 13749	008-497-460	April 2020		
<b>Kanaka Creek Regional Park</b>							
Kanaka Creek Regional Park	Maple Ridge	Fee Simple	That part of Lot 32 Section 13 Township 12 New Westminster District Plan NWP67649 as shown on Plan EPP98554	031-072-020	April 2020		

PARK	MUNICIPALITY	TENURE	LEGAL DESCRIPTION	PID	DATE OF ACQUISITION	DATE OF DEDICATION	BYLAW NO.
<b>Barnston Island Regional Park</b>							
Barnston Island	Surrey	Fee Simple	Lot 9 Section 3 Township 9 NWD Plan 3204	010-890-939	April 2009	October 2009	1111
Barnston Island	Surrey	Fee Simple	Parcel A (Reference Plan 4763) South 1/2 Section 10 Township 9 NWD	007-568-134	April 2009	October 2009	1111
<b>Blaney Bog Regional Park</b>							
Blaney Bog	Maple Ridge	Fee Simple	Lot 26 Sec 32 Twp 12 NWD Plan 23511	009-224-050	January 2005	May 2007	1061
Blaney Bog	Maple Ridge	Fee Simple	North 1/4 of North 1/2 of North East 1/4 Section 32 Township 12 NWD	013-302-027	December 2008	October 2009	1111
Blaney Bog	Maple Ridge	Fee Simple	West 1/2 Fractional Legal Subdivision 13 Section 35 Township 3 Range 5 West of Seventh Meridian NWD	013-180-037	December 2008	October 2009	1111
Blaney Bog	Maple Ridge	Fee Simple	East 1/2 Fractional Legal Subdivision 16 Section 34 Township 3 Range 5 West of Seventh Meridian NWD	013-180-029	December 2008	October 2009	1111
Blaney Bog	Maple Ridge	Fee Simple	South East 1/4 Legal Subdivision 1 Section 3 Township 4 Range 5 West of Seventh Meridian NWD	013-180-088	December 2008	October 2009	1111

PARK	MUNICIPALITY	TENURE	LEGAL DESCRIPTION	PID	DATE OF ACQUISITION	DATE OF DEDICATION	BYLAW NO.
<b>Boundary Bay Regional Park</b>							
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	Right of Way over the bed of Boundary Bay Grp 2 NWD shown bold outlined on Plan 56686	No PID	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "F" DL 171 Grp 2 NWD RP 51889 shown bold on Plan 56691	004-966-627	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "B" DL 171 Grp 2 NWD RP 51888 shown bold on Plan 56691	004-949-960	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "A" (RP50162) of Lot 15 Sec 23 Twp 5 NWD Plan 857 shown bold on Plan 56691	013-872-346	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "B" (RP 50161) of Lot 11 Sec 23 Twp 5 NWD Plan 23090 shown bold on Plan 56691	009-337-334	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "C" (RP 50160) of Lot 12 Sec 24 Twp 5 NWO Plan 23090 shown bold on Plan 56691	009-337-784	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "One" (RP50159) of Parcel A (RP7719) Sec 24 Tw" 5 NWD shown bold on Plan 56691	015-369-251	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Lot 10 Sec 24 Twp 5 NWD Plan 1715 shown bold on Plan 56667	009-181-971	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "A" (RP 51342) Lot 14 Fractional Sec 24 Twp 5 NWD Plan 30110 shown bold on Plan 56685	006-478-352	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Remainder Parcel "A" (EP 30794) Lot 13 Sec 24 Twp 5 NWD Plan 25196 shown bold on Plan 56667	008-728-950	May 2005	May 2007	1061
Boundary Bay	Delta	BC License of Occupation #239858; for 30 years starting January 1, 2006	That 8.093 hectare part of Remainder Parcel "A" (EP 30794) Lot 13 Sec 24 Twp 5 NWD Plan 25196 shown bold on plan attached to License of Occupation	008-728-950	January 2006	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529246	That part of Parcel "A" (RP46650) SE 1/4 Sec 29 Twp 3 NWD shown bold on Plan 56686	014-294-290	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "A" (RP48651) of the South Half of the NE 1/4 Sec 29 Twp 3 NWD shown bold on Plan 56686	014-294-303	May 2005	May 2007	1061

PARK	MUNICIPALITY	TENURE	LEGAL DESCRIPTION	PID	DATE OF ACQUISITION	DATE OF DEDICATION	BYLAW NO.
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "2" (RP48317) of Parcel "B" (RP 1130) of the NW 1/4 Sec 28 Twn 3 NWD shown bold on Plan 56686	014-294-401	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "3" (RP48372) of Parcel "C" (RP 43617) of the NW 114 Sec 28 Twn 3 NWD shown bold on Plan 56686	014-294-541	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel 3 (RP50184) of the NE 114 Sec 28 Twp 3 NWO shown bold on Plan 56686	015-375-251	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel 'A' (RP47312) of the NW 1/4 Sec 27 Twp 3 NWO shown bold on Plan 56689	014-295-270	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	Right of Way over the bed of Boundary Bay Grp 2 NWO shown bold on Plan 56689	No PID	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "A" (RP47187) of the Fractional NE 1/4 Sec 27 Twp 3 NWD shown bold on Plan 56689	014-295-237	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "8" (RP47187) of the Fractional SE 114 Sec 34 Twp 3 NWD shown bold on Plan 56689	014-295-253	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "A" (RP47313) of the South Half Sec 35 Twp 3 NWD shown bold on Plan 56689	014-295-181	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "One" (RP49171) of Parcel "B" (RP 49170) of the NE 1/4 Sec 35 Twp 3 NWD shown bold on Plan 56689	014-294-907	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	All that part of DL 841 Grp 2 NWD containing .7122 ha shown bold on Plan 56689	023-370-751	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "2" (RP49171) of Parcel "B" (RP 49170) of the NE 1/4 Sec 35 Twp 3 NWD shown bold on Plan 56689	014-294-915	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Lot 14 Sec 36 Twp 3 NWO Plan 47311 shown bold on Plan 56689	006-180-205	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel "A" (RP 47175) of Lot 3 Sec 36 Twp 3 NWD Plan 8563 shown bold on Plan 56689	014-071-126	May 2005	May 2007	1061
Boundary Bay	Delta	Statutory Right-of-Way #BX529248	That part of Parcel 1 (RP LMP24097) of Lot 12 Sac 1 Twp 4 and Sec 36 Twp 3 NWD Plan 25376 shown in bold on LMP32005	023-135-166	May 2005	May 2007	1061



PARK	MUNICIPALITY	TENURE	LEGAL DESCRIPTION	PID	DATE OF ACQUISITION	DATE OF DEDICATION	BYLAW NO.
<b>Burns Bog Ecological</b>							
Burns Bog	Delta	Fee Simple	Remainder the West 100 acres south of the SE 114 Sec 23 Twp 4 NWD	000-915-106	March 2004	May 2007	1061
Burns Bog	Delta	Fee Simple	Remainder Parcel One (RP 25703) of the NE 1/4 Sec 14 Twp 4 NWD	000-915-084	March 2004	May 2007	1061
Burns Bog	Delta	Fee Simple	Remainder Parcel D (EP 2515) DL437 Grp 2 NWD	000-914-991	June 2004	May 2007	1061
Burns Bog	Delta	Fee Simple	Remainder Parcel 1 (RP8648) DL 437 Grp 2 NWD	000-915-114	June 2004	May 2007	1061
Burns Bog	Delta	1/2 interest in Fee Simple	Parcel 2 (Reference Plan BCP6339) of that part of Parcel D (Explanatory Plan 2515) DL 437 Group 2 as shown on Plan 64775 NWD	025-727-303	June 2009	October 2009	1111
Burns Bog	Delta	Lease of 1/2 interest in Fee Simple	Parcel 2 (Reference Plan BCP6339) of that part of Parcel D (Explanatory Plan 2515) DL 437 Group 2 as shown on Plan 64775 NWD	025-727-303	June 2009	October 2009	1111
<b>Capilano River Regional Park</b>							
Capilano River	District of North Vancouver	Fee Simple	Lot 1 (Explanatory Plan 10758) Except part in Plan 19183 Block 13 DL's 601 and 607 Plan 4740	011-351-225	July 2008	October 2009	1111
Capilano River	District of North Vancouver	Encroachment Agreement dated April 7, 2005 between Capilano Suspension Bridge Holdings Ltd. and GVRD; 5 years plus 2 renewals of 5 years starting April 1, 2005	Rem Lot N Blk 25 DL 601 & 607 Plan 13564	007-019-823	April 2005	May 2007	1061

PARK	MUNICIPALITY	TENURE	LEGAL DESCRIPTION	PID	DATE OF ACQUISITION	DATE OF DEDICATION	BYLAW NO.
<b>Codd Wetland Ecological Conservancy Area</b>							
Codd Wetland	Maple Ridge	1/2 interest in Fee Simple	Lot 1 Sec 31 Twp 12 NWD Plan BCP29366	027-025-934	April 2007	April 2008	1076
Codd Wetland	Maple Ridge	Lease of 1/2 interest in Fee Simple	Lot 1 Sec 31 Twp 12 NWD Plan BCP29366	027-025-934	March 2008	April 2008	1076
Codd Wetland	Maple Ridge	1/2 interest in Fee Simple	Lot A Sec 30 Twp 12 NWD Plan BCP29365	027-025-713	April 2007	April 2008	1076
Codd Wetland	Maple Ridge	Lease of 1/2 interest in Fee Simple	Lot A Sec 30 Twp 12 NWD Plan BCP29365	027-025-713	March 2008	April 2008	1076
Codd Wetland	Maple Ridge	Fee Simple	East Half Legal Subdivision 5 Section 7 Township 42 New Westminster District	013-557-220	December 2019	February 2020	1300
Codd Wetland	Maple Ridge	Fee Simple	Legal Subdivision 3 Section 7 Township 42 New Westminster District	013-557-009	December 2019	February 2020	1300
Codd Wetland	Maple Ridge	Fee Simple	Legal Subdivision 4 Section 7 Township 42 New Westminster District	013-557-084	December 2019	February 2020	1300
Codd Wetland	Maple Ridge	Fee Simple	Legal Subdivision 6 Section 7 Township 42 New Westminster District	013-557-157	December 2019	February 2020	1300
Codd Wetland	Pitt Meadows	Lease #BW548451; 25 years plus 25 year renewal, starting December 3, 2004	Lot A Sec 31 Tw 12 and Sec 6 Twp 42 NWD Plan BCP10255	025-912-861	December 2004	May 2007	1061
Codd Wetland	Pitt Meadows	Lease #BW532994; 25 years plus 25 year renewal, starting July 22, 2004	Lot B Sec 36 Twp 9 Sec 1 Twp 40 & Twp 42 NWD Plan BCP10255	025-912-879	July 2004	May 2007	1061
Codd Wetland	Pitt Meadows	Easement #BW130787	That part of Rem NW 114 Sec 6 Twp 42 NWD shown as Area 6 on BCP10256	001-535-595	March 2004	May 2007	1061
Codd Wetland	Pitt Meadows	Easement #BW130788	That part of Rem SW 1/4 Sec 6 Twp 42 NWD shown as Area 5 on BCP10256	001-535-455	March 2004	May 2007	1061
Codd Wetland	Pitt Meadows	Easements #BW130791 & #BW130792	Those parts of Rem SW 114 Sec6 Twp 42 NWD shown as Areas 1 and 2 on BCP10256	001-535-455	March 2004	May 2007	1061
Codd Wetland	Pitt Meadows	Easements #BW130779 & #BW130780	All roads and dykes on Rem N 112 NE Qtr Sec 31 Twp 12	000-774-880	March 2004	May 2007	1061
Codd Wetland	Pitt Meadows	Easements #BW130779 & #BW130780	All roads and dykes on Rem NE Qtr Sec 36 Twp 9 north of right bank or north fork of Lillooet River	000-774-766	March 2004	May 2007	1061

PARK	MUNICIPALITY	TENURE	LEGAL DESCRIPTION	PID	DATE OF ACQUISITION	DATE OF DEDICATION	BYLAW NO.
<b>Crippen Regional Park</b>							
Crippen	Bowen Island	Statutory Right-of-Way #BX294592	That part of Lot A DL 777 Grp 1 NWD Plan BCP20430 shown bold on BCP21172	026-470-667	December 2005	May 2007	1061
Crippen	Bowen Island	Lease dated December 21, 2005 between Bowen Island Municipality and GVRD; 10 years starting December 21, 2005	Lot A District Lot 777 Group 1 NWD Plan BCP20430	026-470-667	December 2005	May 2007	1061
Crippen	Bowen Island	Statutory Right-of-Way #BX294592	That part of Lot B DL 777 Grp 1 NWD Plan BCP20430 shown bold on BCP21172	026-470-675	December 2005	May 2007	1061
<b>Delta-South Surrey Regional Greenway</b>							
Delta-South Surrey	Delta	Statutory Right-of-Way #BW410120	That part of Lot 2 Sec 1 Twp 4 NWD Plan 6087 shown as Zone 1 on BCP13137	000-822-124	September 2004	May 2007	1061
Delta-South Surrey	Surrey	Statutory Right-of-Way #BW533255	That part of Lot 1 Sec 6 Twp 2 NWD Plan 4789 shown bold on BCP14572	014-041-774	November 2004	May 2007	1061
Delta-South Surrey	Surrey	Statutory Right-of-Way #BW384401	That part of Lot 1 Sec 6 Twp2 NWD Plan BCP12927 shown as Zone 1 on BCP12928	026-037-173	August 2004	May 2007	1061
Delta-South Surrey	Surrey	Statutory Right-of-Way #BW335434	That part of Remainder Parcel "D" (RP 6959) DL 51A Grp 2 NWO shown as Zone 1 on BCP12403	012-975-991	July 2004	May 2007	1061
Delta-South Surrey	Surrey	Statutory Right-of-Way #BW533258	That part of Lot 2 DL 51 A NWD Plan 11417 shown bold on BCP14573	009-522-701	November 2004	May 2007	1061
<b>Derby Reach Regional Park</b>							
Derby Reach	Langley Township	Lease	Lot A DL 414 Grp 2 and Section 7 Township 12 NWD Plan BCP30090	027-082-156	July 2008	October 2009	1111

PARK	MUNICIPALITY	TENURE	LEGAL DESCRIPTION	PID	DATE OF ACQUISITION	DATE OF DEDICATION	BYLAW NO.
<b>Glen Valley Regional Park</b>							
Glen Valley	Langley Township	2/3 interest in Fee Simple	West half of NE 1/4 Sec 13 Twp 11 NWD	013-279-688	December 2006	April 2008	1076
Glen Valley	Langley Township	Lease of 1/3 interest in Fee Simple	West half of NE 1/4 Sec 13 Twp 11 NWD	013-279-688	January 2008	April 2008	1076
Glen Valley	Langley Township	2/3 interest in Fee Simple	North Half of NW 1/4 Sec 13 Twp 11 NWD	013-279-726	December 2006	April 2008	1076
Glen Valley	Langley Township	Lease of 1/3 interest in Fee Simple	North Half of NW 1/4 Sec 13 Twp 11 NWD	013-279-726	January 2008	April 2008	1076
<b>Iona Beach Regional Park</b>							
Iona Beach	Richmond	Fee Simple	DL 8061 Grp 1 NWD	026-635-593	March 2006	May 2007	1061
Iona Beach	Richmond	Fee Simple	DL 8061 Grp 1 NWD	026-635-589	March 2006	May 2007	1061
<b>Kanaka Creek Regional Park</b>							
Kanaka Creek	Maple Ridge	Fee Simple	That Part of Lot 3 Except: South 110 Feet; Section 14 Township 12 New Westminster District Plan 2701 Shown on Plan EPP92979	030-828-171	June 2019	February, 2020	1300
Kanaka Creek	Maple Ridge	Fee Simple	Lot 1 DL 404 Grp 1 NWD Plan BCP25876	026-800-837	September 2006	May 2007	1061
Kanaka Creek	Maple Ridge	Fee Simple	That part of Lot B Sec 18 Twp 15 NWD Plan BCP26268 formerly known as Lot 25 Sec 18 Two 15 NWD Plan 27684	026-930-439	April 2005	May 2007	1061

PARK	MUNICIPALITY	TENURE	LEGAL DESCRIPTION	PID	DATE OF ACQUISITION	DATE OF DEDICATION	BYLAW NO.
<b>Matsqui Trail Regional Park</b>							
Matsqui Trail	Abbotsford	Statutory Right-of-Way #BX459015	That part of Lot 12 DL's 198 & 412 Plan 64659 shown bold on BCP18291	003-471-985	June 2005	May 2007	1061
Matsqui Trail	Abbotsford	Fee Simple	Parcel B (Reference Plan 3008) DL 67 Group 2 NWD	012-976-351	April 2009	October 2009	1111
<b>Minnekhada Regional Park</b>							
Minnekhada	Coquitlam	Fee Simple	Legal Subdivision 1 Section 21 Township 40 New Westminster District	007-568-444	December 2019	February 2020	1300
<b>North Alouette Regional Greenway</b>							
North Alouette	Maple Ridge	Fee Simple	Those Parts of the South Half of the South East Quarter Section 31 Township 12 New Westminster District and the North Half of the South East Quarter Section 31 Township 12 New Westminster District with a Total Area of 7.69 HA shown on Plan EPP87735	030-704-243	February 2019	February 2020	1300
<b>Pitt River Regional Greenway</b>							
Pitt River	Pitt Meadows	BC License of Occupation #239803; 10 years starting June 6, 2006	That part of Block A Sec 5 Block 5 North Range 1 East NWD Plan 1167 in dyke plan with fee 14700F Indefeasible Fee Book Volume 2 Folio 157	024-726-184	June 2006	May 2007	1061
Pitt River	Pitt Meadows	BC License of Occupation #239803; 10 years starting June 6, 2006	That part of Block A Sec 5 Block 5 North Range 1 East NWD Plan 1167 in dyke plan with fee 14700F Indefeasible Fee Book Volume 2 Folio 157	024-726-192	June 2006	May 2007	1061
Pitt River	Pitt Meadows	BC License of Occupation #239803; 10 years starting June 6, 2006	That part of Block A Sec 5 Block 5 North Range 1 East NWD Plan 1167 in dyke plan with fee 14700F Indefeasible Fee Book Volume 2 Folio 157	024-726-206	June 2006	May 2007	1061
Pitt River	Pitt Meadows	BC License of Occupation #239803; 10 years starting June 6, 2006	Part (Plan with fee deposited 14746F) Sec 31 Block 6 North Range 1 East NWD	024-733-091	June 2006	May 2007	1061

PARK	MUNICIPALITY	TENURE	LEGAL DESCRIPTION	PID	DATE OF ACQUISITION	DATE OF DEDICATION	BYLAW NO.
Pitt River	Pitt Meadows	Fee Simple	Lot A Sec 31 8tock6 North Range 1 East NWD Plan 3162	007-586-345	November 2005	May 2007	1061
Pitt River	Pitt Meadows	BC License of Occupation #239803; 10 years starting June 6, 2006	That part of remainder (Dyke) of DL 467 Grp 1 NWD in plan with fee 9245F Indefeasible Fee Book Volume 1 Folio 427 shown on lan 6859	024-756-679	June 2006	May 2007	1061
Pitt River	Pitt Meadows	BC License of Occupation #239803; 10 years starting June 6, 2006	That part of Parcel A (EP 47) Sec 19 and 20 Block 6 North Range 1 East NWD shown on plan 2895	024-732-435	June 2006	May 2007	1061
Pitt River	Pitt Meadows	Fee Simple	Rem Parcel "A" (RP 3141) Sec 16 Block 6 North Range 1 East	008-473-731	April 2005	May 2007	1061
Pitt River	Pitt Meadows	Fee Simple	Parcel One (RP 5553) Sec 2 and 3 Block 6 North Range 1 East	006-505-767	July 2006	May 2007	1061
Pitt River	Pitt Meadows	Fee Simple	Parcel A (RP with fee deposited 84720E) fractional Sec 4 Twp 40	006-505-686	July 2006	May 2007	1061
<b>Thwaytes Landing Regional Park</b>							
Thwaytes Landing	District of North Vancouver	Lease	That certain waterlot area of some 2,014 square metres more or less, fronting Lots 12 & 13 DL 871 Plan 2860 NWD District of North Vancouver shown on Lease Plan No. 2004-123 attached to lease	No PID	December 2004	May 2007	1061
<b>Widgeon Marsh Regional Park</b>							
Widgeon Marsh	Coquitlam	Easement #BB135022	That part of North 5 chains Legal Subdivision 8 Sec 27 Twp 40 NWD shown bold on BCP33440	007-786-905	November 2007	April 2008	1076
Widgeon Marsh	Coquitlam	Fee Simple	Fractional Legal Subdivision 9 Sec 27 Twp 40 Except: West 10 chains NWD	007-603-886	November 2007	April 2008	1076



Inventory of Metro Vancouver Regional Parks Lands Dedicated through Bylaw





---

To: Finance and Intergovernment Committee

From: Jerry W. Dobrovolny, CAO / Commissioner  
Chris Plagnol, Corporate Officer

Date: March 1, 2021 Meeting Date: March 10, 2021

Subject: **Indemnification Authorization Bylaw Updates – MVRD Amending Bylaw 1318, GVWD Amending Bylaw 254, and GVS&DD Amending Bylaw 343**

---

**RECOMMENDATION**

That the MVRD Board:

- a) give first, second and third reading to *Metro Vancouver Regional District Indemnification Authorization Amending Bylaw No. 1318, 2021*;
- b) pass and finally adopt *Metro Vancouver Regional District Indemnification Authorization Amending Bylaw No. 1318, 2021*; and
- c) resolve that, as of the date *Metro Vancouver Regional District Indemnification Authorization Amending Bylaw No. 1318, 2021* is adopted, the Board's resolution of November 27, 2020 relating to indemnification for all regional district officials in relation to the Cleveland Dam spillway gate event of October 1, 2020 ceases to have any force and effect.

That the GVWD Board:

- a) give first, second and third reading to *Greater Vancouver Water District Indemnification Authorization Amending Bylaw No. 254, 2021*; and
- b) pass and finally adopt *Greater Vancouver Water District Indemnification Authorization Amending Bylaw No. 254, 2021*.
- c) resolve that, as of the date *Greater Vancouver Water District Indemnification Authorization Amending Bylaw No. 254, 2021* is adopted, the Board's resolution of November 27, 2020 relating to indemnification for all regional district officials in relation to the Cleveland Dam spillway gate event of October 1, 2020 ceases to have any force and effect.

That the GVS&DD Board:

- a) give first, second and third reading to *Greater Vancouver Sewerage and Drainage District Indemnification Authorization Amending Bylaw No. 343, 2021*; and
- b) pass and finally adopt *Greater Vancouver Sewerage and Drainage District Indemnification Authorization Amending Bylaw No. 343, 2021*.

---

**EXECUTIVE SUMMARY**

Local government indemnification bylaws provide coverage for elected officials, officers, employees and volunteers for actions taken in the performance of duties or functions. The MVRD/GVWD/GVS&DD indemnification bylaws enacted in 2002 are based on older legislation that has since been revised. Staff recommend the adoption of updated indemnification bylaws that are consistent with the *Local Government Act*.



## **PURPOSE**

To seek adoption of three amending bylaws that indemnify the Board members, officers, employees and volunteers of each of Metro Vancouver Regional District, the Greater Vancouver Water District and the Greater Vancouver Sewerage & Drainage District.

## **BACKGROUND**

Staff undertook a review of Metro Vancouver's indemnification bylaws and identified that these bylaws are narrower in scope than what is permitted by the *Local Government Act* and are not consistent with indemnification bylaws adopted by member municipalities across the region.

To update these Indemnification Bylaws, this report brings forward three amending bylaws for each Board's consideration.

## **INDEMNIFICATION BYLAWS**

In November 2002, each Board adopted an indemnification bylaw, as follows:

- a) The GVRD Board adopted "*Greater Vancouver Regional District Indemnification Authorization Bylaw No. 983, 2002*";
- b) The GVWD Board adopted "*Greater Vancouver Water District Indemnification Authorization Bylaw No. 233, 2002*"; and
- c) The GVS&DD Board adopted "*Greater Vancouver Sewerage & Drainage District Indemnification Authorization Bylaw No. 222, 2002*".

For the purposes of this report, collectively these three bylaws will be referred to as the "Indemnification Bylaws."

The Indemnification Bylaws are based on statutory authority provided under the *Local Government Act* at the time they were adopted, which has been revised and updated over the years. *Local Government Act* sections 740 and 741 set out the scope of indemnity local governments may provide for their elected officials, officers, employees and volunteers. Section 740 authorizes local governments to indemnify their elected officials, officers, employees and volunteers against costs arising out of actions, prosecutions, inquiries and other proceedings in connection with the performance of their duties and functions.

A number of municipalities within the Metro Vancouver region, as well as other local governments within British Columbia, have updated their indemnification bylaws to reflect the wider scope of indemnification now permitted by the *Local Government Act*. Staff recommend that the MVRD/GVWD/GVS&DD Boards also update the Indemnification Bylaws for consistency with the *Local Government Act*. The recommended amending bylaw and a blackline version of the proposed changes are included as Attachments to this report.

## **NOVEMBER 2020 RESOLUTIONS**

At their respective November 27, 2020 Board meetings, the MVRD Board and the GVWD Board each adopted resolutions authorizing indemnification for all regional district officials in relation to the Cleveland Dam spillway gate event of October 1, 2020. With the adoption of the amending bylaws presented in this report, the November 27, 2020 resolutions will no longer be applicable.

## **ALTERNATIVES**

1. That the MVRD Board:

- a) give first, second and third reading to *Metro Vancouver Regional District Indemnification Authorization Amending Bylaw No. 1318, 2021*;
- b) pass and finally adopt *Metro Vancouver Regional District Indemnification Authorization Amending Bylaw No. 1318, 2021*; and
- c) resolve that, as of the date *Metro Vancouver Regional District Indemnification Authorization Amending Bylaw No. 1318, 2021* is adopted, the Board's resolution of November 27, 2020 relating to indemnification for all regional district officials in relation to the Cleveland Dam spillway gate event of October 1, 2020 ceases to have any force and effect.

That the GVWD Board:

- a) give first, second and third reading to *Greater Vancouver Water District Indemnification Authorization Amending Bylaw No. 254, 2021*; and
- b) pass and finally adopt *Greater Vancouver Water District Indemnification Authorization Amending Bylaw No. 254, 2021*.
- c) resolve that, as of the date *Greater Vancouver Water District Indemnification Authorization Amending Bylaw No. 254, 2021* is adopted, the Board's resolution of November 27, 2020 relating to indemnification for all regional district officials in relation to the Cleveland Dam spillway gate event of October 1, 2020 ceases to have any force and effect.

That the GVS&DD Board:

- a) give first, second and third reading to *Greater Vancouver Sewerage and Drainage District Indemnification Authorization Amending Bylaw No. 343, 2021*; and
- b) pass and finally adopt *Greater Vancouver Sewerage and Drainage District Indemnification Authorization Amending Bylaw No. 343, 2021*.

2. That the MVRD/GVWD and GVS&DD receive for information the report dated March 1, 2021 titled "Indemnification Authorization Bylaw Updates – MVRD Amending Bylaw 1318, GVWD Amending Bylaw 254, and GVSDD Amending Bylaw 343," and provide alternate direction to staff.

## **FINANCIAL IMPLICATIONS**

If the MVRD/GVWD/GVS&DD Board approves Alternative 1 there are no immediate financial implications. In the long term, there could be financial implications as providing MVRD/GVWD/GVS&DD elected officials, officers, employees and volunteers with indemnification in accordance with the statutory language in the *Local Government Act* could result in expenditures. These costs would be covered by the department within which the cause arose.

## **CONCLUSION**

Staff undertook a review of Metro Vancouver's Indemnification Bylaws that provide coverage for elected officials, officers, employees and volunteers for actions taken in the performance of duties or functions; in that review, staff identified that these bylaws should be updated for consistency with the current *Local Government Act*. On that basis, Alternative 1 is recommended.

## **Attachments**

1. *MVRD Indemnification Authorization Amending Bylaw No. 1318, 2021*
2. *Blackline Version Proposed Changes to MVRD Indemnification Authorization Bylaw No. 983, 2002*
3. ~~*GVWD Indemnification Authorization Amending Bylaw No. 254, 2021*~~
4. ~~*Blackline Version Proposed Changes to GVWD Indemnification Authorization Bylaw No. 233, 2002*~~
5. ~~*GVS&DD Indemnification Authorization Amending Bylaw No. 343, 2021*~~
6. ~~*Blackline Version Proposed Changes to GVS&DD Indemnification Authorization Bylaw No. 222, 2002*~~

**METRO VANCOUVER REGIONAL DISTRICT  
BYLAW NO. 1318, 2021  
A Bylaw to Amend “Greater Vancouver Regional District Indemnification Authorization  
Bylaw No. 983, 2002”**

**WHEREAS:**

- A. On November 1, 2002, the Board of Directors (the “Regional Board”) of the Greater Vancouver Regional District, now called the Metro Vancouver Regional District (the “Regional District”) adopted the “*Greater Vancouver Regional District Indemnification Authorization Bylaw No. 983, 2002*” to provide for indemnification of the District’s Board members, officers, employees and other persons pursuant to the *Local Government Act* [RSBC 1996] Chapter 323;
- B. The *Local Government Act* [RSBC 1996] Chapter 323 was repealed and replaced by the *Local Government Act* [RSBC 2015] Chapter 1; and
- C. The Board wishes to amend the “*Greater Vancouver Regional District Indemnification Authorization Bylaw No. 983, 2002.*”

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

**Citation**

- 1. The official citation of this Bylaw is “Metro Vancouver Regional District Indemnification Authorization Amending Bylaw No. 1318, 2021”.

**Amendment of Bylaw**

- 2. The “Greater Vancouver Regional District Indemnification Authorization Bylaw No. 983, 2002” is hereby amended as follows:
  - a) Delete Recital A in its entirety and replace it with the following new Recital A:

“The Board of Directors (the “**Regional Board**”) of the Metro Vancouver Regional District (the “**Regional District**”) may, pursuant to Section 740 of the *Local Government Act* [RSBC 2015] Chapter 1, enact a bylaw to provide for the indemnification of Regional District officials;”
  - b) Amend Recital C by:
    - i. deleting the words “*Indemnified Parties*” and replacing them with the words “*Regional District Officials*”;
    - ii. deleting the word “*shall*”; and
    - iii. adding a comma and the words “*in accordance with this Bylaw*” at the end of the sentence, so that Recital C now reads as follows:

“For the good rule and government of the Regional District, it is deemed expedient that all Regional District Officials be afforded protection in the performance of their respective duties on behalf of the Regional District, in accordance with this Bylaw.”

- c) Delete Sections 2, 3 and 4 in their entirety.
- d) Re-number the existing Section 5 as Section 8.
- e) Add a new Section 2 as follows:

#### **Definitions**

2. In this Bylaw:

“**indemnify**” means the payment of amounts required or incurred:

- (a) to defend an action or prosecution brought against a person in connection with the exercise or intended exercise of the person's powers or the performance or intended performance of the person's duties or functions;
- (b) to satisfy a judgment, award or penalty imposed in an action or prosecution referred to in paragraph (a); or
- (c) in relation to an inquiry under the *Public Inquiry Act* [SBC 2007] Chapter 9, or to another proceeding, that involves the administration of the Regional District or the conduct of Regional District business;

but does not extend to payment of a fine that is imposed as a result of a Regional District Official being convicted of an offence that is not a strict or absolute liability offence.

“**proceeding**” has the meaning given in the *Supreme Court Act* [RSBC 1996] Chapter 443 and includes a claim, hearing, application, investigation and review before or by a court, tribunal or other investigating or regulatory agency or body.

“**reasonable legal costs**” means the reasonable costs, including disbursements, incurred by a Regional District Official or by the Regional District in seeking, retaining and engaging legal counsel in respect of a matter for which indemnification is provided under this Bylaw, as determined by the Chief Administrative Officer or the Corporate Solicitor of the Regional District.

“**Regional District Official**” means

- (a) a current or former member of the Regional District;
- (b) a current or former officer or employee of the Regional District; or
- (c) a person who is or was a person referred to in Section 738 (1) of *Local Government Act* [RSBC 2015] Chapter 1, but only in relation to the exercise of powers or the performance of duties or functions for or on behalf of the Regional District.

- f) Add new headings “Indemnification” and “Limits on Indemnification,” and new Sections 3, 4, 5, 6 and 7 as follows:

**Indemnification**

3. Subject to Section 4 of this Bylaw, the Regional District will indemnify a Regional District Official in relation to, and from and against an action, prosecution or proceeding brought against or involving the Regional District Official, including reasonable legal costs, provided that the Regional District Official:
- (a) advises the Regional District, at the earliest opportunity, if the Regional District Official becomes aware of an actual or potential action, prosecution or proceeding for which indemnity may be claimed under this Bylaw;
  - (b) provides to the Regional District, within 48 hours after receipt, every notice of civil claim, originating application, letter or other document relating to an action, prosecution or proceeding, for which indemnity may be claimed under this Bylaw;
  - (c) cooperates fully and without interference in the defence, settlement, negotiation or management of any action, prosecution or proceeding, to the satisfaction of the Chief Administrative Officer or the Corporate Solicitor;
  - (d) does not admit liability, assume fault or settle or compromise any action, prosecution or proceeding, without prior approval from the Chief Administrative Officer or the Corporate Solicitor;
  - (e) makes such attendances and provide such documents, statements and information and do all such things as requested by the Chief Administrative Officer or the Corporate Solicitor; and
  - (f) consents, in writing or otherwise, that the Regional District shall have complete discretion to defend, manage, settle, compromise or otherwise resolve the action, prosecution or proceeding, including by:
    - i. appointment and instruction of legal counsel;
    - ii. assumption of the defence or management of any action, prosecution or proceeding;
    - iii. conduct of all necessary investigations and reviews;
    - iv. compromise or settlement of any action, prosecution or proceeding; and
    - v. payment or satisfaction of any judgment, award or penalty imposed in connection with the action, prosecution or proceeding.

### Limits on Indemnification

4. Where a court, tribunal or other investigating or regulatory agency or body, makes a finding in an action, prosecution or proceeding that a Regional District Official who has been indemnified, or is seeking indemnification under this Bylaw, has:
  - (a) been guilty of dishonesty, gross negligence, malicious or wilful misconduct;
  - (b) wilfully acted contrary to the terms of their employment;
  - (c) wilfully acted contrary to the lawful direction or order given by a person in authority over that Regional District Official;
  - (d) not acted in the honest performance of their duties;
  - (e) libeled or slandered a person or persons;
  - (f) not met the duty to respect confidentiality under Section 117 of the *Community Charter*;
  - (g) been disqualified from holding office under section 111 of the *Community Charter*; or
  - (h) been guilty of an offence that is not a strict or absolute liability offence,the Regional District's duty to indemnify under Section 3 of this Bylaw shall cease and the Regional District Official shall reimburse the Regional District for all amounts expended by the Regional District in the conduct of his, her or their representation or defence, and the Regional District shall not be obligated to pay any judgement, award or penalty imposed in such action, prosecution or proceeding.
5. The Regional District will not indemnify a Regional District Official for any legal costs incurred in relation to:
  - (a) the provision or receipt of employment law or labour relations advice;
  - (b) any action, prosecution or proceeding by the Regional District Official against the Regional District; or
  - (c) a motion of censure by the Regional Board.
6. The Regional District will not seek an indemnity against a Regional District Official in respect of any conduct of the Regional District Official that results in a claim for damages against the Regional District, unless the court makes a finding in the action that the Regional District Official has been guilty of dishonesty, gross negligence or malicious or wilful misconduct.
7. Nothing in this Bylaw precludes a Regional District Official from applying, pursuant to Section 740(2)(b)(ii) of the *Local Government Act*, for a Regional Board resolution to indemnify the Regional District Official in a specific case.

Read a first time this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

Passed and finally adopted this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

---

Sav Dhaliwal, Chair

---

Chris Plagnol, Corporate Officer



## GREATER VANCOUVER REGIONAL DISTRICT

## BYLAW NO. 983

**A Bylaw to Indemnify Board Members, Officers, Employees  
and Volunteers of the Greater Vancouver Regional District**

---

## WHEREAS:

A. ~~The Board of Directors (the “Regional Board”) of the Metro Vancouver Regional District (the “Regional District”) may, pursuant to Section 740 of the *Local Government Act* [RSBC 2015] Chapter 1, enact a bylaw to provide for the indemnification of Regional District officials; The Board of Directors (the “Regional Board”) of the Greater Vancouver Regional District (the “Regional District”) may by bylaw provide that the Regional District will indemnify its officers, employees or members of the Regional Board and, inter alia, those persons referred to in section 287(1)(e), (g) (h), (l), (m), (n), (o), (p) and (q) of the *Local Government Act*, and any equivalent section of any successor or replacement enactment (all of whom are hereinafter jointly called the “Indemnified Parties” and individually an “Indemnified Party”) against a claim for damages against an Indemnified Party arising out of the performance of that person's duties and, in addition, pay legal costs incurred in a court proceeding arising out of the claim;~~

B. The Regional Board on October 31, 1990, pursuant to section 755.1 of the then *Municipal Act*, adopted Greater Vancouver Regional District Officers' Indemnification Authorization Bylaw No 662, 1990 (“Bylaw No. 662”) and now wishes to repeal Bylaw No. 662 and enact a new bylaw to replace Bylaw No. 662;

C. For the good rule and government of the Regional District, it is deemed expedient that all ~~Indemnified Parties~~Regional District Officials ~~shall~~ be afforded protection in the performance of their respective duties on behalf of the Regional District, in accordance with this Bylaw.

NOW THEREFORE the Board of Directors of the Greater Vancouver Regional District, in open meeting assembled, ENACTS AS FOLLOWS:

1. Bylaw No. 662 is hereby repealed.

2. ~~The Regional District will indemnify an Indemnified Party against any claim for damages which may be made against an Indemnified Party arising out of the performance of that person's duties and, in addition, will pay the legal costs incurred by an Indemnified Party in a court proceeding arising out of such claim.~~

3. ~~It is a condition of the Regional District's obligation to indemnify an Indemnified Party under this Bylaw that the Regional District, at its option, shall have the right to conduct the defence of any claim and, in its sole discretion, to compromise or settle any claim or to pay the legal costs incurred by the Indemnified Party in defending the claim. It is a further condition of the Regional District's obligation to indemnify an Indemnified Party that the Indemnified Party cooperate fully in the defence of the claim and make such attendances and provide such documents, statements and information and do all such things as requested by the Regional District.~~

4. ~~For the purposes of this Bylaw, an Indemnified Party includes a person who does not come within the definition of an Indemnified Party at the time a claim for damages against that person is brought, provided that the person came within the definition of an Indemnified Party at the time the cause of action arose.~~

## **Definitions**

2. In this Bylaw:

“indemnify” means the payment of amounts required or incurred:

- (a) to defend an action or prosecution brought against a person in connection with the exercise or intended exercise of the person's powers or the performance or intended performance of the person's duties or functions;
- (b) to satisfy a judgment, award or penalty imposed in an action or prosecution referred to in paragraph (a); or
- (c) in relation to an inquiry under the *Public Inquiry Act* [SBC 2007] Chapter 9, or to another proceeding, that involves the administration of the Regional District or the conduct of Regional District business;

but does not extend to payment of a fine that is imposed as a result of a Regional District Official being convicted of an offence that is not a strict or absolute liability offence.

“proceeding” has the meaning given in the *Supreme Court Act* [RSBC 1996] Chapter 443 and includes a claim, hearing, application, investigation and review before or by a court, tribunal or other investigating or regulatory agency or body.

“reasonable legal costs” means the reasonable costs, including disbursements, incurred by a Regional District Official or by the Regional District in seeking, retaining and engaging legal counsel in respect of a matter for which indemnification is provided under this Bylaw, as determined by the Chief Administrative Officer or the Corporate Solicitor of the Regional District.

“Regional District Official” means

- (a) a current or former member of the Regional District;
- (b) a current or former officer or employee of the Regional District; or
- (c) a person who is or was a person referred to in Section 738 (1) of *Local Government Act* [RSBC 2015] Chapter 1, but only in relation to the exercise of powers or the performance of duties or functions for or on behalf of the regional district.

## **Indemnification**

3. Subject to Section 4 of this Bylaw, the Regional District will indemnify a Regional District Official in relation to, and from and against an action, prosecution or proceeding brought against or involving the Regional District Official, including reasonable legal costs, provided that the Regional District Official:

- (a) advises the Regional District, at the earliest opportunity, if the Regional District Official becomes aware of an actual or potential action, prosecution or proceeding for which indemnity may be claimed under this Bylaw;
- (b) provides to the Regional District, within 48 hours after receipt, every notice of civil claim, originating application, letter or other document relating to an action, prosecution or proceeding, for which indemnity may be claimed under this Bylaw;
- (c) cooperates fully and without interference in the defence, settlement, negotiation or management of any action, prosecution or proceeding, to the satisfaction of the Chief Administrative Officer or the Corporate Solicitor;
- (d) does not admit liability, assume fault or settle or compromise any action, prosecution or proceeding, without prior approval from the Chief Administrative Officer or the Corporate Solicitor;
- (e) makes such attendances and provide such documents, statements and information and do all such things as requested by the Chief Administrative Officer or the Corporate Solicitor; and
- (f) consents, in writing or otherwise, that the Regional District shall have complete discretion to defend, manage, settle, compromise or otherwise resolve the action, prosecution or proceeding, including by:
  - i. appointment and instruction of legal counsel;
  - ii. assumption of the defence or management of any action, prosecution or proceeding;
  - iii. conduct of all necessary investigations and reviews;
  - iv. compromise or settlement of any action, prosecution or proceeding; and
  - v. payment or satisfaction of any judgment, award or penalty imposed in connection with the action, prosecution or proceeding.

#### **Limits on Indemnification**

- 4. Where a court, tribunal or other investigating or regulatory agency or body, makes a finding in an action, prosecution or proceeding that a Regional District Official who has been indemnified, or is seeking indemnification under this Bylaw, has:
  - (a) been guilty of dishonesty, gross negligence, malicious or wilful misconduct;
  - (b) wilfully acted contrary to the terms of their employment;
  - (c) wilfully acted contrary to the lawful direction or order given by a person in authority over that Regional District Official;
  - (d) not acted in the honest performance of their duties;

- (e) libeled or slandered a person or persons;
- (f) not met the duty to respect confidentiality under Section 117 of the *Community Charter*;
- (g) been disqualified from holding office under section 111 of the Community Charter; or
- (h) been guilty of an offence that is not a strict or absolute liability offence,

the Regional District's duty to indemnify under Section 3 of this Bylaw shall cease and the Regional District Official shall reimburse the Regional District for all amounts expended by the Regional District in the conduct of his, her or their representation or defence, and the Regional District shall not be obligated to pay any judgement, award or penalty imposed in such action, prosecution or proceeding.

5. The Regional District will not indemnify a Regional District Official for any legal costs incurred in relation to:

- (a) the provision or receipt of employment law or labour relations advice;
- (b) any action, prosecution or proceeding by the Regional District Official against the Regional District; or
- (c) a motion of censure by the Regional Board.

6. The Regional District will not seek an indemnity against a Regional District Official in respect of any conduct of the Regional District Official that results in a claim for damages against the Regional District, unless the court makes a finding in the action that the Regional District Official has been guilty of dishonesty, gross negligence or malicious or wilful misconduct.

7. Nothing in this Bylaw precludes a Regional District Official from applying, pursuant to Section 740(2)(b)(ii) of the *Local Government Act*, for a Regional Board resolution to indemnify the Regional District Official in a specific case.

5.8. This Bylaw may be cited for all purposes as "Greater Vancouver Regional District Indemnification Authorization Bylaw No. 983, 2002".

READ A FIRST TIME THIS \_\_\_\_\_ DAY OF \_\_\_\_\_

READ A SECOND TIME THIS \_\_\_\_\_ DAY OF \_\_\_\_\_

READ A THIRD TIME THIS \_\_\_\_\_ DAY OF \_\_\_\_\_

RECONSIDERED, PASSED AND FINALLY ADOPTED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_

---

CHAIRPERSON

---

CORPORATE SECRETARY

---

**COMMITTEE INFORMATION ITEMS AND DELEGATION SUMMARIES**

Metro Vancouver Regional District

Board Meeting Date – Friday, March 26, 2021

---

This information item, listing recent information received by committee, is provided for the MVRD Board's information. Please access a complete PDF package [here](#).

**Finance and Intergovernment Committee – March 10, 2021***Delegation Summaries:*

No delegations presented

*Information Items:*

5.2 Alternate Models for Single Sewerage Area Allocation

44006949