

**METRO VANCOUVER REGIONAL DISTRICT (MVRD)  
BOARD OF DIRECTORS****REGULAR BOARD MEETING****Friday, March 25, 2022****9:15 A.M.**

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

[Membership and Votes](#)

**REVISED AGENDA<sup>1</sup>****A. ADOPTION OF THE AGENDA****1. March 25, 2022 Regular Meeting Agenda**

That the MVRD Board adopt the agenda for its regular meeting scheduled for March 25, 2022 as circulated.

**B. ADOPTION OF THE MINUTES****1. February 25, 2022 Regular Meeting Minutes**

That the MVRD Board adopt the minutes for its regular meeting held February 25, 2022 as circulated.

**C. DELEGATIONS*****On-table*****1. Dr. Mark Lysyshyn, Deputy Medical Health Officer, Vancouver Coastal Health**

Subject: Consideration of Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, a bylaw to adopt Metro 2050

**2. Roderick Louis**

Subject: Consideration of Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, a bylaw to adopt Metro 2050

**D. INVITED PRESENTATIONS**

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

**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 Climate 2050 Industry and Business Roadmap**

That the MVRD Board direct staff to proceed with engagement on the draft *Climate 2050 Industry and Business Roadmap*, as presented in the report dated February 17, 2022, titled "Draft Climate 2050 Industry and Business Roadmap".

**1.2 Mobile Air Quality Monitoring Using Drone-Based Sensors**

That the MVRD Board authorize staff to use the allocation from the Regional District Sustainability Innovation Fund for the project "Mobile Monitoring of Fugitive and Other Industrial Air Emissions with 'Flying Labs'" to evaluate the feasibility of using other mobile monitoring platforms for air emissions assessment.

**1.3 Addressing the Use of Heavy Fuel Oil and Exhaust Gas Cleaning Systems in Marine Vessels in the Region**

That the MVRD Board authorize the Board Chair to:

- a) write to the federal ministers of Environment and Climate Change Canada and Transport Canada to request the prohibition of scrubbers and require the use of cleaner, lower sulphur fuels that meet sulphur content limits without the use of scrubbers, in the North American Emission Control Area (ECA), and prioritize the use of shore power; and
- b) write to the Vancouver Fraser Port Authority to express support for their actions to prohibit the discharge of scrubber washwater while a vessel is at berth or anchor and further encourage this action to apply to vessels transiting all the waters within the Port, as well as support their air emissions program that incentivizes the use of cleaner fuels and shore power.

That the MVRD Board authorize the Board Chair to write the port authorities of Seattle, Tacoma and Prince Rupert to call for prohibition on the discharge of scrubber washwater, similar to the actions of the Vancouver Fraser Port Authority.

**2. CHIEF ADMINISTRATIVE OFFICER REPORTS**

**2.1 Proposed Amendment to the 2022 Schedule of Regular Board Meetings**

That the MVRD Board amend the 2022 schedule of regular Board meetings by:

- a) rescheduling the Board Strategic Plan Review meeting set for February 26, 2022 to July 7, 2022 at 9:15 a.m.; and
- b) rescheduling the Board Budget Review meeting set for April 27, 2022 to April 14, 2022 at 1:00 p.m.

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



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

**1. REGIONAL PLANNING COMMITTEE REPORTS**

**1.1 Consideration of Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022, a bylaw to adopt Metro 2050**

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

That the MVRD Board:

- a) give first and second readings to *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, a bylaw that would adopt *Metro 2050* as the regional growth strategy for Metro Vancouver;
- b) refer *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, to a Public Hearing to be held in April \_\_\_, 2022; and
- c) given the urgent need to respond to climate change and prepare for extreme weather events, direct staff to undertake work and engagement with an aim to proposing an early amendment to *Metro 2050* post-adoption to strengthen climate action language and policy including the intent to improve integration of climate action into other *Metro 2050* priorities.

**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 25, 2022 pursuant to the *Community Charter* provisions, Section 90 (1) (e), (g), (i) and 90 (2) (b) 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:
- (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;
  - (g) litigation or potential litigation affecting the regional district;
  - (i) the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose; and
- 90 (2) A part of a meeting must be closed to the public if the subject matter being considered relates to one or more of the following:

- (b) the consideration of information received and held in confidence relating to negotiations between the regional district and a provincial government or the federal government or both, or between a provincial government or the federal government or both and a third party.”

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

**M. ADJOURNMENT/CONCLUSION**

That the MVRD Board adjourn/conclude its regular meeting of March 25, 2022.

**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 25, 2022 in the 28<sup>th</sup> Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia.

**MEMBERS PRESENT:**

Burnaby, Chair, Director Sav Dhaliwal	Port Moody, Director Rob Vagramov* (arrived at 9:59 a.m.)
North Vancouver City, Vice Chair Director	Richmond, Director Malcolm Brodie*
Linda Buchanan* (departed at 1:08 p.m.)	Richmond, Director Harold Steves*
Anmore, Director John McEwen*	Surrey, Director Linda Annis* (arrived at 9:52 a.m.)
Belcarra, Director Jamie Ross*	Surrey, Director Doug Elford*
Bowen Island, Director David Hocking*	Surrey, Director Laurie Guerra*
Burnaby, Director Pietro Calendino* (departed at 1:07 p.m.)	Surrey, Director Doug McCallum*
Burnaby, Director Mike Hurley*	Surrey, Director Mandeep Nagra* (departed at 1:04 p.m.)
Coquitlam, Director Craig Hodge*	Surrey, Director Allison Patton*
Coquitlam, Director Richard Stewart*	Tsawwassen, Director Ken Baird*
Delta, Director George Harvie*	Vancouver, Director Christine Boyle*
Delta, Director Jeannie Kanakos*	Vancouver, Director Adriane Carr
Electoral Area A, Director Jen McCutcheon*	Vancouver, Director Melissa De Genova* (arrived at 9:04 a.m.)
Langley City, Director Gayle Martin*	Vancouver, Director Lisa Dominato*
Langley Township, Director Jack Froese*	Vancouver, Director Colleen Hardwick*
Langley Township, Director Kim Richter*	Vancouver, Alternate Director Pete Fry* for Kennedy Stewart
Lions Bay, Director Ron McLaughlin*	Vancouver, Director Michael Wiebe*
Maple Ridge, Director Mike Morden* (departed at 1:12 p.m.)	West Vancouver, Director Mary-Ann Booth* (arrived at 9:03 a.m.)
New Westminster, Director Jonathan Coté*	White Rock, Director Darryl Walker* (departed at 1:02 p.m.)
North Vancouver District, Director Lisa Muri*	
Pitt Meadows, Director Bill Dingwall*	
Port Coquitlam, Director Brad West* (arrived at 9:52 a.m.)	

**MEMBERS ABSENT:**

None

**STAFF PRESENT:**

Jerry W. Dobrovolsky, Chief Administrative Officer  
Chris Plagnol, Corporate Officer  
Natalia Melnikov, 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 25, 2022 Regular Meeting Agenda**

**It was MOVED and SECONDED**

That the MVRD Board adopt the agenda for its regular meeting scheduled for February 25, 2022 as circulated.

9:03 a.m. Director Booth arrived at the meeting.

Members were informed about delegations to be added to the agenda would be considered in three parts.

9:04 a.m. Director De Genova arrived at the meeting.

**Amendment to the Agenda**

**It was MOVED and SECONDED**

That the MVRD Board amend the agenda for its regular meeting scheduled for February 25, 2022, by:

- a) adding Item C.1 Alex Boston, Renewable Cities, Centre For Dialogue, Simon Fraser University, and
- b) setting delegation speaking time at five minutes.

**CARRIED**

**Amendment to the Agenda**

**It was MOVED and SECONDED**

That the MVRD Board amend the agenda for its regular meeting scheduled for February 25, 2022, by:

- a) adding the following delegations speaking to Item G1.1 of the agenda:
  - i. Item C.2 Preet Heer, Manager, Community Planning, City of Surrey;
  - ii. Item C.3 Chief Harley Chappell, Semiahmoo First Nation; and
  - iii. Item C.4 Councillor Joanne Charles, Semiahmoo First Nation; and
- b) setting delegation speaking time at five minutes.

**CARRIED**

**Amendment to the Agenda**

**It was MOVED and SECONDED**

That the MVRD Board amend the agenda for its regular meeting scheduled for February 25, 2022, by:

- a) adding the following delegations in relation to Item G1.1 of the agenda,
  - i. Item C.5 Deb Jack, President, Surrey Environmental Partners;
  - ii. Item C.6 Peter Stepney;
  - iii. Item C.7 Kim Stepney;
  - iv. Item C.8 Brian Coote;

- v. Item C.9 Christy Juteau, Director, A Rocha Canada;
- vi. Item C.10 Christine Bishop;
- vii. Item C.11 Deborah Carlson, West Coast Environmental Law;
- viii. Item C.12 Sofi Hindmarch, Wildlife Biologist;
- ix. Item C.13 Sarah Rush; and
- b) setting speaking time at three minutes.

A member raised a question regarding speaking time being limited to three minutes for delegations who have previously spoken on the matter presented in Item G 1.1 of the agenda.

**Amendment to the Amendment**

**It was MOVED and SECONDED**

That the MVRD Board amend the amendment by replacing the phrase to “setting speaking time at three minutes” with the phrase “setting speaking time at five minutes”.

**DEFEATED**

Question on the Amendment to the Agenda was then called and it was

**CARRIED**

**Question on the Agenda as Amended**

Question was then called on the Agenda as Amended and it was

**CARRIED**

**B. ADOPTION OF THE MINUTES**

**1. January 28, 2022 Regular Meeting Minutes**

**It was MOVED and SECONDED**

That the MVRD Board:

- a) correct the minutes for its regular meeting held January 28, 2022 as follows:
  - i) prior to Item C.1, inserting the phrase “Pursuant to the Procedure Bylaw, the Chair limited delegation speaking time to three minutes.”;
  - ii) at the end of Item C.17 Laurie Kremsater, adding the phrase “She confirmed the Madrone environmental study commissioned by the City of Surrey was only an inventory study and cannot be construed as an impact assessment.”; and
- b) adopt the minutes as corrected.

**CARRIED**

**C. DELEGATIONS**

**1. Alex Boston, Renewable Cities, Centre For Dialogue, Simon Fraser University**

Alex Boston, Renewable Cities, Centre for Dialogue, Simon Fraser University, spoke to members regarding *Metro 2050* highlighting the need to align

*Metro 2050* with stronger climate action language and policy given the urgent need to respond to climate change and to prepare for extreme weather events. The delegation spoke in support of undertaking additional climate policy work with an aim to an early amendment to *Metro 2050* post-adoption.

Presentation material titled “Metro 2050 Vision-Strategy Alignment Course Correction” is retained with the February 25, 2022 MVRD Board agenda.

**2. Preet Heer, Manager, Community Planning, City of Surrey**

Preet Heer, Manager, Community Planning, City of Surrey, spoke to members about meetings the City of Surrey initiated with Semiahmoo First Nation related to the proposed Regional Growth Strategy amendment as presented in Item G 1.1 of the agenda highlighting the City’s environmental protection plan, aquifer protection, utility infrastructure capacity, and *Transport 2050’s* Major Transportation Network proximity with the proposed development area.

In response to questions, members were informed about consultation efforts conducted to date between City of Surrey and Semiahmoo First Nation.

**3. Chief Harley Chappell, Semiahmoo First Nation**

Chief Harley Chappell, Semiahmoo First Nation, spoke in opposition to item G 1.1 of the agenda highlighting specific articles from the *United Nations Declaration of the Rights of Indigenous Peoples* requiring municipalities to consult and cooperate with Indigenous Peoples, and the rights of Indigenous Peoples to use and protect their land. The Chief spoke to the value of conversations in the era of reconciliation and that communications with the City of Surrey are only in the early stages at this time.

9:52 a.m. Directors Annis and West arrived at the meeting.

In response to questions, members were informed that meetings held with the City of Surrey were not related to the proposed amendment, and that this project could negatively impact habitat and water quality, putting the tree canopy and animal species at risk.

9:59 a.m. Mayor Vagramov arrived at the meeting.

**4. Councillor Joanne Charles, Semiahmoo First Nation**

Councillor Joanne Charles, Semiahmoo First Nation, spoke to members regarding Item G 1.1 of the agenda highlighting that the meeting with the City of Surrey had been to introduce Council members following local government elections, and that their status in this process as a stakeholder has to change to one of government-to-government consultation.

In response to questions, the delegation commented on the cumulative effects of the proposed land use on the river, and spoke to consultation as an intergovernmental process.

**5. Deb Jack, President, Surrey Environmental Partners**

Deb Jack, President, Surrey Environmental Partners, spoke in opposition to the proposed amendment presented in Item G 1.1 of the agenda highlighting the City of Surrey report, dated February 14, 2022, contains no reference to the stronger environmental provisions related to *Metro 2050*, no assessment of impacts to the ecological systems and the lack of consultation with Semiahmoo First Nation.

**6. Peter Stepney**

Peter Stepney spoke in opposition to the proposed amendment presented in Item G 1.1 of the agenda, highlighting the discrepancies between the Surrey report, dated February 14, 2022, stating that the water supply and liquid waste system were sufficient to provide services to the proposed development area, which he believes contradicts the information outlined by Water Services.

**7. Kim Stepney**

Kim Stepney spoke in opposition to the proposed amendment presented in Item G 1.1 of the agenda highlighting that the City of Surrey report, dated February 14, 2022, noting that previous concerns regarding the Brookwood Aquifer were not addressed, and that the current liquid waste system cannot keep up with the wet weather sewerage levels.

**8. Brian Coote**

Brian Coote spoke in opposition to the proposed amendment presented in Item G 1.1 of the agenda, highlighting that TransLink was opposed to the proposed amendment, the roads in the area are not designed to adequately support an increase in traffic, and additional work needs to be conducted with the Semiahmoo First Nation.

**9. Christy Juteau, Director, A Rocha Canada**

Christy Juteau, Director, A Rocha Canada, spoke in opposition to the proposed amendment presented in Item G 1.1 of the agenda highlighting it is misaligned with *Metro 2050* goals, and she believes that the City of Surrey has not addressed the concerns raised by members at the January Board meeting.

**10. Christine Bishop**

Christine Bishop spoke in opposition to the proposed amendment presented in Item G 1.1 of the agenda highlighting that concerns raised by members of public and Semiahmoo First Nation were not answered by the City of Surrey staff.

**11. Deborah Carlson, Staff Lawyer, West Coast Environmental Law**

Deborah Carlson, Staff Lawyer, West Coast Environmental Law, spoke in opposition to the proposed amendment presented in Item G 1.1 of the agenda,

outlining the cumulative adverse environmental effects on the area and the lack of consultation with Semiahmoo First Nation.

**12. Sofi Hindmarch, Wildlife Biologist**

Sofi Hindmarch, Wildlife Biologist, spoke to members regarding the proposed amendment as presented in Item G 1.1 of the agenda, outlining concerns about the wastewater management in the South Campbell Heights area, noting the recent overflow incidents, and the devastating effects the proposed development may cause in the area.

**13. Sarah Rush**

Sarah Rush spoke in opposition to the proposed amendment as presented in Item G 1.1 of the agenda, highlighting the need to protect the agricultural land and promote food production to reduce the negative environmental impacts in the area.

**Agenda Order Varied**

Members requested consideration be given to Item G1.1 Regional Growth Strategy Amendment Bylaw No. 1328 – South Campbell Heights, City of Surrey – Additional Information, at this point.

**It was MOVED and SECONDED**

That the MVRD Board vary the agenda order to consider Item G1.1 Regional Growth Strategy Amendment Bylaw No. 1328 – South Campbell Heights, City of Surrey – Additional Information at this point.

**CARRIED**

**Recess**

The Board recessed at 10:52 a.m. and reconvened at 11:04 a.m. with the same members being in attendance.

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

**1.1 Regional Growth Strategy Amendment Bylaw No. 1328 – South Campbell Heights, City of Surrey – Additional Information**

Report dated February 16, 2022, from Chris Plagnol, Director/Corporate Officer, Board and Information Services, and Heather McNell, General Manager, Regional Planning and Housing Services, reporting back to the MVRD Board with additional information from the City of Surrey and seeking final adoption of *Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1328, 2021*.



**It was MOVED and SECONDED**

That the MVRD Board:

- a) receive for information the report dated February 16, 2022, titled “Regional Growth Strategy Amendment Bylaw No. 1328 – South Campbell Heights, City of Surrey – Additional Information”; and
- b) receive for information the comments from affected local governments and agencies as presented in the report dated January 17, 2022, titled “Regional Growth Strategy Amendment Bylaw No. 1328 – South Campbell Heights, City of Surrey”.

**CARRIED**

**It was MOVED and SECONDED**

That the MVRD Board pass and finally adopt *Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1328, 2021*.

Members requested legal advice related to the bylaw process.

**Resolution to Close Meeting**

**It was MOVED and SECONDED**

That the MVRD Board close its regular meeting scheduled for February 25, 2022 pursuant to the *Community Charter* provisions, Section 90 (1) (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:
- (i) the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose.”

**CARRIED**

**Adjournment**

The MVRD Board adjourned its open meeting of February 25, 2022 to convene a closed meeting at 11:20 a.m.

**Reconvene**

The MVRD Board reconvened its regular meeting of February 23, 2022 at 11:55 a.m. with the same members being in attendance.

**Agenda Order Resumed**

The order of the agenda resumed with the following motion being before the Board:

*That the MVRD Board pass and finally adopt Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1328, 2021.*

Members discussed the importance of First Nation engagement in the early stages of development, expressed concerns regarding the lack of engagement with Semiahmoo First Nation and addressed the need for more environmental studies in the proposed development area.

**Deferral Motion****It was MOVED and SECONDED**

That the MVRD Board defer consideration of the following motion:

*That the MVRD Board pass and finally adopt Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1328, 2021.*

**Recorded Vote**

A member requested a recorded vote on the Motion be conducted.

Name	Number of Votes	
	For	Against
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
Jeannie Kanakos		3
Gayle Martin		2
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	

<b>Name</b>	<b>For</b>	<b>Against</b>
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>47</b>	<b>87</b>

**DEFEATED**

#### **Vote on the Motion**

A member requested the Chair call the question on the Main Motion.

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

That the MVRD Board call the question on the Main Motion.

**CARRIED**

Question then was called on the Main Motion as follows:

*“That the MVRD Board pass and finally adopt Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1328, 2021.”*

#### **Recorded Vote**

At the request of a member, a recorded vote on the Main Motion was conducted.

<b>Name</b>	<b>Number of Votes</b>	
	<b>For</b>	<b>Against</b>
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

<b>Name</b>	<b>For</b>	<b>Against</b>
George Harvie	3	
David Hocking		1
Craig Hodge	3	
Mike Hurley	4	
Jeannie Kanakos	3	
Gayle Martin		2
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>69</b>	<b>65</b>
<b><u>CARRIED</u></b>		

**D. INVITED PRESENTATIONS**

No items presented.

12:55 p.m.

**Board Meeting Extension**

Members were advised that the Board meeting was nearing four hours in session from the time the meeting had been convened, and would be deemed adjourned unless the Board resolved to extend the meeting.

**It was MOVED and SECONDED**

That the MVRD Board extend its meeting of February 25, 2022 beyond four hours pursuant to the *Procedure Bylaw*.

**CARRIED**

**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:

1.1 Board Meeting Start Time

- 3.1 Metro 2050 Next Steps: Addressing Member Jurisdiction Comments and Climate Policy
- 2.1 Development Variance Permit – 6 Strachan Point Road
- 4.2 Alignment between MoveUP Proposal and Metro Vancouver Climate 2050 Buildings Roadmap

**It was MOVED and SECONDED**

That the MVRD Board adopt the recommendations presented in the following items as presented in the February 25, 2022 MVRD Board Consent Agenda:

- 2.2 Barnston Island Dike Upgrades – Request to Province
- 3.2 Regional Land Use Assessment – Scope of Work
- 3.3 Regional Industrial Lands Strategy Implementation – Impacts of E-Commerce on Industrial Land and Transportation Systems – Scope of Work
- 3.4 Housing and Transportation Cost Burden Study Update – Scope of Work
- 3.5 Regional Hazard, Risk, and Vulnerability Data Inventory – Scope of Work
- 4.1 2022 Regional District Sustainability Innovation Fund Applications
- 4.3 Metro Vancouver Application to Intervene in the BC Utilities Commission Proceeding Related to FortisBC Energy Inc.'s Revised Renewable Natural Gas Program
- 5.1 Invest Vancouver 2022 Annual Plan
- 5.2 2022 CanExport Community Investment Grant Award
- 5.3 Preliminary Industry Cluster Mapping

**CARRIED**

The items and recommendations referred to above are as follows:

**2.2 Barnston Island Dike Upgrades – Request to Province**

Report dated February 4, 2022, from the Electoral Area Committee, together with the report dated January 17, 2022 from Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services, Regional Planning and Housing Services, providing the MVRD Board with information related to recent electrical upgrades to the Barnston Island pump house and the opportunity to consider sending a letter to the Province requesting they lead efforts to upgrade Barnston Island dike infrastructure.

*Recommendation:*

That the MVRD Board write a letter to the BC Minister of Public Safety requesting that the Province assess, fund, and coordinate upgrades to Barnston Island dike infrastructure as soon as possible given the increasing risks and impacts of climate change.

*Adopted on Consent*

**3.2 Regional Land Use Assessment – Scope of Work**

Report dated January 21, 2022, from Eric Aderneck, Senior Planner, Regional Planning and Housing Services, providing the MVRD Board with the Regional Land Use Assessment Scope of Work.

*Recommendation:*

That the MVRD Board receive for information the report dated January 21, 2022, titled “Regional Land Use Assessment – Scope of Work”.

*Adopted on Consent*

**3.3 Regional Industrial Lands Strategy Implementation – Impacts of E-Commerce on Industrial Land and Transportation Systems – Scope of Work**

Report dated January 21, 2022, from Eric Aderneck, Senior Planner, Regional Planning and Housing Services, providing the MVRD Board with an opportunity to review the scope of work for the Impacts of E-Commerce on Industrial Land and Transportation Systems Project.

*Recommendation:*

That the MVRD Board receive for information the report dated January 21, 2022, titled “Regional Industrial Lands Strategy Implementation - Impacts of E-Commerce on Industrial Land and Transportation Systems - Scope of Work”.

*Adopted on Consent*

**3.4 Housing and Transportation Cost Burden Study Update – Scope of Work**

Report dated January 24, 2022, from Mark Seinen, Senior Planner, Regional Planning and Housing Services, advising the MVRD Board of the objectives, scope, and timeline of updating the Housing and Transportation Cost Burden Study.

*Recommendation:*

That the MVRD Board receive for information the report dated January 24, 2022, titled “Housing and Transportation Cost Burden Study Update – Scope of Work”.

*Adopted on Consent*

**3.5 Regional Hazard, Risk, and Vulnerability Data Inventory – Scope of Work**

Report dated January 18, 2022, from Edward Nichol, Regional Planner, Regional Planning and Housing Services, providing the MVRD Board with an overview of the planned work to develop a regional hazard, risk and vulnerability data inventory.

*Recommendation:*

That the MVRD Board receive for information the report dated January 18, 2022, titled “Regional Hazard, Risk, and Vulnerability Data Inventory – Scope of Work”.

*Adopted on Consent*

**4.1 2022 Regional District Sustainability Innovation Fund Applications**

Report dated January 10, 2022, from Roger Quan, Air Quality and Climate Change, Parks and Environment, presenting the MVRD Board with eight Sustainability Innovation Funding projects for the Board’s consideration.

*Recommendation:*

That the MVRD Board approve the allocation from the Regional District Sustainability

Innovation Fund for the following projects:

- a) Showcasing Innovation in Alternative Powered Park Operations and Maintenance Equipment to Reduce Emissions: \$35,000 in 2022;
- b) Social and Community Data Model – Phase 2: \$180,000 over two years starting in 2022;
- c) Net Zero Water Technology Accelerator: \$175,000 over two years starting in 2022;
- d) Integrating greenhouse gases requirements into air emission permits and regulations: \$150,000 over two years starting in 2022;
- e) Taking out the Trash: Transitioning to Zero-Carbon Heavy Duty Vehicles through Waste Collection Trucks: \$400,000 over three years starting in 2022;
- f) Metro Vancouver Large Building Retrofit Accelerator: \$850,000 over three years starting in 2022;
- g) Driving Down Emissions: Working with Key Partners to Develop a Regional Pathway to Accelerate Transportation Emission Reductions: \$455,000 over two years starting in 2022; and
- h) Smart Cities: Hyperlocal Air Quality Monitoring: \$250,000 over two years starting in 2022.

*Adopted on Consent*

**4.3 Metro Vancouver Application to Intervene in the BC Utilities Commission Proceeding Related to FortisBC Energy Inc.’s Revised Renewable Natural Gas Program**

Report dated February 14, 2022, from Roger Quan, Director, Air Quality and Climate Change, and Neal Carley, General Manager, Parks and Environment, providing the MVRD Board with information regarding Metro Vancouver’s application as an intervenor in the BC Utilities Commission (BCUC) proceeding related to FortisBC Energy Inc.’s (FortisBC) proposed revisions to their renewable natural gas program.

*Recommendation:*

That the MVRD Board receive for information the report dated February 14, 2022, titled “Metro Vancouver Application to Intervene in the BC Utilities Commission Proceeding Related to FortisBC Energy Inc.’s Revised Renewable Natural Gas Program”.

*Adopted on Consent*

**5.1 Invest Vancouver 2022 Annual Plan**

Report dated January 28, 2022, from David Flaks, President, Invest Vancouver and Jacquie Griffiths, Executive Vice President, Invest Vancouver, providing the MVRD Board with information on Invest Vancouver’s staff’s 2022 Annual Plan outlining key goals and objectives for the year.

*Recommendation:*

That the MVRD Board receive for information the report dated January 28, 2022, titled "Invest Vancouver 2022 Annual Plan".

*Adopted on Consent*

**5.2 2022 CanExport Community Investment Grant Award**

Report dated January 20, 2022, from Katie Fitzmaurice, Vice President, Collaboration, Invest Vancouver and Chris Heine, Vice President, Strategic Investment, Invest Vancouver, providing the MVRD Board with information related to the 2022 CanExport Community Invest Grant Award.

*Recommendation:*

That the MVRD Board receive for information the report dated January 20, 2022 titled "2022 CanExport Community Investment Grant Award".

*Adopted on Consent*

**5.3 Preliminary Industry Cluster Mapping**

Report dated January 17, 2022, from Megan Gerrys, Senior Policy Advisor, Invest Vancouver and Gregory Freeman, Senior Economist, Invest Vancouver, presenting the MVRD Board with the preliminary industry cluster mapping, scope, scale, and regional distribution of each of Invest Vancouver's selected industry clusters.

*Recommendation:*

That the MVRD Board receive for information the report dated January 17, 2022, titled "Preliminary Industry Cluster Mapping".

*Adopted on Consent*

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

Items removed from the Consent Agenda for consideration under Section F were considered in numerical order.

**1.1 Board Meeting Start Time**

Report dated February 2, 2022, from the Mayors Committee, together with the report dated January 24, 2022 from Jerry W. Dobrovolny, Chief Administrative Officer/Commissioner, updating the MVRD Board on survey results regarding the start time for board meetings.

1:02 p.m. Director Walker departed the meeting.

Members commented on the value of modifying the meeting start time.

1:04 p.m. Director Nagra departed the meeting.



**It was MOVED and SECONDED**

That the MVRD Board receive for information the report dated January 24, 2022, titled "Board Meeting Start Time" and recommend a 9:15 a.m. start time for the remainder of 2022 Board and Standing Committee meetings.

**CARRIED**

**It was MOVED and SECONDED**

That the MVRD Board request staff to conduct comprehensive review of the Metro Vancouver Regional District Procedure Bylaw and report back with suggested changes.

**CARRIED**

1:07 p.m. Director Calendino departed the meeting.

**2.1 Development Variance Permit – 6 Strachan Point Road**

Report dated January 10, 2022, from Tom Pearce, Regional Planner, Regional Planning and Housing Services, providing the MVRD Board the opportunity to consider authorizing the issuance of a development variance permit in relation to an accessory building at 6 Strachan Point Road, in the Electoral Area A Howe Sound mainland community of Strachan Point.

**It was MOVED and SECONDED**

That the MVRD Board authorize the issuance of a development variance permit in relation to an accessory building at 6 Strachan Point Road (PID: 008-667-217) that varies the *Electoral Area A Zoning Bylaw* by:

- a) increasing the maximum accessory building height allowed in Section 314(2) from 4.5 metres to 8 metres; and
- b) reducing the building setback of the westerly boundary of the BC Rail right-of-way required in Section 314(3)(b) from 4.5 metres to 1.8 metres, subject to approval by the Ministry of Transportation and Infrastructure.

**CARRIED**

1:08 p.m. Vice Chair Buchanan departed the meeting.

**3.1 Metro 2050 Next Steps: Addressing Member Jurisdiction Comments and Climate Policy**

Report dated February 4, 2022, from Heather McNell, General Manager, Regional Planning and Housing Services, providing the MVRD Board with a summary of climate policies in *Metro 2050*, information on *how Metro 2050, Transport 2050* and *Climate 2050* work together, and steps being undertaken to respond to the Board's direction.

**It was MOVED and SECONDED**

That the MVRD Board receive for information the report dated February 4, 2022, titled “*Metro 2050 Next Steps: Addressing Member Jurisdiction Comments and Climate Policy*”.

**CARRIED**

**4.2 Alignment between MoveUP Proposal and Metro Vancouver Climate 2050 Buildings Roadmap**

Report dated January 27, 2022, from Nav Hundle, Senior Policy and Planning Analyst, and Jason Emmert, Program Manager, Climate Policy, Parks and Environment, providing the MVRD Board with an analysis of the proposal from MoveUp and its alignment with the *Climate 2050 Building Roadmap*, as directed by the Climate Action Committee.

**It was MOVED and SECONDED**

That the MVRD Board direct staff to engage with the Canadian Office and Professional Employees Union (MoveUP) as part of the implementation of the *Climate 2050 Buildings Roadmap*, to seek opportunities for collaboration related to their proposal titled “Capitalizing on Retrofitting Opportunities for Greenhouse Gas Emissions Reductions and Job Creation”.

**CARRIED**

1:12 p.m. Director Morden departed the meeting.

**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 25, 2022.

**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 25, 2022 pursuant to the *Community Charter* provisions, Section 90 (1) (e) and 90 (2) (b) 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:

(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; and

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

(b) the consideration of information received and held in confidence relating to negotiations between the regional district and a provincial government or the federal government or both, or between a provincial government or the federal government or both and a third party.”

**CARRIED**

**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 25, 2022.

**CARRIED**

(Time: 1:13 p.m.)

CERTIFIED CORRECT

\_\_\_\_\_  
Chris Plagnol, Corporate Officer

\_\_\_\_\_  
Sav Dhaliwal, Chair

51049851 FINAL

2022-03-22

Metro Vancouver Regional Growth Strategy  
 Application: Delegation to MV Board  
 VCH Healthy Environments & Population Health Teams

<b>Board to address</b>	MVRD	<b>Date</b>	March 25, 2022
<b>Applicant</b>	Laura Chow	<a href="mailto:laura.chow@vch.ca">laura.chow@vch.ca</a>	604-675-3830
<b>Report we wish to speak to</b>	Metro 2050 – Regional Growth Strategy		
<b>Designated speaker</b>	Dr. Mark Lysyshyn, Deputy Medical Health Officer, Vancouver Coastal Health		

**How interests are affected by a report on the agenda:**

Our health and well-being are significantly impacted by the environments in which we live, learn, work, and play. We know that the policies that dictate land use not only influence our day-to-day decisions and behaviours on how we travel, what we eat and consume, who and how we socialize, but they also determine our environmental exposure to noise and air pollution, and our access to services and amenities that allow us to thrive.

Vancouver Coastal Health (VCH) sees Metro Vancouver's Regional Growth Strategy as a fundamental document that will enable the development of healthier, more sustainable, and resilient communities across the region.

**Specific action requested:**

- To give first and second readings to *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2002*, a bylaw that would adopt *Metro 2050* as the regional growth strategy for Metro Vancouver
- Refer *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2002*, to a Public Hearing to be held in April, 2022

**Presentation summary:**

Vancouver Coastal Health (VCH) will present its support for Metro 2050 – Regional Growth Strategy, and encourage approval of first and second readings, enabling the process to continue forward.

Land use policies have significant influence on our health and well-being. Land use patterns dictate how we travel, what we eat and consume, and who and how we socialize. They also influence our environmental exposure to noise and air pollution, as well as dictate our access to services and amenities necessary for life and those that allow us to thrive. VCH sees the Regional Growth Strategy as a fundamental document that will enable the development of healthier, more sustainable, and resilient communities across the region.

All five of Metro 2050's goals support VCH's broader public health goals. They align with a number of practices that support environments that foster healthy communities and healthy behaviours. For example:

- Goal 1: Create a Compact Urban Area, enables the creation of complete, compact, and connected communities that allow residents to meet their daily needs using active transportation, rather than relying on fossil fuel powered vehicles, and they allow us to enhance our social connections.

- Goal 2: Support a Sustainable Economy discusses the very real challenges of land scarcity and services necessary for healthy living and well-being. Addressing our industrial and agricultural needs helps ensure that individuals can live closer to where they work, and helps protect our much needed agricultural land to improve our local food security.
- Climate change presents a significant threat to public health, and VCH recognizes the need to take action now to both mitigate greenhouse gas emissions and adapt to the anticipated changes. Goal 3: Protect the Environment, Address Climate Change, and Respond to Natural Hazards identifies key connections needed to help the region reach its climate targets.
- Goal 4: Provide Diverse and Affordable Housing Choices addresses one of the most talked about challenges of the region. Housing availability and affordability play a significant role in our health and well-being. The more money that individuals must pay for shelter is less money available for other essential items like healthy food, and transportation.
- Goal 5: Support Sustainable Transportation Choices serves a dual purpose. Not only does it help reduce our greenhouse gas emissions, but it also helps individuals take modes of transportation that also increase opportunities to engage in physical activity.

Metro 2050 builds on the successes of Metro 2040, but it also works to address some key health-affecting challenges that have pressured the region over the last decade. Though many of these issues existed in the creation of Metro 2040, it's important to note that Metro 2050 has worked to be more explicit on these issues, including:

- Intentional consideration of Metro 2050's policy implications to the region's most vulnerable populations
- Explicit actions needed to address climate change, recognizing that some areas will need further measures to be resilient to climate hazards
- Explicit housing goal, identifying that lower income households are struggling to live in areas that support Metro 2050's other goals (e.g. compact communities) because of housing costs

Over the course of the last three to four years, Metro Vancouver's strategic consultation with VCH has strengthened our existing working rapport and have built a positive collaborative relationship. We engaged with Metro Vancouver staff throughout the development of Metro 2050, contributing health evidence, data, and perspective where possible. VCH supports Metro 2050 and acknowledges that though we can always do better, Metro 2050 already enables more action on key areas of concern than was presented in Metro 2040. We look forward to continuing our collaboration as Metro 2050 is implemented.

<b>To: Metro Vancouver Regional District Board of Directors,</b> C/O Board and Information Services, #4730 Kingsway, Burnaby, BC, Canada, V5H 0C6, delegations@metrovancover.org gvrddsec@metrovancover.org 604-432-6250, 604.432.6284	<b>From: Mr Roderick V. Louis,</b> [REDACTED] White Rock, BC, Canada, [REDACTED] [REDACTED] [REDACTED]
--	---

March 22-2022

2-pages;

Pls regard this as a request to appear before the MV RD Board at its March 25-2022 meeting:

<http://www.metrovancover.org/boards/search/Pages/default.aspx>  
[http://www.metrovancover.org/boards/GVRD/RD\\_2022-Mar-25\\_AGE.pdf](http://www.metrovancover.org/boards/GVRD/RD_2022-Mar-25_AGE.pdf)

The Item I would like to speak to is **G 1.1 “Consideration of Metro Vancouver Regional District Regional Growth Strategy, Bylaw No. 1339, 2022, a bylaw to adopt Metro 2050**

I own property and pay taxes in the City of White Rock, and as such am affected by whatever decisions are made regarding long term urban, transportation and economic development planning for the region...

As part of my proposed submissions re the G 1.1 report, I would request the MV GVRD Board takes the following action- and passes an amended version of the staff-recommended motion:

***That the MVRD Board:***

***a) give first and second readings to Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022, a bylaw that would adopt Metro 2050 as the regional growth strategy for Metro Vancouver;***

***b) refer Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022, to a Public Hearing to be held in April \_\_\_, 2022; and***

***c) direct staff to expeditiously complete draft amendments to Metro 2050 (post-adoption) that identify and recommend routes of to-be-built rapid-transit lines that would connect MV’s “South of Fraser” sub-region’s existing- and potential new and upgraded- Urban Centers, Town Centres & Commerce Hubs with each other, and with the “North of Fraser” sub-region’s extensive network of 4 SkyTrain lines;***

**Background:**

Unlike the **Metro Vancouver 2040 Regional Growth Strategy** document:

<http://www.metrovancover.org/services/regional-planning/PlanningPublications/RGSAdoptedbyGVRDBoard.pdf> (page 52 (58 in Acrobat Reader)

...the draft **Metro Vancouver 2050 Regional Growth Strategy** document is silent re the need for rail rapid-transit (and other types of rapid transit) lines to be built.. to connect the region's- and especially the “South of Fraser” sub-region’s- existing and potential new Urban Centres, Town Centres and Commerce Hubs..

Also, section **“E” Goals, Strategies & Actions** of MV 2050 (pages 25 to 40) is deficient in that:

a) It does not require MV municipalities that share borders with each other to collaboratively identify, implement, and regularly report on “joint economic development strategies” and actions;

b) In situations where an Urban Centre, Town Centre, Commerce Hub or Regional City Centre are located within the borders of two or more municipalities, MV 2050 does not require such municipalities to collaborate with each other in the economic development and other planning of such “shared” Urban Centres/ Town Centres/ Commerce Hubs

c) it does not require MV municipalities that share borders with each other to collaboratively plan and regularly jointly report on public transportation and Urban Centre/ Town Centre development planning, strategies and outcomes;

Page 33 of MV 2050 states:

***"1.2.24 Member Jurisdictions will:***

*"Adopt Regional Context Statements that:*

*"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...."*

In my opinion, 1.2.24 should be amended to read:

***"1.2.24 Member Jurisdictions will:***

*"Adopt Regional Context Statements that:*

*"f) require long-term growth and transportation planning coordination with adjacent municipalities, First Nations, TransLink, and Metro Vancouver for:*

*"i) transit corridors that run through or along two or more adjacent jurisdictions;*

*"ii) Urban Centres, Town Centres Regional City Centres & Commerce Hubs that are located in two or more adjacent jurisdictions;"*

I intend to provide a very brief PowerPoint “Executive Summary” of my proposed submissions before end of business on March 24-2022...

As soon as convenient, Pls confirm receipt of this email...

Sincerely,

Mr Roderick Louis,  
Alternative email:

[REDACTED]  
[REDACTED]

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To: Climate Action Committee

From: Sheryl Cumming, Project Engineer  
Jason Emmert, Program Manager, Climate Policy  
Parks and Environment Department

Date: February 17, 2022 Meeting Date: March 11, 2022

Subject: **Draft Climate 2050 Industry and Business Roadmap**

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**RECOMMENDATION**

That the MVRD Board direct staff to proceed with engagement on the draft *Climate 2050 Industry and Business Roadmap*, as presented in the report dated February 17, 2022, titled “Draft *Climate 2050 Industry and Business Roadmap*”.

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**EXECUTIVE SUMMARY**

The draft *Climate 2050 Industry and Business Roadmap* is the next in a series of ten *Roadmaps* that will guide the region’s policies and collective actions to transition to a carbon neutral, resilient region by 2050. The draft *Climate 2050 Industry and Business Roadmap* lays out the goals, targets, strategies and actions for reducing greenhouse gas emissions and increasing climate resilience in industry and business sectors. Staff will gather feedback on the draft *Industry and Business Roadmap* during an engagement period, with the intent of bringing an updated *Roadmap* for endorsement by the MVRD Board in 2022. The 2030 targets and greenhouse gas reduction actions in the *Roadmap* were adopted in the *Clean Air Plan*. Therefore, this engagement period will focus on the 2050 goals and targets, climate resilience strategies and actions, and the implementation process for actions.

**PURPOSE**

To seek MVRD Board direction to proceed with engagement on the draft *Climate 2050 Industry and Business Roadmap*.

**BACKGROUND**

The MVRD Board adopted the *Climate 2050 Strategic Framework* and directed staff to begin the development process of ten *Climate 2050 Roadmaps*. In 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 presents the draft *Climate 2050 Industry and Business Roadmap* (see Attachment), and provides information on the approach to engagement to gather feedback on this draft, leading to a finalized roadmap later in the year.

**CLIMATE 2050**

*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. *Climate 2050* is being implemented 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*, adopted in 2021.

*Climate 2050 Roadmaps*, including the *Climate 2050 Industry and Business Roadmap*, are intended to be “living, breathing” documents that chart the path to achieving the region’s climate goals and targets. The strategic areas and actions will be updated dynamically, responding to changes in policy, technology, science, opportunities and innovations, and performance measures and indicators. In coming years, staff will continue to work with businesses, residents, and governments to implement and expand these actions to accelerate the transition to a climate resilient and carbon neutral region.

### ***Climate 2050 Roadmaps, Clean Air Plan and Metro 2050***

Approved on September 24, 2021 by the MVRD Board, the *Clean Air Plan* is Metro Vancouver's fourth 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. Greenhouse gas reduction goals, targets, and actions in the *Industry and Business Roadmap* reflect those already approved in the *Clean Air Plan*. The *Climate 2050 Industry and Business Roadmap* also references the goals, targets, strategies and actions in *Climate 2050 Buildings and Transportation Roadmaps* that are related to commercial activities. These *Roadmaps* were endorsed by the MVRD Board in 2021.

Metro Vancouver, in partnership with its member jurisdictions, implements the regional growth strategy to manage the anticipated growth in the region over the next 30 years. The regional growth strategy is currently being updated, and the draft *Metro 2050* further advances our shared regional objectives for a healthy, sustainable and prosperous region. This is done in large part through the effective coordination of land use and transportation planning, and the use of six regional land use designations and policies that identify and protect the region’s employment and industrial lands. Climate policies and actions related to Industrial and Employment lands are part of the update to *Metro 2050* and will be part of the scope of the *Climate 2050 Land Use and Growth Management Roadmap*, currently under development.

### **DRAFT CLIMATE 2050 INDUSTRY AND BUSINESS ROADMAP**

The *Climate 2050 Industry and Business Roadmap* supports the vision and presents a policy action plan that will contribute to a carbon neutral and climate resilient region. In addition to outlining the challenges and benefits of implementing climate action for industry and business, the draft *Climate 2050 Industry and Business Roadmap* lays out 28 actions for reducing emissions and increasing climate resilience, organized under the following 8 strategic areas:

1. Accelerate Emissions Reduction from Industrial Facilities
2. Reduce Non-Road Emissions and Support Early Adoption of Zero Emission Non-Road Equipment
3. Explore Opportunities for Technological Carbon Capture
4. Reduce Greenhouse Gas Emissions through Procurement and other Business Practices
5. Assess Climate Vulnerabilities for Businesses in the Region
6. Support Industry and Business Resilience to Flooding through Better Information and Planning
7. Improve Business Resilience to Extreme Heat and Air Quality Events
8. Support Water Conservation to Increase Resilience to Shifting Precipitation Patterns

The *Industry and Business Roadmap* proposes an implementation timeline to encourage swift early action on key issues. With short timelines and ambitious targets, staff have continued to work with all orders of government and other partners to maintain an action focus while planning and developing the *Roadmap*.

### **Reducing Greenhouse Gas Emissions from Industry and Business**

Industry and Business account for approximately 48% of the total GHG emissions in the region, including from sources such as industrial facilities, non-road equipment, commercial transportation, and commercial buildings. In addition to the goals and 2030 targets approved in the *Clean Air Plan* and 2050 targets in the *Climate 2050 Buildings and Transportation Roadmaps*, the draft *Industry and Business Roadmap* includes the following 2050 goal and targets for GHG emission reduction:

**Long-term Goal:** Industry and Business is carbon neutral by 2050.

#### **2050 Targets:**

- All industrial facilities are carbon neutral.
- 100% reduction in greenhouse gas emissions from non-road engines

Reaching the 2030 targets, and transitioning to a carbon neutral region by 2050 will depend on adoption of new technologies and business practices in part driven by strong climate policy. Initial modelling of actions in this Roadmap indicates they could achieve significant emissions reductions while also indicating that a gap remains between the modelled results and the targets. More work will need to be done to understand how to maximize the effectiveness of the actions and identify additional actions to reach the region's 2030 and 2050 climate targets.

### **Climate Resilience for Industry and Business**

Metro Vancouver's network of communities, businesses, workers and customers are already experiencing climate-influenced events, including extreme heat events, forest fires, and extensive flooding. To increase climate resilience of businesses in the region, businesses and government need to understand how the projected climate changes will impact individual businesses and entire business sectors. The draft *Industry and Business Roadmap* includes the following goal and targets for climate resilience:

**Long-term Goal:** The region's industries and businesses are resilient to the current and future impacts of climate change.

#### **Targets:**

- By 2030, All industrial facilities have identified existing, unmitigated climate hazards that could impact their operations and supply chains.
- By 2050, All industries and businesses are resilient to current and future impacts of climate hazards.

The *Climate 2050 Industry and Business Roadmap* includes climate resilience strategies and actions aimed at improving available climate information, setting standards, and coordinating planning so industry and businesses are better able to respond to climatic events that can disrupt and impact business operations, facilities, and supply chains.

## ENGAGEMENT PROCESS

The goals, strategies and actions in the draft Industry and Business Roadmap incorporate public and stakeholder feedback received through engagement processes for the *Climate 2050 Industry* discussion paper in early 2020 (see Reference), and for the *Clean Air Plan*, respectively. A summary report on the *Clean Air Plan* engagement was received by the Climate Action Committee on November 13, 2020.

Staff will seek feedback and recommendations for revisions on this draft Roadmap from those most likely to be impacted or have a role in implementation. This includes but is not limited to; industry and business stakeholders, other governments, including First Nations, and organizations with a responsibility for implementation. Information and opportunities to provide feedback are also shared with the broader public. The engagement will reflect the Board Policy on Public Engagement and an ongoing commitment to engagement throughout the development of *Climate 2050*.

It is important to note that the GHG reduction actions in the *Climate 2050 Industry and Business Roadmap* are already approved for implementation through the *Clean Air Plan* adoption. Therefore, engagement will highlight the climate resilience actions, and for the mitigation actions, will largely focus on considerations for implementation. A robust database of the audiences listed above was developed for the *Clean Air Plan* and will be expanded to reflect the focus on this engagement.

During the Clean Air Plan engagement, many industry representatives requested Metro Vancouver convene a dialogue across industrial sectors to discuss implementation, citing interest in, as examples: phasing, opportunities to hear from other governments, and shared interest in new technologies. Staff will pursue that opportunity, in particular as Metro Vancouver advances actions requiring new or revised policy and regulation.

## ALTERNATIVES

1. That the MVRD Board direct staff to proceed with engagement on the draft *Climate 2050 Industry and Business Roadmap*, as presented in the report dated February 17, 2022, titled “Draft *Climate 2050 Industry and Business Roadmap*”.
2. That the MVRD Board receive for information the report dated February 17, 2022, titled “Draft *Climate 2050 Industry and Business 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 2022, including staff time and consulting expenditures. Funding for enhanced engagement on *Climate 2050* from the Sustainability Innovation Fund has been approved by the MVRD Board and will be used to support engagement activities on the development and implementation of the *Climate 2050 Roadmaps*. Continued alignment of engagement activities and deliverables for the *Climate 2050 Roadmaps* with the development of the *Clean Air Plan* and other management plans 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 *Industry and Business Roadmap* lays out strategies and actions to transition industries and businesses to reach carbon neutrality and to be resilient to climate change by 2050. If authorized by the Board, Metro Vancouver intends to seek feedback on the draft *Industry and Business Roadmap* from the industry and business stakeholders, other governments, including First Nations, and agencies of organizations with a responsibility in implementation, as well as the broader public.

Staff recommend Alternative 1: for the Board to authorize staff to proceed with public engagement on the draft *Climate 2050 Industry and Business Roadmap*. Engagement will focus on the climate resilience actions, as well as implementation of the greenhouse gas reduction actions that are already included in the Board-adopted *Clean Air Plan*. Feedback from engagement will inform the development of a final *Industry and Business Roadmap* for Committee and Board consideration, planned for 2022.

## **Attachment**

*Climate 2050 Industry and Business Roadmap*, draft dated February 2022 (45038945)

## **Reference**

[\*Climate 2050 and Clean Air Plan Discussion Paper on Industry\*](#), report dated September 20, 2019

45694940





## CLIMATE 2050 Roadmap

# Industry & Business

A pathway to a carbon neutral, climate resilient regional economy

February 2022

DRAFT

FRONT COVER: [PHOTO CAPTION]  
PHOTO COURTESY OF [CREDIT]

Metrotower III, 4515 Central Boulevard, Burnaby, BC, V5H 0C6  
[www.metrovancouver.org](http://www.metrovancouver.org)  
February 2022

DRAFT

**Metro Vancouver acknowledges that the region’s residents live, work and learn on the shared territories of many Indigenous peoples, including 10 local First Nations: Katzie, Kwantlen, Kwikwetlem, Matsqui, Musqueam, Qayqayt, Semiahmoo, Squamish, Tsawwassen, and Tsleil-Waututh.**

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

DRAFT

## **Your input is valued.**

This Roadmap was drafted in late 2021/early 2022, based on feedback received from a broad range of industry and business groups, organizations and stakeholder groups between 2019 and 2021. Engagement was centred around the Metro Vancouver *Industry Discussion Paper* to support *Climate 2050*, introduced for public and stakeholder comment in late 2019.

Feedback is valued and project teams will continue to seek input on this draft Roadmap through 2022. This current phase of engagement will include opportunities to provide both feedback on-line and through interactive discussions. We will continue to ensure feedback is reflected as we begin to implement these actions. Feedback to the project team will be posted to the Metro Vancouver website [www.metrovancouver.org](http://www.metrovancouver.org), search “Climate 2050 Industry and Business Roadmap”.

The goals and targets in Metro Vancouver’s climate-related plans are based in science. The interim target, set in Metro Vancouver’s Clean Air Plan, of reducing greenhouse gas (GHG) emissions in the region by 45% below 2010 levels by 2030 now has a time horizon of less than ten years. But taking bold action now is essential if the region is to attain carbon neutrality by 2050. Across the globe, the pandemic response has revealed a glimpse of what is possible and what we can achieve in a time of crisis, if we establish common goals and pursue coordinated efforts.

The actions in this Roadmap reflects both current policies and new directions that reflect the best ideas, approaches and available technologies. As with all good planning, this Roadmap must be viewed as an iterative, dynamic path forward. The goals will remain clear but the Roadmap will be updated as new policies, ideas, approaches and technologies emerge.



## Metro Vancouver

Underlined words are key concepts defined in the **Glossary** on page XX.

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.

### 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

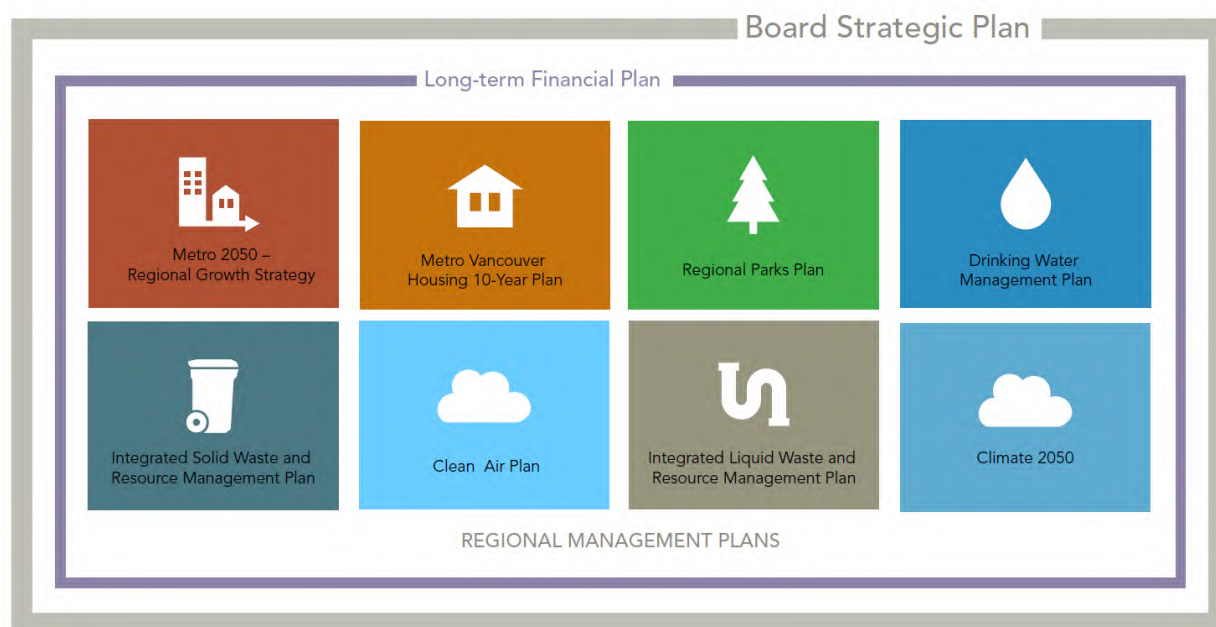
Provide regional utility services related to drinking water, liquid waste and solid waste to members. Provide regional services, including parks and affordable housing, directly to residents and act as the local government for Electoral Area A.

#### 3. Plan for the Region

Carry out planning and regulatory responsibilities related to the three utility services as well as air quality, 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.



## Metro Vancouver's Roles and Responsibilities for Climate Action

The actions to achieve carbon neutrality and building a more resilient region will depend on the collaborative efforts of many players in the region as well as the federal and provincial government. However, Metro Vancouver has some unique and important roles and responsibilities for advancing climate action.

- Under the *Environmental Management Act*, Metro Vancouver has the delegated authority to provide the service of air pollution control and air quality management and may, by bylaw, prohibit, regulate and otherwise control and prevent the discharge of air contaminants, including greenhouse gases.

- Through the regional growth strategy *Metro 2040*, Metro Vancouver, with its members, plans for compact, complete communities that are foundational to enabling a carbon neutral, resilient region.
- As part of delivering its core services, Metro Vancouver also generates and uses clean, renewable energy from its facilities and is working to ensure core regional services and infrastructure are prepared for and resilient to climate change.
- Invest Vancouver is Metro Vancouver's economic development leadership service with the vision of a dynamic and resilient regional economy that delivers prosperity for all. It aims to foster greater regional collaboration on economic development issues, to advise leaders on sound economic policy and strategy, and to brand the region and its key industries to a global audience with the intention of attracting strategic investment. Invest Vancouver focuses on key export oriented industries in which the region has a productive advantage. This includes many aspects of the green economy, including clean technology, renewable energy and clean transportation.
- In its role as a regional forum, Metro Vancouver builds and facilitates collaborative processes which engage the public and build partnerships to address significant regional issues like climate change. As part of this role, Metro Vancouver coordinates with and advocates on behalf of its member jurisdictions to other governments and partners on greenhouse gas management and climate change adaptation initiatives.

These roles are necessary but not sufficient to achieve our goals of a climate neutral, resilient region. Metro Vancouver will be looking to other orders of government, First Nations and other regional partners to lead and collaborate in the implementation of a number of key actions in the *Climate 2050 Roadmaps*.

## The Roadmap at a Glance

This Roadmap is focused on the goals, strategies and actions required for industries and business in the region to reduce greenhouse gas emissions and build climate resilience. Commercial activity in the region generates roughly half of the region's total greenhouse gas emissions. At the same time many businesses are already experiencing impacts and disruptions to their operations and supply chains due to climate change.

This *Climate 2050 Industry and Business Roadmap* identifies the policies and actions for Metro Vancouver and its partners, including businesses, to achieve a carbon neutral and resilient economy by 2050. As part of this transformational change, the strategies for industry and business aim to overcome barriers, address challenges and explore new opportunities (see box below).

The focus of this *Roadmap* is on strategies and actions that will reduce emissions from heavy and light industrial facilities and commercial sectors as well as non-road equipment, (e.g., manufacturing, construction, port and trade activities, food processing). In addition, strategies and actions are included for intensifying low carbon procurement by the public sector, and expanding opportunities for carbon capture, utilization, and storage technologies. Commercial activities related to buildings, transportation, as well as agriculture are covered in other *Climate 2050 Roadmaps* (references to these other Roadmaps can be found throughout the document).

Metro Vancouver, together with its member jurisdictions, has been taking action on climate change for decades. But it has not been enough to achieve the deep reductions in greenhouse gas emissions required and we need to do more to prepare for the impacts climate change is already having on the region. Coordination and collaboration with other levels of government, First Nations, business and industry, and other regional partners will be essential to achieving a carbon neutral and resilient region.

The *Industry and Business Roadmap* lays out actions for reducing emissions and increasing resiliency, organized under the following strategies:

### **Strategies for Achieving Carbon Neutrality in Industry and Business:**

- 1 Accelerate Emissions Reduction from Industrial Facilities
- 2 Reduce Non-Road Emissions and Support Early Adoption of Zero Emission Non-Road Equipment
- 3 Explore Opportunities for Technological Carbon Capture
- 4 Reduce Greenhouse Gas Emissions through Procurement and other Business Practices

### **Strategies for Climate Resilient Industry and Business**

- 5 Assess Climate Vulnerabilities for Businesses in the Region
- 6 Support Industry and Business Resilience to Flooding through Better Planning and Information
- 7 Improve Business Resilience to Extreme Heat and Air Quality Events
- 8 Support Industrial Water Conservation to Increase Resilience to Shifting Precipitation Patterns

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## Visioning a Carbon Neutral and Climate Resilient Regional Economy

**In 2050, our thriving, diverse regional economy is carbon neutral and resilient to climate impacts.** Innovation, creativity, diversity, and carbon neutrality are the characteristics of the Metro Vancouver economy. Businesses operate in zero emissions buildings while people and goods move via zero emissions vehicles and active transportation. Industrial activities have greatly improved energy and material efficiency, shifted to using clean, renewable energy and zero emissions equipment. Through innovation, the region is recognized for advancing innovation in carbon capture, utilization, and storage approaches. Local businesses design and deliver goods and services that are consistent with circular economy principles that generate less waste and minimize emissions of greenhouse gases.

Businesses in the Metro Vancouver region are prepared for and resilient to the impacts of climate change. This is the outcome of a collaborative process to identify climate risks and vulnerabilities to the regional economy and then to develop and implement plans and actions to mitigate the threats from climate change.

The drive to a carbon neutral and resilient region has created the stimulus to make businesses in Metro Vancouver global leaders in the research, development and commercialization of climate solutions. Our low carbon products and expertise in renewable energy, clean transportation, and carbon capture technologies are exported and transferred around the world.



## The Challenge

While transitioning to a carbon neutral, climate resilient region by 2050 presents opportunities and benefits for business in the region, there are also challenges. Decarbonization across the Metro Vancouver region will require nearly all commercial, institutional, and industrial activity to be powered by clean, renewable energy. This will require rapidly expanding the use of clean renewable energy such as electricity and renewable gas, replacement of thousands of vehicles and pieces of equipment across the region, and investing in new technologies to capture the carbon dioxide that is emitted from chemical processes and any remaining fossil fuel use.

Businesses and governments will also need to plan for and make investments to protect the businesses, residents, and workers within our communities from more frequent flooding, extreme heat events, and other climate impacts that are already locked in and unavoidable given past levels of greenhouse gas emissions. The need to simultaneously reduce emissions while taking action to prevent climate impacts will be a stress on businesses.

Through our engagement with industry and business, we have heard concerns about the actual availability of the technologies and products, the cost of transition, and regulatory certainty. Although many options for clean technologies and clean, renewable energy are already available in the market, it is critical to their widespread adoption that they are competitively priced and more widely available. In the case of specialized applications, some leaps in technical innovation are still needed. New technologies and approaches may cost more for businesses, institutions, governments, and residents. How these costs will be shared across society depends, in part, on government regulations.

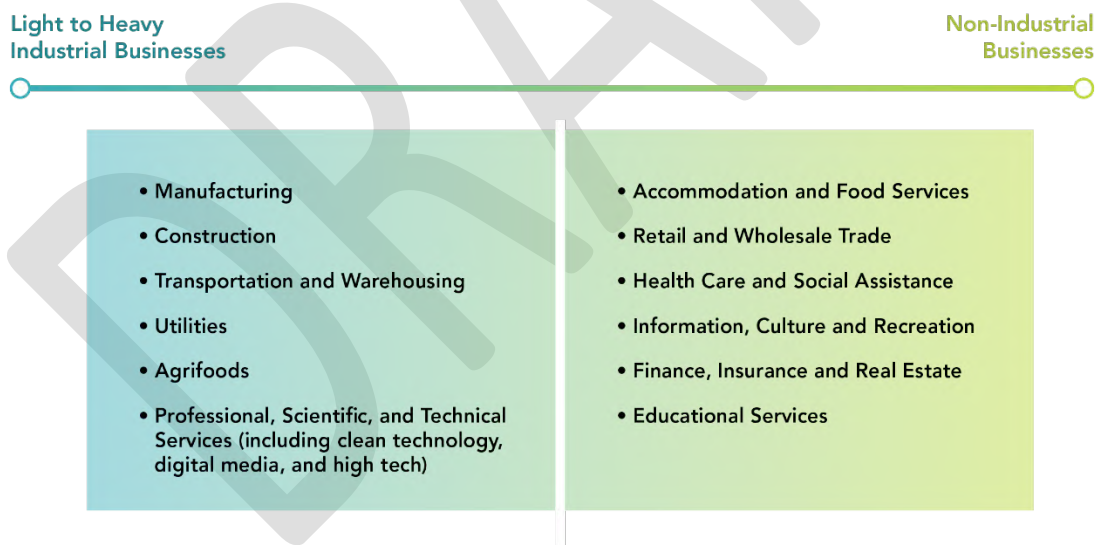
The “Barriers and Opportunities” section of this Roadmap explores the unique circumstances of businesses in moving towards carbon neutrality and climate resiliency.



## Industry and Business in the Metro Vancouver Region

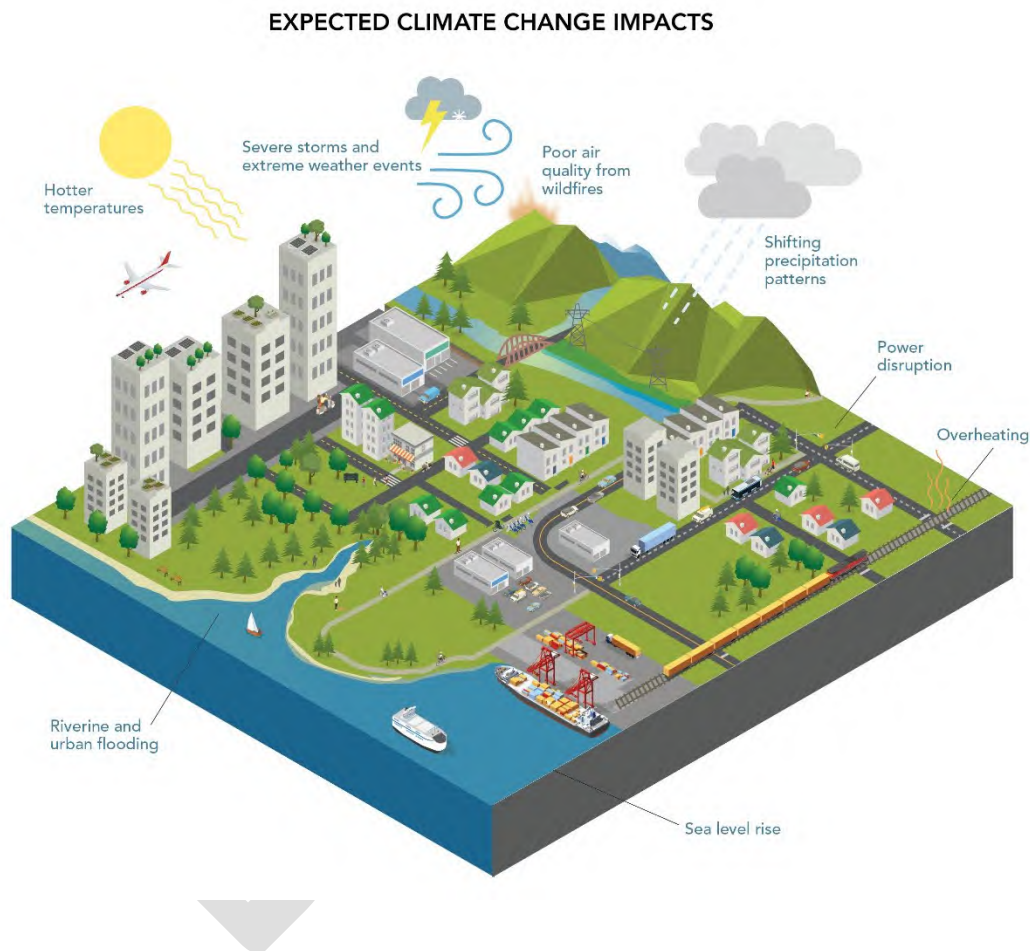
There are more than 100,000 businesses in the Metro Vancouver region, with 1.5 million workers generating GDP in 2019 of \$149 billion. These businesses and their workers account for over half of total employment in British Columbia. The businesses comprise a diverse mix of sectors from manufacturing to educational services that have different greenhouse gas emissions profiles and risks associated with climate change.

The regional economy is changing, reflecting the dynamics of a growing metropolitan region that is Canada's Pacific gateway. The strategies and actions in this *Industry and Business Roadmap*, as well as the commercial transportation and buildings actions referenced from the other *Climate 2050 Roadmaps* will reduce emissions from a spectrum of businesses, from light and heavy industrial to non-industrial businesses. A number of actions are focused on emissions from industrial businesses (e.g. industrial facilities, non-road equipment) while others are focused on emissions typical of non-industrial businesses (e.g. buildings, vehicle fleet). Climate resilience actions will apply to the spectrum of businesses in Metro Vancouver.



## Climate Change Impacts on Industry and Business

Our region's network of communities, businesses, workers and customers are already being impacted by the climate changes that are locked in due to historic emissions, and these impacts are projected to accelerate despite the significant reductions in greenhouse gas emissions that we aim to achieve in the coming years and decades. The uncertainty created by a shifting climate and the need for resiliency means governments and businesses need to think differently about infrastructure and planning.



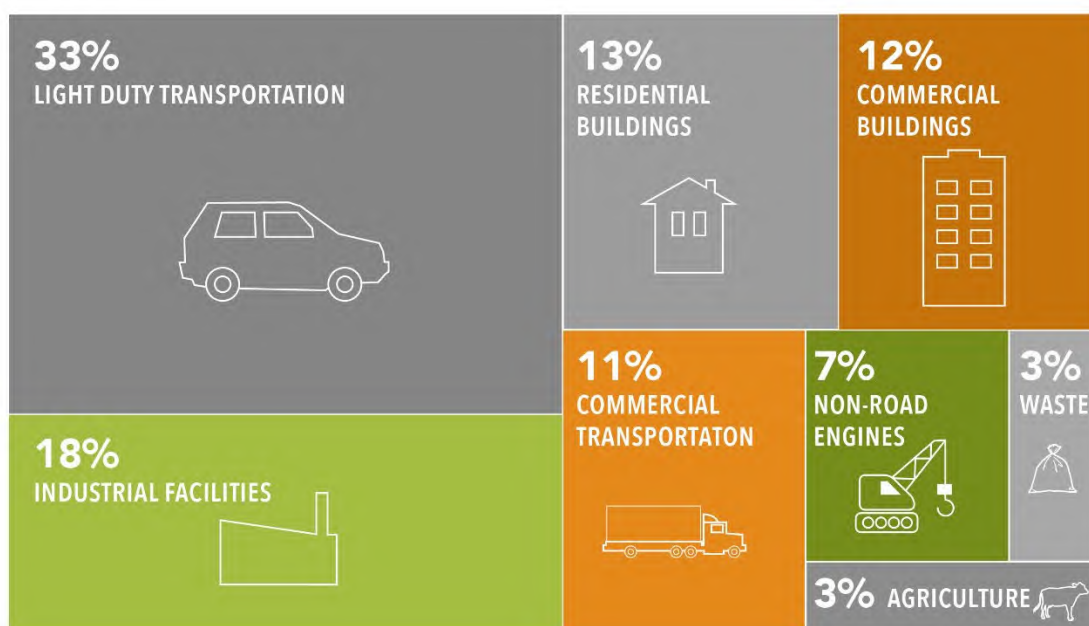
Recent climate-influenced events, including the “heat dome”, forest fires, and extensive flooding in 2021, exposed how susceptible infrastructure and commercial activities are to the impacts of a changing climate. Businesses that were directly impacted by floods or fires experienced loss or damage to their assets, and their workers may have seen impacts on their health and safety. In addition, many businesses suffered from disruptions in their supply chains due to failures in the transportation systems.

The scientific projections of climate change and their impacts indicate that we can expect the following changes and impacts in Metro Vancouver into 2050:

Climate Changes	Impacts Felt
<b>Warmer temperatures:</b> with increasing daytime and nighttime temperatures, there will be more hot summer days and fewer winter days with frost or ice.	<b>Heatwaves</b> can impact the safety and comfort of workers due to increased indoor temperatures in commercial buildings and outdoor work environments, where cooling may be inadequate. Heatwaves can also change the operational needs of certain businesses (e.g., refrigerated warehousing and transportation, agriculture.)
<b>Longer summer dry spells:</b> summer rainfall will decline by nearly 20%, with increased likelihood of extended drought periods.	<b>Poor air quality</b> from wildfire smoke events, which can compound impacts with existing sources of air contaminants (e.g., ground-level ozone, pollution from traffic and industry). Disruptions to business operations can occur when workers' health and safety is compromised due to poor air quality.
<b>Wetter fall and winters:</b> although on average the total annual rainfall is expected to increase by just 5%, there will be a large increase in rainfall during fall and winter.	<b>Power disruption</b> due to overloaded grids from increased demand from cooling systems, and from shock events including flooding and storms.
<b>More extreme precipitation events:</b> more rain will fall during the wettest days of the year and the frequency of extreme rainfall events will increase.	<b>Riverine, coastal and urban flooding</b> caused by periods of heavy rainfall during extreme weather events (e.g., storms), rapid snowmelt, or a combination of both. This can lead to localized flooding in industrial sites and commercial spaces, and disruptions to the commercial transportation system, including truck routes and rail lines which could have cascading effects for supply chains.
<b>Decreased snowpack:</b> the deep spring snowpack in the mountainous watersheds is expected to decrease by over 50% compared to present day.	<b>Reduced water supply</b> as a result of reduced snowpack and hotter, drier summers that can strain drinking water supplies during times of the year when demand is the greatest.
<b>Sea level rise:</b> in addition to these weather-related changes predicted in our region, warming global temperature is projected to bring at least 1 meter of sea level rise by 2100, which will impact coastal areas in the region.	<b>Sea level rise</b> in coastal areas of our region will increase flood risk for industrial facilities and commercial activities located in low elevation areas, including the ports. Sea level rise can also magnify the impact posed by other hazardous conditions in coastal areas such as subsidence (land sinking), king tides and storm surges, and heavy winds and precipitation caused by storms.

## Regional Emissions from Industry and Business

Industry and business-related activities contributed roughly half of the 15 million tonnes of the regional greenhouse gas emissions estimated for 2015. The graph below captures the range of activities that generate the region's total greenhouse emissions in Metro Vancouver. Industrial facilities accounted for 2.5 million tonnes (18%) and non-road equipment, 1 million tonnes greenhouse gas emissions (7%), respectively.



In addition, commercial transportation associated with goods movement (e.g., heavy duty truck, rail, marine and air) accounts for about 11% of regional greenhouse gas emissions and a similar amount of emissions come from commercial buildings. (Note a small portion of light duty vehicle emissions are also associated with commercial transportation, such as taxis and couriers.) Agriculture accounts for 3% of regional emissions. More information about these emission sources are provided in the *Climate 2050 Roadmaps for Transportation, Buildings, and Agriculture*.

**Call out Box: The Connection between Climate Change 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.

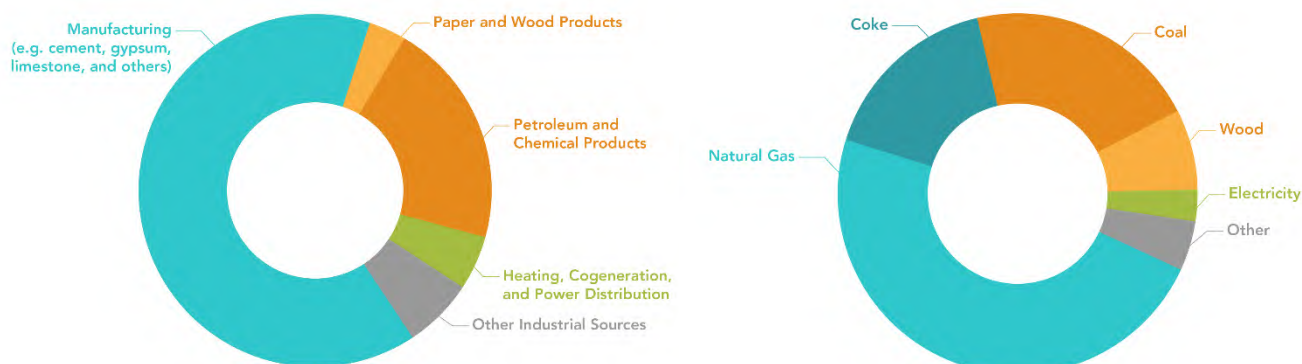
Residents in the region generally experience good air quality. However, health researchers have demonstrated that there are no known safe levels for some air contaminants that are harmful to human health. In the Metro Vancouver region, commercial activities are a significant source of regional greenhouse gas emissions, as well as emissions of health-harming air contaminants that impact regional air quality. Industrial facilities and non-road equipment generate over 25% of nitrogen oxides, over 40% of particulate matter, and over 50% of sulphur oxides produced in the region. Commercial transportation, commercial buildings and agriculture also generate health harming air contaminants.

Metro Vancouver is responsible for managing and regulating air contaminants in the region, including greenhouse gases, under its authority delegated by the BC Government in the *Environmental Management Act*. Metro Vancouver uses this authority to establish emission requirements for industrial facilities and non-road equipment (and other sources) through regulations and permits. The *Clean Air Plan*, Metro Vancouver's air quality and greenhouse gas management plan, will reduce health-harming air contaminant emissions and impacts in the region through to 2030. Many actions that reduce health-harming air contaminants will also reduce greenhouse gas emissions thereby supporting the goal of becoming a carbon neutral region by 2050.

### Emissions from Light and Heavy Industrial Facilities

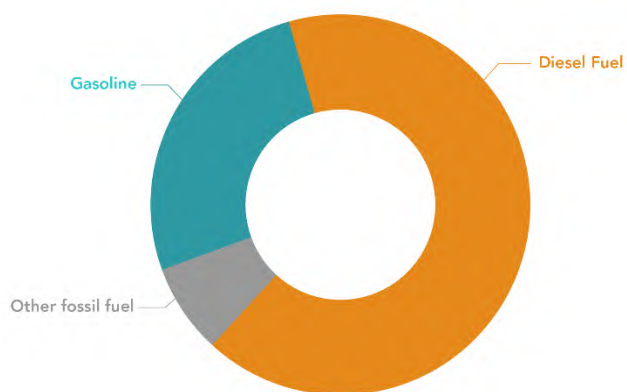
Industrial facilities in the Metro Vancouver region manufacture and process products such as cement, petroleum, gypsum, limestone, paints and chemicals, wood and paper, metal, and food. The greenhouse gas emissions from these industrial facilities are primarily generated from burning fuel during the manufacturing process. More than 75% of the energy used to operate industrial facilities are fossil fuels such as natural gas, coal and coke (see Figure 1). In some cases, the manufacturing process for a product or good (e.g., cement, limestone) includes chemical reactions that release significant quantities of greenhouse gases such as carbon dioxide.

**Figure 1: Breakdown of Industrial Facility Greenhouse Gas Emissions**



### Emissions from Non-Road Engines

Non-road equipment is used in many industries and businesses in the region and generates greenhouse gas emissions from the use of diesel or gasoline. Non-road equipment includes cranes, loaders, forklifts, generators, lawnmowers, and more. Industries with the two largest sources of greenhouse gas emissions from non-road equipment are construction and cargo-handling. The use of non-road equipment contributes about 7% of the region's total greenhouse gas emissions.



**Figure 2 Breakdown of Non-Road Equipment Greenhouse Gas Emissions by Energy Type**



## Achieving Deep Emissions Reduction in Industry and Business

Nearly all businesses in the region, from small to large, generate greenhouse gas emissions from the use of fossil fuels. Some manufacturing activities also generate emissions from chemical processes. The main technological options for significant emission reductions include: a shift to clean, renewable sources of energy; scaling up adoption of low to zero emission vehicles, engines and equipment; prioritizing use of low carbon materials; and advancing and adopting carbon capture, utilization, and storage technologies. To achieve the deep emissions required to achieve carbon neutrality, adoption of this suite of decarbonization approaches will need to begin now.

## Clean, Renewable Sources of Energy

Switching to clean, renewable energy is a central strategy for reducing greenhouse gas emissions across the region. The use of high efficiency electric heat pumps is an effective way of achieving deep emissions reductions wherever lower temperature heat is required, including for space and water heating within industrial and commercial facilities. Higher temperature thermal processes (e.g., in cement production) may require combustion of low carbon biofuels (e.g., renewable gas) or hydrogen instead of fossil fuels.

Hydrogen is expensive to produce and technologically challenging to distribute, store, and use, but it is a promising energy carrier that could be used to decarbonize some hard-to-electrify activities, such as in heavy-duty transportation and industrial applications. The BC Government has developed the *BC Hydrogen Strategy* to guide the transition to hydrogen as a low carbon energy source. The Government of Canada has also developed the *Hydrogen Strategy for Canada* as a framework to position Canada as a world-leading producer, user and exporter of clean hydrogen, and associated technologies.

It is important to recognize that use of low carbon biofuel or hydrogen, while reducing greenhouse gas emissions, may result in emissions of health-harming air contaminants. In addition, an increased demand for the organic feedstock (such as agricultural products or residues, wood waste, or fats from rendering) that are used to generate renewable energy could also have impacts on our agricultural systems, forests, and other ecosystems. An assessment of lifecycle greenhouse gas emissions from renewable energy sources can quantify the environmental impacts associated with all the stages of production and use and can guide decision making on the selection of an energy source.

Powering vehicles and buildings by clean electricity will also be an important strategy for reducing commercial greenhouse gas emissions (see the *Climate 2050 Transportation and Buildings Roadmaps* for more detail).

Switching to clean, renewable energy sources will require capital investment, and its use may cost more on per unit basis than fossil fuel energy. These additional costs will need to be offset by energy efficiency improvements and transition support from utilities and governments.

## Zero Emission Non-Road Engines and Equipment

Electrification of non-road equipment is evolving and low-emission technologies have significantly advanced in recent years. Policy actions such as the requirements for cleaner engine standards can

accelerate the transition towards low or zero emission equipment, as well as those that accelerate uptake of currently available options. Switching to zero emission non-road equipment not only leads to reductions in greenhouse gas emissions but may also result in improved air quality where that equipment is used, which can benefit worker health.

Electric non-road equipment is becoming increasingly available for various applications, including construction and demolition, commercial and warehousing operations, cargo-handling, and lawn and garden maintenance. Governments can support the uptake of electric equipment through supportive incentives, regulations, and the provision of appropriately located charging infrastructure.

Low carbon biofuels can also play a role in reducing emissions from non-road equipment. Engines that currently use liquid fossil fuels can be readily switched to using biofuels such as ethanol and renewable diesel. While the use of some types of biofuels may require engine modifications, others, such as renewable diesel, can be used directly in conventional engines.

#### ***Getting Down to Business – Zero Emission Construction Sites***

Cities across the globe are leading the charge to reduce emissions from their non-road equipment fleets. In Oslo, Norway, a pilot program using electric non-road equipment for municipal construction and maintenance projects. This pilot is part of its commitment to achieve zero emissions for all municipal construction sites by 2025 and for all construction sites (public and private) to be zero emissions by 2030. A similar program in Gothenburg, Sweden called “Electric Worksite” involves partnering with manufacturers to test the requirements of zero emission electric construction and maintenance equipment, with the objective to encourage wider adoption. Within North America, California’s small off-road engine regulation requires small non-road engines, such as maintenance equipment and portable generators, to be low- to zero emission beginning in 2024.



Photo credit from [Volvo CE develops full power of electric ecosystem with E Worksite](#)



## Prioritization of Low Carbon Products and Services

Most activities involved in providing goods and services (such as design, logistics, manufacturing, transportation, and waste management) are linked to greenhouse gas emissions. The embodied emissions of a good or service is a way of quantifying the emissions associated with its production, transportation, use and disposal. Compared to direct greenhouse gas emissions associated with fossil fuel use and industrial operations, embodied emissions are more complex to estimate, and are not yet widely tracked or reported.

Better understanding of embodied emissions could inform public and corporate procurement policies and programs to advance the use of low carbon products and services, and could reduce greenhouse gas emissions both within and outside our region. Production and procurement of low carbon products should be prioritized to help generate and support jobs in a decarbonized regional economy.

### ***Getting Down to Business – Low Carbon Procurement Policies***

Governments are implementing measures to support low carbon products in their public procurement processes. The Buy Clean California Act (established in 2017) aimed to limit and reduce embodied (supply chain) emissions in public infrastructure projects. In 2020, Marin County in California set limits for greenhouse gas emissions from concrete products. Similarly, the Bay Area Low Carbon Concrete Code requires all projects using concrete to meet strict emissions intensity standards. Within Canada, the City of Langford within the Capital Regional District may be the first local government to adopt a low-carbon concrete policy. The policy will take effect in mid-2022, and requires municipal projects to submit a third-party verified Environmental Product Declaration (EPD) to track the environmental impacts of purchased concrete materials and demonstrate lower GHG intensity than category benchmarks.

### **Call-out Box: Circular Economy's Role in the Transition to Carbon Neutrality**

Globally, there is a need to change the way materials, products, and food are made, to reduce input resources and minimize waste. A circular economy approach can both decrease embodied emissions and create new economic opportunities for businesses. The approach focuses on closing material and energy loops so the economy does more with less. The circular economy is based on three principles: eliminate waste and pollution; circulate products and materials (at their highest value); and regenerate nature. This represents an alternative to the conventional, linear model of “take-make-dispose”.

BC Materials is a construction company that operates within Europe and transforms excavated soil from construction sites into other construction materials (e.g., compressed earth blocks, clay plaster), and sells it directly to new developers. This circular approach reduces embodied carbon as well as direct emissions in the buildings using these construction materials. The emissions associated with transporting materials to new sites and landfills are reduced; the owners benefit from alternative carbon neutral solutions; and the building occupants enjoy better thermal insulation.

The National Zero Waste Council, an initiative of Metro Vancouver, takes part in leading Canada's transition to a circular economy by bringing together governments, businesses and NGOs to advance a waste prevention agenda that maximizes economic opportunities for the benefit of all Canadians.

Sources: [Policy Options](#); [Ellen MacArthur Foundation](#)

### Advancement in Carbon Capture, Utilization, and Storage Technologies

Carbon capture, utilization, and storage refers to technologies that capture carbon dioxide from high-emitting applications, (e.g., cement manufacturing) as well as technologies that remove carbon directly from the atmosphere, and then safely and permanently store the captured gas. These technologies will be required in a relatively small number of industrial and commercial activities that still generate large amounts of greenhouse gases after more conventional efforts to reduce emissions have been adopted. Specific carbon capture, utilization, and storage technologies are advancing at different rates, and some are poised to be used in commercial and industrial applications already. Additional innovation and investment in these technologies and the infrastructure to support them will be necessary for large-scale carbon capture projects, and to find effective, safe and permanent storage solutions. Enabling policies and financial mechanisms (e.g., increasing the price of carbon emissions), are likely to be needed to support the expanded use of carbon capture, utilization, and storage technologies.

## Building Climate Resilience in Industry and Business

Building climate resilience for industry and business means addressing the range of climate-influenced hazards that can impact individual businesses and whole business sectors. Examples include: more frequent flooding and landslides due to extreme precipitation; extreme heat; and wildfire smoke.

As Canada's gateway to the Pacific, Federal, Provincial and local governments will need to plan to adapt the region's transportation infrastructure (road, marine, rail, and air) to be resilient to the threats posed by a changing climate. A resilient regional transportation system will be critical for businesses to maintain reliable connections to local or international supply chains. Likewise, business will need to ensure that buildings and facilities in which businesses operate have sufficient cooling and enhanced air filtration to protect workers during more frequent extreme heat and air quality events. Strengthening industry and business resilience to these and other climate impacts will require a shift in planning and investment by both governments and the private sector, informed by up to date climate information.

## Awareness of Climate Risks and Vulnerabilities to Business

Connecting businesses to available and appropriate climate data and potential climate impacts can increase understanding of climate risks and the basis for evaluating risk response options. Some jurisdictions have used a "cluster" approach (based on similar climate risks and supply chains) to help tailor climate data, climate resiliency tools and guidance for the region's industries and businesses (see example in call-out box).

### ***Getting Down to Business – Italy's Industrial Cluster Approach to Climate Resilience***

Industries in Italy have developed a cluster approach to building resilience to the impacts of climate change. The Improve Resilience of Industry Sector (IRIS) program aims to support businesses, especially small and medium sized ones, in becoming more climate resilient through identification of specific adaptation measures. Businesses belonging to the same production area or belonging to the same production chain are grouped in "industry clusters" to assess the associated climate risks and to develop a cluster specific climate adaptation plan.

The program includes operational solutions that are analyzed and proposed to businesses whose production, facilities, or infrastructure may be increasingly at risk for disruptions due to climate influenced events. IRIS actions include: carrying out climate risk assessment in pilot clusters; developing climate adaptation plans in pilot clusters; analyzing opportunities related to financial and insurance tools for business resilience; and developing a web portal for a climate risk self-assessment.

IRIS is the first project in Europe focused on climate change effects in the industrial sector and suggests the cluster approach to increase business resilience. This approach is particularly interesting for small and medium enterprises because it fosters sharing of resources and skills.

Sources: [Improve Resilience of Industry Sector \(IRIS\)](#)

## Preparation for Climate Impacts Projected for the Region

Climate change projections are anticipated to impact communities and businesses in the region as was witnessed during the climate-driven extreme weather events in 2021. Businesses can take action now to better manage exposure to risk and minimize damages to their assets. Examples of future-proofing business operations and processes include:

- add space cooling in buildings to prepare for hotter summers,
- improve air filtration in buildings to manage wildfire smoke events,
- prepare heat response plans to protect workers and operations, and
- ensure buildings and other assets in flood prone areas can withstand flood events.

While businesses must manage their own assets and business operations, governments and utilities will need to ensure that the infrastructure that businesses and residents depend on is resilient to extreme events and other climate impacts, including:

- plan for flood protection during severe storms,
- provide reliable access to utilities (e.g., power, water, sewer, fiber optic), and
- ensure a reliable transportation network for the supply chain.

Metro Vancouver's regional growth strategy, *Metro 2050* and *Climate 2050's Land Use and Growth Management Roadmap*, currently in development, will include new policies to strengthen climate resilience action. Metro Vancouver's Regional Industrial Lands Strategy (RILS) establishes a vision on the future of industrial lands in the region, recognizing the role of industrial lands to support a prosperous, sustainable regional economy and to provide space for industrial services needed in our growing region. The RILS recognizes the climate risks such as flooding that may impact some industrial land and activities.

### **Call-Out Box: Lower Mainland Flood Management Strategy**

The Fraser Basin Council has been leading a multi-year project to develop the Lower Mainland Flood Management Strategy (LMFMS) aimed at reducing flood risk and improving the flood resilience of communities along BC's lower Fraser River and south coast. The LMFMS brings together decision-makers including the Government of Canada, the Province of British Columbia, Lower Mainland local governments, First Nations and non-governmental and private sector entities in the region to work collaboratively on flood management.

### **Getting Down to Business – Resilient Industry Initiatives**

The City of New York developed a resilient industry toolkit that was designed to support industrial businesses located within NYC's floodplain to cost-effectively adapt to climate change. The toolkit includes an overview of flooding vulnerability in industrial areas and identifies relevant flood resilience practices that can be implemented by businesses. Other elements of the toolkit include illustrations and cost estimates for adaptation actions for prototypical waterfront sites (e.g., film studio, warehouse, brewery). The overall program is an example of a public-sector approach to building resiliency in specific industrial sectors.

## Barriers and Opportunities

### Alignment in Climate Policies

Policy and regulatory certainty is important for businesses to make long-term capital investments and changes to their practices and procedures consistent with reducing greenhouse gas emissions and increasing their resiliency. Businesses are faced with a complex regulatory environment designed to advance climate, social and environmental objectives so the objectives and targets must be clear. In addition, the climate policies and regulations of all levels of governments must be aligned in order to ensure that they are not in conflict, in addition to creating a level playing field to ensure that competing businesses are required to meet the same standards and assume similar costs. Alignment of policies across jurisdictions is essential to prevent carbon leakage (see box).

Metro Vancouver recognizes its responsibility to analyze the impact of federal and provincial climate policies, including carbon pricing and border carbon adjustment policies, on regional businesses before developing policies and regulations to reduce greenhouse gas emissions while minimizing the impact on the regional economy.

#### **Call-out box: Carbon Leakage in Industry and Business**

Carbon leakage refers to an economic scenario when stringent climate regulations in one jurisdiction push businesses or commercial activities to move to a jurisdiction with weaker climate regulations. In this situation, global greenhouse gas emissions are not reduced. Instead the activity creating emissions just moves elsewhere and may lead to an overall increase in emissions depending on the energy source in the new location and longer shipping distances. Businesses moving out of the region to avoid more stringent emission regulations will likely result in negative economic impacts including job loss and reduced tax revenues.

The “energy-intensive, trade-exposed” industries that operate within the Metro Vancouver region may be at a higher risk for carbon leakage. Energy-intensive, trade-exposed industries are generally capital intensive, require large amounts of energy to operate, generate emissions inherent in the chemical processes, and compete internationally for markets at home and abroad. These industries include cement, lime and gypsum, and chemicals. The capital intensive nature of these businesses means that planning for the replacement and retrofitting of equipment typically occurs over longer time frames.

### Market Availability and Cost of Zero Emission Technology

Although many of the technologies and products necessary to rapidly reduce greenhouse gases are already available in the market (e.g., electric passenger vehicles, heat pumps for space heating), in other cases, equipment for specialized applications (e.g., industrial heat pumps, medium/heavy-duty electric vehicles) are not widely available or cost significantly more than their conventional, higher emission counterparts.

The availability of zero emission non-road equipment is a good example. Electric options are available for certain applications (e.g., forklifts), while other technologies (e.g., construction equipment) are not yet

widely available in the region, though they are becoming available in other markets. Some types of non-road equipment that already have electric options available (e.g., generators), can still be prohibitively expensive for many industrial and commercial applications compared to their fossil fuel counterparts. Government incentives and other financial support can help offset the cost of adopting zero emission technologies.

### Innovation and Technological Development

Certain economic sectors will require significant innovation and technological development to achieve cost effective deep emission reductions and reach carbon neutrality. Carbon capture, utilization, and storage is an example of technology that requires further development to bring down its cost and make it feasible for different sector applications. Other technological areas that require investment in research and development, pilot testing, and finally broad commercialization include new building components and energy storage. The drive to innovate emissions reduction and resiliency solutions creates opportunities for job and business growth.

*Invest Vancouver*, Metro Vancouver's economic development service, is focused on certain industry areas with technological development potential and economic opportunities, as described in the call-out box.

#### **Call out box – Invest Vancouver**

*Invest Vancouver* is Metro Vancouver's recently launched economic development service with the vision of a dynamic and resilient regional economy that delivers prosperity for all. Invest Vancouver is a collaboration of leaders from a cross section of the region, including: industry and business associations, community and labour organizations, port authorities, Boards of Trade and Chambers of Commerce, academic institutions, agriculture, First Nations, and Metro Vancouver Directors.

With a mission to position our region for success in a rapidly evolving global economy, Invest Vancouver exists to foster greater regional collaboration on economic development issues, to advise leaders on sound economic policy and strategy, and to brand the region and its key industries to a global audience with the intention of attracting strategic investment.

### Infrastructure Investment to Support Greenhouse Gas Reductions and Climate Resilience

Investment in public and private infrastructure consistent with deep emissions reduction and strengthening climate resilience is essential moving forward. Significant investments in the electrical grid (e.g., distribution lines, transformers) will be required to support charging for electric vehicles and non-road engines and electrification of buildings and industry. Similarly, changes to the natural gas distribution system may be required to allow hydrogen to be distributed within the system. Enabling carbon capture at a large scale will likely require repurposing some of the region's pipeline infrastructure to transport captured greenhouse gases to storage areas outside the region.

Investments in public infrastructure also underpin industry and business climate resilience. As one example, diking infrastructure is key to protecting industrial and agricultural land that is often located in

low lying areas near the region's rivers and coastline. In 2012, the BC Government estimated that the dikes in the Lower Mainland required \$9.5 billion in upgrades to address climate and seismic risks. Much of the land protected by these dikes is used for commercial purposes.

### Integrating Climate Considerations in Normal Business Practice

As described above, climate change is already impacting industry and business and the transition to a carbon neutral, resilient future will touch on the operations of many businesses. To manage this transition and to be better able to respond to the uncertainty caused by climate change, businesses need to incorporate climate considerations into normal business practice. This may involve accounting for climate risk as part of the existing risk assessment of a business (see box on Managing Climate Risk). Businesses can also incorporate the tracking of greenhouse gas emissions as part of financial reporting to better integrate financial decisions with emissions reduction.

Consumers can be active in driving the demand for low carbon products. This can be supplemented by procurement policies of business, governments and institutions that support the growth of businesses supplying low carbon products to the market.

#### **Call out box: Managing Physical and Transition Risks of Climate Change**

Climate-related risks are often classified into two broad categories: physical and transition risks. Physical risks arise from the changes in weather and climate that impact businesses, supply chains, and the availability of labour, as described above. A changing climate and the transition to a low carbon economy also creates transition risks for businesses, affecting their profitability and competitiveness. Transition risks can be subdivided into several types:

- Policy and Legal Risks – the potential for financial impact due to policy changes such as carbon pricing, regulation, regulations around land-use, or legal risk as a result of litigation for failure to mitigate impacts to climate change or enact sufficient adaptation measures.
- Technology Risk – technological changes that support the transition to a low carbon economy, including renewable energy technology, could affect the competitiveness of certain industries.
- Market Risk – Shifts in supply and demand for products and services create a wide range of risks to businesses.
- Reputational Risk – consumer and community perceptions of different industries and businesses may change as a result of an organizations perceived contribution to, or detraction from the transition to a low carbon economy.

#### **Call out box: Disclosure of Climate-Related Risks**

In response to investors, governments and other stakeholders seeking to better understand how businesses manage risks. The Task Force on Climate-related Financial Disclosures (TCFD) has emerged as a globally-accepted framework that provides guidance and best practices for businesses to report on climate-related risks. Financial regulators in several jurisdictions, including in Canada, are moving towards

requiring publicly-traded companies to disclose climate-related risks. In addition, local governments are considering the value of implementing TCFD.

TCFD or similar frameworks can help identify and quantify climate-related risks to key decision makers within an organization and to external parties. It allows climate risk to be assessed in line with other risks and provides a means to incorporate climate risks, and opportunities, into organizational budgeting and capital planning activities while pushing companies to formalize their climate strategy, metrics and targets to better assess and manage their climate risk.

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## The Journey to Carbon Neutrality and Resilience

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

There are linkages to the industry and business sector in the other *Climate 2050* roadmaps. You can find additional information on these topics in the following:

**Buildings Roadmap** – actions to reduce emissions from space and water heating in commercial buildings and adapt commercial buildings to climate impacts.

**Transportation Roadmap** – actions to reduce emissions from the vehicles and other modes of transportation used for the movement of goods, raw materials, products between industries and consumers, as well as for connecting people from their homes and communities to their places of work.

**Agriculture Roadmap** – actions to reduce emissions from agricultural activities, operations, and agricultural equipment.

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

**Land-use and Growth Management Roadmap** – ideas that shape the form and location of industrial land and commercial buildings in the region. Also linked to the regional growth strategy, which discusses coordination of land use and transportation planning.

**Energy Roadmap** – actions to increase the use of clean, renewable energy by industry and businesses.

CONNECTING THE <i>CLIMATE 2050 INDUSTRY AND BUSINESS ROADMAP</i> AND THE CLEAN AIR PLAN	
<i>Clean Air Plan</i>	<i>Industry and Business Roadmap</i>
<ul style="list-style-type: none"><li>• Greenhouse gas reduction goals, strategies and actions.</li><li>• Air quality goals, strategies and actions.</li><li>• Goals, strategies and actions for other sectors such as buildings and transportation.</li></ul>	<ul style="list-style-type: none"><li>• Greenhouse gas reduction goals, strategies and actions.</li><li>• Resiliency strategies for industry and business</li><li>• Challenges, opportunities and benefits of transitioning industry and business towards a decarbonized economy.</li></ul>

## Climate Goals and Targets for Industry and Business

Metro Vancouver's *Climate 2050 Strategic Framework* has set the following regional vision to guide the region's response to climate change:

- Metro Vancouver is a carbon neutral region by 2050
- Infrastructure, ecosystems, and communities are resilient to the impacts of climate change

Metro Vancouver has also set a regional target of 45% reduction in greenhouse gas emissions from 2010 levels, by 2030.

Achieving this vision means setting goals in each of the *Climate 2050 Roadmaps*, organized by sectors in the region, and contributing towards getting to a carbon neutral, resilient region.

Metro Vancouver has set the following climate goals for industrial and non-industrial businesses in the region to help visualize the region we will live in, and to track progress out to 2030 and 2050. The table below includes goals and targets for industrial facilities and non-road equipment (pages 30-31).

The goals and targets for commercial buildings, commercial transportation and agriculture are also listed (pages 31-33). Refer to the *Climate 2050 Roadmaps* for Buildings, Transportation, and Agriculture for more information on the strategies and actions associated with these goals.

### 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.

## Greenhouse Gas Emission Reductions

The long-term goal is that Industry and Business is carbon neutral by 2050.

Goals	Targets
All industrial facilities are carbon neutral	By 2030: <ul style="list-style-type: none"><li>- A 35% reduction in greenhouse gas emissions from industrial facilities from 2010 levels.</li></ul> By 2050: <ul style="list-style-type: none"><li>- All industrial facilities are carbon neutral.</li></ul>
All non-road equipment operating within the region use zero emission technologies powered by clean, renewable energy.	By 2030: <ul style="list-style-type: none"><li>- 35% reduction in greenhouse gas emissions, from 2010 levels</li></ul>

	By 2050: <ul style="list-style-type: none"> <li>- 100% reduction in greenhouse gas emissions</li> </ul>
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<b>Commercial Transportation</b>	
All medium and heavy duty trucks and rail locomotives operating within the region use zero emission technologies powered by clean, renewable energy.	By 2030: <ul style="list-style-type: none"> <li>- 35% reduction in greenhouse gas emissions, from 2010 levels</li> </ul> By 2050: <ul style="list-style-type: none"> <li>- 100% reduction in greenhouse gas emissions</li> <li>- All medium duty trucks are zero emission, powered by clean, renewable electricity or hydrogen</li> <li>- All heavy duty trucks and rail locomotives use either zero emission technologies or biofuels</li> </ul>
All aircraft and marine vessels operating within the region use low emission and zero carbon technologies powered by clean, renewable energy.	By 2030: <ul style="list-style-type: none"> <li>- 35% reduction in greenhouse gas emissions, from 2010 levels</li> </ul> By 2050: <ul style="list-style-type: none"> <li>- 75% reduction in greenhouse gas emissions, from 2010 levels</li> </ul>
<b>Commercial Buildings</b>	
All buildings are zero emissions from heating and cooling by 2050.	By 2030: <ul style="list-style-type: none"> <li>- 35% reduction in greenhouse gas emissions from buildings, relative to 2010 levels.</li> <li>- All new buildings are zero emissions in their operations.</li> <li>- All new buildings produce 40% less embodied emissions from construction.</li> </ul> By 2050:

	<ul style="list-style-type: none"> <li>- All buildings are zero emissions in their operation, deriving all energy needs from 100% clean and renewable sources.</li> <li>- All new buildings are carbon neutral in their embodied emissions from construction.</li> </ul>
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## Climate Adaptation

Goals	Targets
The region's industries and businesses are resilient to the current and future impacts of climate change.	<p>By 2030:</p> <ul style="list-style-type: none"> <li>- All industrial facilities have identified existing, unmitigated climate hazards that could impact their operations and supply chains.</li> </ul> <p>By 2050:</p> <ul style="list-style-type: none"> <li>- All industries and businesses are resilient to current and future impacts of climate hazards.</li> </ul>

Commercial Transportation	
The regional transportation system is safe, reliable, and resilient to the current and future impacts of climate change.	<p>By 2030:</p> <ul style="list-style-type: none"> <li>- All major transportation infrastructure projects are located outside of areas with known, unmitigated climate hazards.</li> </ul> <p>By 2050:</p> <ul style="list-style-type: none"> <li>- All transportation networks and infrastructure are protected from current and future impacts of climate hazard.</li> </ul>
Commercial Buildings	
Residents are protected by buildings that are resilient to high temperatures, harmful air quality, severe storms and flooding by 2050.	<p>By 2030:</p> <ul style="list-style-type: none"> <li>- All new buildings utilize world-leading water conservation methods.</li> <li>- Metro Vancouver's most vulnerable residents in the region have access to buildings with cooling and clean air during extreme heat and wildfire events.</li> </ul>

	<ul style="list-style-type: none"><li>- All new buildings include cooling and air filtration adequate to protect against extreme heat and harmful outdoor air quality events.</li><li>- All new buildings are constructed to be resilient to riverine, coastal and urban flooding, and extreme storms</li></ul> <p>By 2050: All Metro Vancouver’s residents have access to buildings that:</p> <ul style="list-style-type: none"><li>- protect against extreme heat and harmful outdoor air quality events,</li><li>- are resilient to riverine, coastal and urban flooding, and extreme storms, and</li><li>- utilize world-leading water conservation methods.</li></ul>
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## Strategies for Achieving Deep Emission Reductions in Industry and Business

Figure 3 shows the estimated greenhouse gas emission reductions from some of *Climate 2050* strategies addressing greenhouse gas emissions from Industry and Business. It illustrates the potential emission reduction impacts of Strategy 1 for industrial facilities and Strategy 2 for non-road equipment, as well as potential impacts of emissions reduction strategies in commercial buildings and transportation. Further work is required to estimate the impacts of the other strategies in this *Industry and Business Roadmap*.

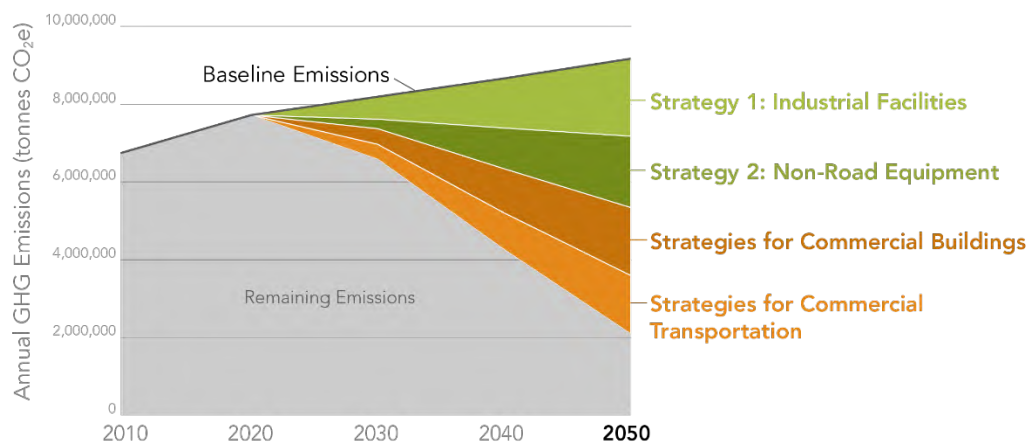


Figure 3 Potential impacts of strategies for industry and business<sup>1,2</sup>

<sup>1</sup> Remaining emissions include those captured by other strategies or those identified as gaps

<sup>2</sup> Based on Metro Vancouver's [Modelling a Carbon Neutral Region Project](#). Strategies in commercial buildings and commercial transportation are further discussed in the *Climate 2050 Buildings and Transportation Roadmaps*, respectively.

**Emission Reduction Actions for Industry and Business in other *Climate 2050 Roadmaps***

Other *Climate 2050* Roadmaps contain strategies and actions to reduce greenhouse gas emissions from Industry and Business. Below are a few examples of key actions relevant for Industry and Business from the *Climate 2050 Buildings* and *Transportation Roadmaps*, and the draft *Agriculture Roadmap* (for more information on these strategies and actions including the estimated greenhouse gas reductions, see the *Climate 2050* website.)

***Climate 2050 Buildings Roadmap***

- Greenhouse Gas Performance Requirements for Existing Large Buildings
- New Financing Tools for Low Carbon Upgrades
- Training and Education in Zero Emissions and Resilient Buildings
- Emissions Requirements for District Energy Systems
- Incorporate Embodied Emissions into the BC Building Code

***Climate 2050 Transportation Roadmap***

- Require Zero Emission Sales Targets for New Medium and Heavy Trucks
- More Stringent Low Carbon Fuel Standards
- Make Low and Zero Emission Medium and Heavy Trucks More Affordable
- Support Innovation in Zero Emission Technology for Medium and Heavy Trucks
- Support Innovation in Low and Zero Emission Marine and Rail Technologies

***Draft Climate 2050 Agriculture Roadmap***

- Reduce Emissions from Greenhouses
- Incentives for Farmers to Transition to Lower Emission Equipment
- Expand Anaerobic Digestion of Agricultural Waste
- Support Innovations in Agricultural Operations

**Key to reading the strategies and actions**

Potential Impacts of Strategies	The highest potential emission reductions due to all actions in the strategy, relative to the expected baseline emissions in 2030 and in 2050. Greenhouse gas estimates include carbon dioxide, methane and nitrous oxide.
Big Moves	Big Moves are foundational to achieving the 2030 targets, and should lead to the most significant emission reductions.
Metro Vancouver Corporate Leadership	Metro Vancouver Corporate Leadership actions are ones Metro Vancouver will implement in its corporate operations to demonstrate leadership and support regional actions.

### Strategy 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 technical and cost 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.

<b>Potential Impacts of Strategy</b> Reduce annual greenhouse gases by up to 520,000 tonnes in 2030 Reduce annual greenhouse gases by up to 2,000,000 tonnes in 2050	<b>Key Partners</b> <ul style="list-style-type: none"><li>- Government of British Columbia</li><li>- Government of Canada</li><li>- Industrial facilities</li></ul>
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- 1.1 **More Stringent Greenhouse Gas Requirements for Large Industrial Emitters. (BIG MOVE)**  
Advocate to the Government of BC 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 1.3 below.
- 1.2 **Integrate Greenhouse Gases into Emission Regulations and Permits. (BIG MOVE)**  
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 Government of BC, 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.
- 1.3 **Implement Renewable Gas Content Requirements. (BIG MOVE)**  
Advocate to the Government of BC to establish content requirements for renewable gas, in line with targets in the provincial *CleanBC* plan. Renewable gas includes renewable natural gas, which has a lower carbon intensity than natural gas from fossil fuels.
- 1.4 **Industrial Emission Reduction Incentives.**



Advocate to the Governments of Canada and BC 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, tax credits, and innovative financing mechanisms. Incentives should be based on emission reductions that meet or exceed relevant industrial emission benchmarks.

**1.5 Develop Sector-Specific Regulations.**

Develop and update sector-specific regulations to accelerate emission reductions from specific industrial, commercial, or business sectors that operate industrial facilities. Sectors targeted would be based on air quality and climate change impacts, emission reduction potential, emerging issues and other factors related to industrial facilities.

**1.6 Provincial and Federal Industrial Emission Standards.**

Advocate to the Governments of Canada and BC 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.

**1.7 Carbon Tariffs.**

Advocate to the Governments of Canada and BC 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.

**1.8 Regional Industrial Facilities Emissions Working Group.**

Work with the Government of BC, local First Nations, regional industry, business associations, academic institutions, port terminals and other partners to explore the opportunities for establishing a regional industrial facilities 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 greenhouse gas emissions from industrial facilities. The working group could help accelerate emission control innovation at industrial facilities, including supporting pilot projects.

**1.9 Phase out High Global Warming Refrigerants.**

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. The accelerated phase out should include coordination with technical and industry associations on certification and solutions for businesses.

**Strategy 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 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 Governments of Canada and BC should support development and commercialization of zero emission non-road engines, which would reduce air contaminant emissions over the long term.

<p><b>Potential Impacts of Strategy</b></p> <p>Reduce annual greenhouse gases by up to 220,000 tonnes in 2030</p> <p>Reduce annual greenhouse gases by up to 1,800,000 tonnes in 2050</p>	<p><b>Key Partners</b></p> <ul style="list-style-type: none"> <li>- Government of BC</li> <li>- Government of Canada</li> <li>- Vancouver Fraser Port Authority</li> </ul>
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#### 2.1 **Tighten Emissions Regulation for Non-Road Diesel Engines. (BIG MOVE)**

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.

#### 2.2 **Emission Standards for New Non-Road Equipment.**

Advocate to the Government of Canada to establish 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.

#### 2.3 **Funding for Cleaner Non-Road Equipment.**

Advocate to the Governments of Canada and BC to enhance funding (e.g., incentives, loans, tax credits) to replace or retrofit existing non-road equipment to reduce emissions, including greenhouse gases. Higher incentives should be available for zero emission equipment and if old equipment is scrapped.

#### 2.4 **Identify Infrastructure Needs for Zero Emission Non-Road Equipment.**

Work with energy utilities, member jurisdictions, the Vancouver Fraser Port Authority, industry and other regional partners to identify the regional infrastructure needs to support a long-term transition to zero emission non-road equipment. This would consider the refueling and charging needs for different types of non-road equipment, funding requirements, potential pilot projects, and should align with similar actions for passenger vehicles and medium and heavy duty trucks in the *Climate 2050 Transportation Roadmap*.

#### 2.5 **Encourage Cleaner Non-Road Equipment through Municipal Approvals.**

Advocate to member jurisdictions to implement incentives to encourage the use of low or zero emission non-road equipment for construction, film, and other industrial sectors. For example, builders and developers using cleaner non-road equipment could receive development benefits such as lower building permit fees.

## 2.6 **Awareness Program on Zero Emission Non-Road Equipment.**

Develop and implement an awareness and outreach program for residents and businesses about the benefits of zero emission non-road equipment, working with member jurisdictions and other regional partners. The program would include regularly updated information on the availability of zero emission equipment, and guidance on “right-sizing” non-road fleets, as well as supporting regional coordination of purchases (i.e., bulk buy) to help reduce costs.

## 2.7 **Transition Metro Vancouver’s Corporate Non-Road Fleet to Zero Emissions. (Metro Vancouver CORPORATE LEADERSHIP)**

Transition Metro Vancouver’s non-road fleet to zero carbon emissions by 2040, and zero emissions by 2050.

### Strategy 3: 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, any increase is expected to have limited impact on regional greenhouse gas levels, compared to the regional greenhouse gas targets. (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.

<p><b>Potential Impacts of Strategy*</b></p> <p>Reduce annual greenhouse gases by up to 50,000 tonnes in 2030</p> <p>*To be updated as Strategy is implemented.</p>	<p><b>Key Partners</b></p> <ul style="list-style-type: none"> <li>- Government of BC</li> <li>- Businesses that operate Industrial facilities</li> <li>- Associations representing businesses with industrial facilities</li> <li>- Academic Institutions</li> </ul>
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## 3.1 **Carbon Capture in Metro Vancouver Region.**

Work with industry, academia and other regional partners to explore the potential opportunities for carbon capture technologies in the region, including pilot projects and uses of captured carbon dioxide.

### 3.2 **Develop Carbon Capture Standards.**

Advocate to the Government of BC to develop technical standards for carbon capture technologies.

#### Strategy 4: Reduce greenhouse gas emissions through procurement and other business practices

Businesses in the region are already helping reduce greenhouse gas emissions through climate action initiatives. Additional technical support and guidance will help businesses adopt cleaner operating practices and further reduce their greenhouse gas emissions. 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 reduce greenhouse gas emissions. Key partners for this strategy include member jurisdictions, business associations, local businesses, and the Governments of Canada and BC.

<b>Potential Impacts of Strategy</b> To be developed as Strategy is implemented.	<b>Key Partners</b> <ul style="list-style-type: none"><li>- Member jurisdictions</li><li>- Government of BC</li><li>- Industries and businesses</li></ul>
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#### 4.1 **Regional Low Carbon Procurement. (BIG MOVE)**

Work with member jurisdictions, industry and business groups, 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, methods for lifecycle greenhouse gas emissions calculation, circular economy considerations (e.g. disposal), greenhouse gas targets and emission disclosure requirements. Products covered by the guidance could include, for example, low carbon cement and concrete products. The guidance should align with Metro Vancouver's *Climate 2050 Buildings Roadmap* on reducing embodied emissions in buildings.

#### 4.2 **Integrate Climate Considerations into Standard Business Practices.**

Advocate to the Governments of Canada and BC 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.

#### 4.3 **Low Carbon Metro Vancouver Corporate Procurement. (Metro Vancouver CORPORATE LEADERSHIP)**

Establish low carbon procurement guidance as a Metro Vancouver corporate standard. Products covered by the guidance could include, for example, low carbon cement and concrete products. This could demonstrate how procurement can support low carbon (and resilient) buildings,

infrastructure and services. Metro Vancouver will explore opportunities to collaborate with its suppliers on low-carbon innovation and measures to help prioritize low carbon products.

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## Strategies for Climate Resilient Industry and Business

### **Climate Resilience Actions for Industry and Business in other *Climate 2050 Roadmaps***

Below are examples of key climate resilience actions relevant for Industry and Business from the *Climate 2050 Buildings*, *Transportation* and the draft *Agriculture Roadmaps* (for more information on the strategies and actions in these roadmaps including the estimated greenhouse gas reductions, see the *Climate 2050* website)

#### ***Climate 2050 Buildings Roadmap***

- Require Cooling Measures in New Buildings and Major Retrofits
- Apply Leading Standards for Ventilation and Filtration in New Buildings

#### ***Climate 2050 Transportation Roadmap***

- Protect Key Transportation Hubs
- Minimize Risk Exposure for New Transportation Infrastructure
- Build Climate Resilient Transportation Infrastructure

#### ***Draft Climate 2050 Agriculture Roadmap***

- Provide Secure Tenure for Farmers
- Reduce Emissions from Greenhouses
- Ensure Long-term, Reliable Access to Water
- Increase Access to Climate Information for Local Farmers and Agricultural Producers

### **Strategy 5: Assess climate vulnerabilities for businesses in the region**

To increase the climate resiliency of the regional economy, we need a deeper understanding of the projected climate impacts that the region will experience, and an understanding of how different types of businesses could be affected. Metro Vancouver can work with partners to conduct an assessment of the climate change risks and vulnerabilities to the region's economy including risks to specific industry and business sectors, and communicate those risks to support resiliency planning.

#### **5.1. Assess Regional Climate Risks and Vulnerability to Support Business Decision-making. (BIG MOVE)**

Work with the Province of BC, industry and business, and other relevant stakeholders to conduct a regional vulnerability assessment to identify climate-related hazards and risks faced by industries and businesses in the region.

#### **5.2. Identify Climate Vulnerability by Clusters with Industry and Business Sectors.**

Work with industry associations and other regional partners to identify "industry clusters" with similar and linked climate vulnerabilities and impacts, including vulnerabilities that can affect the

industry's value chain (both upstream and downstream of the sector). Metro Vancouver will explore opportunities to build and support climate resilience specific to key industry clusters in the region, for example through sharing of information on projected climate impacts.

#### Strategy 6: Support industry and business resilience to flooding through better information and planning

The Metro Vancouver region is expected to experience increased flooding due to climate change, and industrial and commercial land can be particularly vulnerable to large flood events. Businesses may also be susceptible to urban flooding caused by extreme precipitation events that overwhelm drainage systems. Addressing the increased risk of flooding to industry and business will require better information on expected changes in precipitation and the annual freshet, as well as other climatic changes. Businesses and governments can use this information to locate businesses in less vulnerable areas, implement flood protection measures, like diking and building design, and prepare response plans for flood events. Reducing the flood risk to individual and groups of businesses will reduce the overall risk that flooding poses to the regional economy.

##### 6.1 Support Knowledge-Sharing to Increase Resilience to Severe Storms and Flooding

Work with regional partners (e.g. Fraser Basin Council and others) to increase industry and business awareness of flood risk and vulnerabilities due to climate change, and to work with industrial and commercial businesses to develop strategies and policy solutions that can increase industry and business resiliency.

#### ***Getting down to business – Flood Risk Management at the Port of Vancouver: A Collaborative Effort***

The Vancouver Fraser Port Authority, which oversees the lands and waters that make up Canada's largest port, the Port of Vancouver, has collaborated with local municipalities (the City of North Vancouver, Districts of North and West Vancouver) and the Squamish First Nation to conduct a coordinated sea level rise risk study for the Burrard Inlet's north shore, and is also a participant in a regional flood management strategy. The Port Authority also engages tenants (e.g., shipping industry), government and supply chain partners to improve understanding of climate risk and coordination of adaptation planning.

##### 6.2 Coordinate Flood Protection and Flood Risk Management for Industrial Lands.

Work with regional partners (e.g., the Fraser Basin Council, member jurisdictions, and others) to coordinate flood protection and flood risk management activities for industrial lands in the region, informed by the results of a regional climate vulnerability assessment.

#### Strategy 7: Improve business resilience to extreme heat and air quality events

The increased frequency and severity of extreme heat in recent years has directly and indirectly impacted business operations and supply chains in the region. High levels of ground level ozone and particulate

matter from heat and wildfires have made working outside harmful to the health of workers or caused disruptions to the movement of goods. Preparing for extreme heat and air quality events will be important for businesses to protect worker health and well-being, as well as ensuring the continuity of business operations.

#### **7.1 Support Employers in Developing Response Plans for Extreme Heat and Air Quality Events.**

Work with the Province of BC, health authorities, businesses, and other partners to ensure employers and workers have relevant information to prepare response plans for extreme heat and air quality events aimed at protecting the health and well-being of workers, ensuring continuity of business operations, and increasing resilience of supply chains.

#### **Strategy 8: Support industrial water conservation to increase resilience to shifting precipitation patterns**

Climate projections in our region have identified an increase in extreme weather events like heatwaves and droughts, which will impact the region's ability to supply high-quality water to industries and businesses. Water is a resource that businesses rely on for their operations. With an increase in pressure on resources, industries and businesses will need to identify opportunities for resource efficiency and to reduce demand on supply.

#### **8.1 Apply Leading Water Efficiency Standards to Industry.**

Advocate for highest water efficiency in standards for potable water use for industrial and commercial applications. Ongoing updates to strengthen standards for water efficiency in buildings should reflect the continuous improvement in technologies and practices for construction and plumbing.

**Callout Box: A One Water Approach** is where water and wastewater utilities shift away from the traditionally separated silos of drinking water, wastewater, and stormwater, 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.

#### **8.2 Promote water efficiency retrofit incentives and rebates for industries and business.**

Advocate to municipalities and the BC government for water efficiency retrofit incentives and rebates for industries and businesses to facilitate the uptake of water efficient practice. The upfront cost is a barrier for implementation for new systems such as the removal of once through cooling, as well as process improvements like increasing the efficiency of cooling towers. Incentives can increase the feasibility of these and other changes.



## 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 “Industry and Business”, and will serve as a companion to the Industry and Business Roadmap. This will allow Metro Vancouver to track progress towards targets, and add and adjust strategies and actions in response to performance measurement.

The path towards a carbon neutral, resilient region provides an opportunity for a prosperous and sustainable region. There is strong potential and a critical need to achieve significant greenhouse gas emissions reductions among industry and business activities in the region over the next three decades. Reaching success in this will require careful coordination and alignment in climate policies between governments, as well as widespread adoption of zero emission equipment. Increased support for industries and businesses will be needed to advance carbon capture, utilization, and storage technologies – helping these technologies to evolve from research and development to broad commercialization. Increased awareness about the opportunities and benefits of a low carbon economy, powered by clean, renewable energy will help transition towards deep greenhouse gas reduction.

Investments in private and public infrastructure also underpin industry and business climate resilience. Identifying climate risks and vulnerabilities for businesses will better inform business decision-making. Knowledge sharing and better planning will make it easier for businesses in region to respond to the impacts of climate change and make the shift towards a decarbonized future.

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 few years, will make a major difference to accelerating the region’s drive to a carbon neutral and resilient industry.

<b><i>Climate 2050 Industry and Business Action Timeline</i></b>			
	<b>2021-2023</b>	<b>2024-2029</b>	<b>2030-Beyond</b>
<b>Strategies for Achieving Carbon Neutrality in Industry and Business</b>			
<b>1. Accelerate Emissions Reductions from Industrial Facilities</b>	More Stringent Greenhouse Gas Requirements for Large Industrial Emitters		
	Integrate Greenhouse Gases into Emission Regulations and Permits		
	Implement Renewable Gas Content Requirements		
	Industrial Emission Reduction Incentives		
	Develop Sector-Specific Regulations		
		Provincial and Federal Industrial	

Climate 2050 Industry and Business Action Timeline			
	2021-2023	2024-2029	2030-Beyond
Strategies for Achieving Carbon Neutrality in Industry and Business			
		Emission Standards	
	Carbon Tariffs		
	Regional Industrial Emissions Working Group		
		Phase out High Global Warming Refrigerants	
2. Reduce Non-Road Emissions and Support Early Adoption of Zero Emission Non-Road Equipment.	Tighten Emissions Regulation for Non-Road Diesel Engines		
	Emission Standards for New Non-Road Equipment		
	Funding for Cleaner Non-Road Equipment		
		Identify Infrastructure Needs for Zero Emission Non-Road Equipment	
		Encourage Cleaner Non-Road Equipment through Municipal Approvals	
		Awareness Program on Zero Emission Non-Road Equipment	
	Transition Corporate Non-Road Fleet to Zero Emissions		
3. Explore Opportunities for Technological Carbon Capture	Carbon Capture in Metro Vancouver Region		
		Develop Carbon Capture Standards	
4. Reduce Emissions through Procurement and other Business Practices		Regional Low Carbon Procurement	
		Integrate Climate Considerations into Standard Business Practices	
	Corporate Low Carbon Corporate Procurement		
Strategies for Climate Resilience in Industry and Business			
5. Assess climate vulnerabilities for businesses in the region	Assess Regional Climate Risks and Vulnerability to Support Business Decision-making		
	Identify Climate Vulnerability by Clusters with Industry and Business Sectors		
		Support Knowledge-Sharing to Increase Resilience to Severe Storms and Flooding	

<i>Climate 2050 Industry and Business Action Timeline</i>			
	2021-2023	2024-2029	2030-Beyond
<b>Strategies for Achieving Carbon Neutrality in Industry and Business</b>			
<b>6. Support the resilience of industrial lands through better planning</b>		Coordinate Flood Protection and Flood Risk Management for Industrial Lands.	
<b>7. Improve Business Resilience to Extreme Heat and Air Quality Events</b>		Support Employers in Developing Response Plans for Extreme Heat and Air Quality Events.	
<b>8. Support industrial water conservation to increase resilience to shifting precipitation patterns</b>		Apply Leading Water Efficiency Standards to Industry	
		Promote water efficiency retrofit incentives and rebates for industries and business.	

## Measuring 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 Industry and Business 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 carbon neutral and resilient future.

Roadmap Element	Key Performance Indicator	Data Source	Data is Currently Collected
<b>Accelerate Emission Reductions from Industrial Facilities</b>	tCO <sub>2</sub> e attributed to the industrial sector	Regional GHG inventory Province	Yes
	Energy source breakdown for industrial facilities (GJ)	Permits, BC Hydro, Fortis BC	Partial
	tCO <sub>2</sub> e from energy use at industrial facilities	Permits, BC Hydro, Fortis BC	Partial
	Number of industrial facilities with a demand-side management plan or environmental management system	TBD	TBD
	GHG intensity for industrial facilities	TBD	TBD
<b>Reduce Non-Road Emissions and Support Early Adoption of Zero Emission Non-Road Equipment.</b>	Sale of low- and zero emission non-road equipment including electric, hybrid, hydrogen (number of new equipment sales, % of total sales)	Federal Province Market research firms	Partial
	Regional equipment registration by model year, engine tier and fuel type [fossil diesel, fossil gas, biofuels, electricity, hydrogen (Gigajoules, GJ)]	Metro Vancouver – Non Road Diesel Engine Emission Regulation Port of Vancouver	Partial
	Operational hours by equipment model year, size, engine type (hours)	Metro Vancouver- Non Road Diesel Engine Emission Regulation Port of Vancouver	Partial

Roadmap Element	Key Performance Indicator	Data Source	Data is Currently Collected
	Percentage breakdown of registered fleet compared to estimated total regional fleet.	ICBC Metro Vancouver – NRDEE Metro Vancouver BC Hydro Province	Partial
	Regional equipment mix by engine type	ICBC Metro Vancouver – NRDEE	No
<b>Explore Opportunities for Technological Carbon Capture</b>	TBD	TBD	TBD
<b>Reduce Emissions through Procurement and other Business Practices</b>	Number of Metro Vancouver member jurisdiction that require product information (e.g., Environmental Product Declarations) in their procurement	TBD	TBD
	Number of companies certified as B corporation in the Metro Vancouver region	TBD	TBD
<b>Assess climate vulnerabilities for businesses in the region</b>	TBD	TBD	TBD
<b>Support the resilience of industrial lands through better planning</b>	TBD	TBD	TBD
<b>Improve Business Resilience to Extreme Heat and Air Quality Events</b>	TBD	TBD	TBD

Roadmap Element	Key Performance Indicator	Data Source	Data is Currently Collected
Support industrial water conservation to increase resilience to shifting precipitation patterns	TBD	TBD	TBD

## Glossary

**Carbon leakage** refers to the situation that may occur if, for reasons of cost related to climate policies that aim to reduce emissions within a region, facilities or businesses transfer production to and increase emissions in other jurisdictions where carbon policy is either less ambitious or does not exist. This can lead to a net increase in global emissions.

**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 capture, utilization, and storage (also CCUS)** refer to different technological process that involves capturing carbon dioxide emissions from industrial facilities, or directly from the atmosphere. Captured carbon dioxide is then compressed and transported, to be utilized or to be safely and permanently stored.

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

**Circular economy** is an economy where the value of products is retained after their initial use through reuse, repair and remanufacturing. Keeping products functioning at their highest potential reduces embodied emissions and reduces emissions associated with waste management. Transitioning to a circular economy will gradually decouple economic activity from the consumption of finite resources by designing waste out of the system and helping to regenerate natural systems.

**Clean, renewable energy** is derived from sources with low or zero emissions or from sources that can be replenished over days or years.

**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.

**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.

**Decarbonization (Decarbonize)** refers to the removal of carbon dioxide or greenhouse gases from a system or process.

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

**Economy** is the system of a country or region, typically involving the production and consumption of goods and services.

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

**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 (CO<sub>2</sub>) and nitrous oxide (N<sub>2</sub>O) as well as short-lived climate forcers such as methane (CH<sub>4</sub>), 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.

**Hazard** refers to a dangerous phenomenon, substance, human activity, or condition. In this context, hazards are caused or made worse by climate change. Examples include rainstorms, extreme weather, wildfires, storm surges, landslides and floods.

**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.

**Industry** refers to any group of businesses that produces or distributes a common set of goods or services. For example, the Construction industry includes businesses involved in constructing, renovating and repairing structures, and those working on engineering and infrastructure projects. Other examples include Trade, Transportation and Warehousing, which are associated with distribution and logistics functions, and Manufacturing where businesses transform materials or substances into products.



**Impacts** refers to the consequences of realized risks on ecosystems, economies, infrastructure and communities. Impacts may be referred to as consequences or outcomes, and can be adverse or beneficial.

**Lifecycle greenhouse gas emissions** refers to greenhouse gases associated with the production and use of a material or energy source, from feedstock extraction, raw materials processing, transportation to end-use. For example, lifecycle emissions of gasoline would span all emissions associated from extraction of oil from the ground till combustion in a vehicle.

**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.

**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.

**Sector** is a group of industries that produces related goods or provides services.

**Supply chain** refers to the relationship between a company and its suppliers, including the steps taken from raw materials to getting the product or service to the customer, all aimed for overall customer satisfaction. Supply chains focus primarily on reducing costs and attaining operational excellence.

**Value chain** refers to a process in which a company adds value to its raw materials to produce products eventually sold to consumers. The value chain gives companies the ability to create value exceeding the cost of providing its good or service to customers – a competitive advantage in the industry, which requires alignment between what the customer wants, i.e., the demand chain, and what is produced via the supply chain.

**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).

DRAFT

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To: Climate Action Committee

From: Julie Saxton, Air Quality Planner  
Fatima Ansari, Project Engineer  
Parks and Environment Department

Date: February 8, 2022

Meeting Date: March 11, 2022

Subject: **Mobile Air Quality Monitoring Using Drone-Based Sensors**

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### **RECOMMENDATION**

That the MVRD Board authorize staff to use the allocation from the Regional District Sustainability Innovation Fund for the project "Mobile Monitoring of Fugitive and Other Industrial Air Emissions with 'Flying Labs'" to evaluate the feasibility of using other mobile monitoring platforms for air emissions assessment.

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### **EXECUTIVE SUMMARY**

Drone flights were conducted carrying small sensors to measure air contaminant concentrations in three locations within the Metro Vancouver region. The work was part of a project funded by the Sustainability Innovation Fund to assess the cost and feasibility of mobile monitoring using drone-mounted small sensors to measure air contaminants from emissions sources in the region that are difficult to access or located in hazardous environments. Results revealed challenges in collecting data of sufficient quality to effectively assess emissions using drone-based monitoring platforms equipped with the relatively new technology of small sensors. Staff propose an alternative approach to completing the project that would enable a more robust assessment of using small sensors on additional types of mobile monitoring platforms.

### **PURPOSE**

This report provides information about the first phase of a Sustainability Innovation Fund (SIF) project to evaluate the feasibility of using a drone-mounted 'flying laboratory' for monitoring of air emissions and seeks MVRD Board authorization to evaluate additional mobile monitoring platforms using the remaining budget for this project.

### **BACKGROUND**

At its February 28, 2020 meeting, the MVRD Board approved an allocation from the Regional District Sustainability Innovation reserve fund to assess the cost and feasibility of mobile monitoring using drone-mounted small sensors to measure air contaminants from emissions sources in the region that are difficult to access or located in hazardous environments. The project proposal focussed on drone technology and did not contemplate the use of other types of mobile monitoring platforms.

The first phase of the project has been completed. This report conveys the challenges with the use of drone-mounted monitoring equipment identified during the feasibility assessment, and seeks authorization to build on the findings by evaluating other types of mobile monitoring equipment.

## **APPROACH TO EVALUATING ‘FLYING LABORATORIES’**

Monitoring is an important tool to better understand the potential for impacts from air emissions and to identify the need to mitigate those impacts. However, measuring emissions is a challenge when the emissions are sporadic or from ‘fugitive’ sources that are diffuse and not discharged from a vent or stack. There are also challenges with assessing an emissions plume as it moves beyond the boundaries of a facility. The use of drone-mounted equipment was identified as a potential new approach to air emissions monitoring and sampling to address some of those challenges.

Staff sought to assess the feasibility of using drone-mounted equipment in this phase of the project through a series of test flights. The important test parameters of interest included:

- Degree of flexibility in flight planning;
- Flight duration;
- Accuracy of equipment positioning;
- Quality of air monitoring and sampling information; and
- Overall performance reliability.

## **DRONE-BASED MONITORING TECHNOLOGY**

An extensive search for commercially available air quality sensors found only one company that offers sensors on a platform specifically designed for use on drones. Metro Vancouver worked with this company, Scentroid, to use licensed drone operators to fly a commercial battery-powered drone carrying small sensors to measure air contaminants that would be emitted from a range of sources. The equipment was capable of collecting data for three size fractions of particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub> and PM<sub>1</sub>), nitrogen dioxide, sulphur dioxide, and total volatile organic compounds (VOC), as well as positional information. The demonstration unit used in this work was not capable of collecting a “grab sample”, which is a cumulative sample over time, which is suitable for subsequent analysis in a laboratory, to provide more detailed information about the chemical composition of the sample, and concentrations of specific VOC.

A total of nine drone flights were conducted on August 17 and 18, 2021, on Annacis Island, in the Coquitlam Watershed, and in central Surrey. These sites were selected to give a range of emission sources, as follows:

- Wastewater treatment plant, industry, and traffic on a major highway (Annacis Island);
- Background measurements with few local sources of anthropogenic emissions (Coquitlam watershed); and
- non-road diesel construction equipment and other sources of particulate matter (central Surrey).

## **CONSTRAINTS ON DRONE FLIGHT PLANNING**

Drone flights can only be done in dry weather and visual contact with the drone must be maintained. In addition, Transport Canada’s rules for drone operations restrict flights in areas around airports, heliports and aerodromes. As a result, in many parts of the region basic drone operations cannot be conducted (see Reference) without special permission. It is also necessary to use qualified drone pilots to ensure safe operation of the equipment. These requirements limit the flexibility of using drones and, for this project, constrained the testing of the air monitoring sensors.

## FINDINGS FROM TEST FLIGHTS

Data from the flights allowed spatial representations of air quality over the flight path to be created, as shown in Figure 1.

### Positioning and Emissions Measurement

Analysis of the data revealed inconsistencies in measurements of air contaminants as well as apparent errors in time stamping, which may have been affected by the lack of a power connection. In addition, the time needed to record a valid measurement differed for each sensor. This meant that the data for each air contaminant did not always represent conditions in the same location. Furthermore, reliable time stamping is necessary to connect measurements to a location, which is a critically important feature when using mobile monitoring equipment to identify potential sources of emissions. These factors complicated the interpretation of data collected.

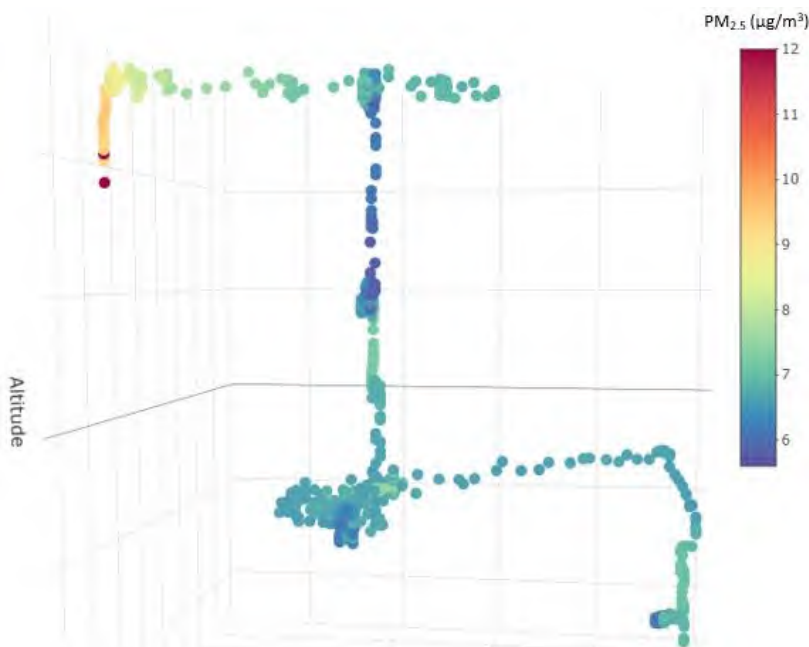


Figure 1. Plot of  $PM_{2.5}$  concentrations at different elevations above a test site.

### Flight Duration

The maximum flight time of the drone used in this project was found to be approximately 20 minutes before the drone's battery power was consumed. The exact flight time depended on a number of factors, including the altitude at which the drone was flown and the flight path. A limited number of data points could be collected in this short time.

### Performance Reliability in Absence of Power Connection

The battery on the air sensor unit allowed it to be operated for several hours of sampling, but the air sensor unit needed a power connection while not actively collecting data to remain ready for operation. These requirements limit the use of this equipment in locations with no access to power, such as from a vehicle in a remote location.

## ALTERNATIVE MOBILE MONITORING PLATFORMS

Simpler mobile platforms have been used by researchers and other agencies to assess air quality in communities. These platforms, including vehicles and bicycles, offer opportunities to overcome some of the limitations of monitoring air emissions with sensors mounted on a drone, but potentially sacrificing the ability to monitor at different altitudes. Using alternative mobile platforms would allow more measurements to be made with better time stamping, to better evaluate sensor accuracy. Removing the complexity of drone flight planning and reducing reliance on licensed drone pilots would provide more flexibility with test site selection to enhance Metro Vancouver's understanding

of emissions from industrial sources, site-specific factors that affect the dispersion of emissions, and the impacts of emissions on the surrounding environment.

The focus of modifying this project to include other mobile platforms would be to work with academic partners who have expertise using mobile monitoring platforms or specific sensor-based instruments, rather than generic air quality monitoring capabilities.

### **ALTERNATIVES**

1. That the MVRD Board authorize staff to use the allocation from the Regional District Sustainability Innovation Fund for the project “Mobile Monitoring of Fugitive and Other Industrial Air Emissions with ‘Flying Labs’” to evaluate the feasibility of using other mobile monitoring platforms for air emissions assessment.
2. That the Climate Action Committee receive for information the report titled “Mobile Air Quality Monitoring Using Drone-Based Sensors”, dated February 8, 2022 and provide alternate direction to staff.

### **FINANCIAL IMPLICATIONS**

Funding was received from the Regional District Sustainability Innovation Fund to evaluate the feasibility of using a ‘flying laboratory’ of sensors mounted on a drone to monitor air emissions. Under Alternative 1, staff seek to complete the next phase of the project in 2022, with the proposed modification, using the remaining budget.

### **CONCLUSION**

Drone flights were conducted to assess the practicalities of using drone-mounted sensors for air emission monitoring. The objectives of the project were to assess new mobile technologies to support the air quality regulatory function. The results from the initial phase of the project revealed challenges with using currently available drone-based small sensor air monitoring technology.

Staff recommend Alternative 1 and are seeking authorization to expand testing of the use of small sensors to additional mobile platforms to better address some of the issues and limitations identified during test flights. The alternative approach to completing the “Mobile Monitoring of Fugitive and Other Industrial Air Emissions with ‘Flying Labs’” project would allow a more complete assessment of the use of sensor technology on mobile platforms. It would continue to meet the objectives of the original proposal and may offer insights into the use of these technologies for various monitoring applications.

### **Reference**

Map of Flight Restriction Areas for Drones: <https://nrc.canada.ca/en/drone-tool/>.

50313577

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To: MVRD Board of Directors

From: Climate Action Committee

Date: March 14, 2022 Meeting Date: March 25, 2022

Subject: **Addressing the Use of Heavy Fuel Oil and Exhaust Gas Cleaning Systems in Marine Vessels in the Region**

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**CLIMATE ACTION COMMITTEE RECOMMENDATIONS**

That the MVRD Board authorize the Board Chair to:

- a) write to the federal ministers of Environment and Climate Change Canada and Transport Canada to request the prohibition of scrubbers and require the use of cleaner, lower sulphur fuels that meet sulphur content limits without the use of scrubbers, in the North American Emission Control Area (ECA), and prioritize the use of shore power; and
- b) write to the Vancouver Fraser Port Authority to express support for their actions to prohibit the discharge of scrubber washwater while a vessel is at berth or anchor and further encourage this action to apply to vessels transiting all the waters within the Port, as well as support their air emissions program that incentivizes the use of cleaner fuels and shore power.

That the MVRD Board authorize the Board Chair to write the port authorities of Seattle, Tacoma and Prince Rupert to call for prohibition on the discharge of scrubber washwater, similar to the actions of the Vancouver Fraser Port Authority.

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At its March 11, 2022 meeting, the Climate Action Committee considered the attached report titled “Addressing the Use of Heavy Fuel Oil and Exhaust Gas Cleaning Systems in Marine Vessels in the Region”, dated February 11, 2022. The Committee subsequently amended the recommendation as presented above in underline style, to call for a harmonized approach amongst all port authorities in the Pacific Northwest.

This matter is now before the Board for its consideration.

**Attachment**

“Addressing the Use of Heavy Fuel Oil and Exhaust Gas Cleaning Systems in Marine Vessels in the Region”, dated February 11, 2022

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To: Climate Action Committee

From: Shelina Sidi, Senior Project Engineer  
Derek Jennejohn, Lead Senior Engineer  
Parks and Environment Department

Date: February 11, 2022 Meeting Date: March 11, 2022

Subject: **Addressing the Use of Heavy Fuel Oil and Exhaust Gas Cleaning Systems in Marine Vessels in the Region**

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**RECOMMENDATION**

That the MVRD Board authorize the Board Chair to:

- a) write to the federal ministers of Environment and Climate Change Canada and Transport Canada to request the prohibition of scrubbers and require the use of cleaner, lower sulphur fuels that meet sulphur content limits without the use of scrubbers, in the North American Emission Control Area (ECA), and prioritize the use of shore power; and
  - b) write to the Vancouver Fraser Port Authority to express support for their actions to prohibit the discharge of scrubber washwater while a vessel is at berth or anchor and further encourage this action to apply to vessels transiting all the waters within the Port, as well as support their air emissions program that incentivizes the use of cleaner fuels and shore power.
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**EXECUTIVE SUMMARY**

At its September 10, 2021 meeting, the Climate Action Committee received a delegation about “Pollution from Exhaust Gas Cleaning Systems on Vessels,” highlighting impacts from use of heavy fuel oil (HFO) and scrubbers. HFO and scrubbers are increasingly being used on marine vessels as alternative mechanisms to comply with international fuel sulphur content standards, instead of using cleaner lower sulphur fuels. Continued use of HFO and rapid uptake of scrubber technology has resulted in increased emissions of particulate matter, black carbon, and greenhouse gases, as well as marine impacts from the discharge of scrubber washwater into the sea. The federal government and the Vancouver Fraser Port Authority are seeking to address the issues of air emissions and scrubber washwater discharge. Metro Vancouver can advocate to the federal government to take action to prohibit scrubber use and require cleaner lower sulphur fuels, and support work the Port is doing to address water pollution.

**PURPOSE**

To respond to direction from the Climate Action Committee that staff report back with options for addressing the use of heavy fuel oil (HFO) and exhaust gas cleaning systems in marine vessels in the region in response to a delegation received at its September 10, 2021 meeting.

**BACKGROUND**

At its September 10, 2021 meeting, the Committee received a delegation from Anna Barford of Stand.earth. The presentation, titled “Pollution from Exhaust Gas Cleaning Systems on Vessels,” provided an overview on the pollution from marine vessels’ exhaust gas cleaning systems, highlighting



air pollution and water discharge issues with the use of HFO with scrubber technologies. The delegation indicated that air pollution from marine vessels should be addressed both at berth and in Canada's territorial waters, and proposed the following local and federal actions:

- *Pass a resolution calling on Transport Canada to take action on air pollution and dumping from vessels, including stopping the use of scrubbers, mandating the fuel standard without the scrubber work around, as California has done.*
- *Work with the Vancouver Fraser Port Authority to require or incentivize the use of marine gas oil, instead of HFO with scrubbers.*

After consideration, the Climate Action Committee adopted the following resolution:

*That the Climate Action Committee direct staff to report back with options for addressing the use of heavy fuel oil and exhaust gas cleaning systems in marine vessels in the region in response to the September 10, 2021 delegation from Anna Barford, Stand.earth.*

This report responds to the Committee's direction.

### **THE USE OF SCRUBBERS IN MARINE VESSELS**

On January 1, 2020, the International Maritime Organization (IMO) introduced a fuel standard that reduced the sulphur content in marine fuels from 3.5% to 0.5% by mass, for vessels operating outside an Emission Control Area (ECA). Prior to this, a North American ECA was established in March 2010 and became enforceable in August 2012; it requires that marine vessels operating in North American waters (defined as within 200 nautical miles of the coastline) use fuel with a maximum allowable fuel sulphur content of 0.1%. However, marine vessels can continue to use HFO with higher sulphur content if they install scrubbers as an exhaust gas cleaning system, as an alternate means of achieving compliance with IMO fuel sulphur standards.

Scrubbers together with using HFO is a lower cost option than using the lower sulphur ECA-compliant fuels. This alternative compliance mechanism has resulted in increased installations of scrubbers on marine vessels. While this technology is effective in achieving equivalent reductions of sulphur oxides, it results in higher emissions of particulate matter, black carbon, and greenhouse gases, compared with using ECA-compliant fuels. Additionally, the sulphur and other contaminants removed from the exhaust gas, including carcinogens such as polycyclic aromatic hydrocarbons (PAHs) and heavy metals, are discharged as effluent into the aquatic environment.

### **ACTIONS BY OTHER AGENCIES**

Other levels of government have considered the issue of pollution related to the use of scrubbers on marine vessels. Environment and Climate Change Canada (ECCC) commissioned a report in 2020 that assessed the impacts of scrubber use on air emissions and water pollution (see Reference). The report recommended that countries take unilateral action as follows:

- 1) an immediate prohibition on using scrubbers to comply with the Canadian portion of the North American ECA because they are not equivalently effective at reducing air pollution as ECA-compliant fuels;
- 2) an immediate prohibition on all scrubber discharges in Canadian ports, internal waters, and territorial seas because they contribute to acidification and water pollution that can negatively affect marine life.

Regionally, the Vancouver Fraser Port Authority (VFPA) seeks to reduce emissions associated with shipping, as identified in the *Northwest Ports Clean Air Strategy*. Actions that reduce environmental impacts are also incorporated into VFPA's Port Information Guide, which outlines practices and procedures for vessels operating in the Port's waters. In November 2021, the Vancouver Fraser Port Authority issued a Notice of Amendment to update its Port Information Guide to include the prohibition of exhaust gas cleaning systems washwater discharges from vessels at berth and anchor. This prohibition is intended to be implemented on March 1, 2022. VFPA has also committed to extend this prohibition to vessels transiting all waters within the Port of Vancouver. VFPA also incentivizes the use of shore power and cleaner fuels and technologies by providing discounts on harbour dues to shipping companies that voluntarily take action to reduce their environmental impact.

### **METRO VANCOUVER ACTIONS**

Metro Vancouver's *Clean Air Plan* and *Climate 2050 Transportation Roadmap* both identify the need to accelerate emission reductions from marine vessels by advocating to other levels of government to prioritize the use of cleaner engines, fuels, and technologies. The following actions in the *Clean Air Plan* are connected to the issues raised in this report:

- Action 1.4.1 – Accelerate Emission Reductions from Marine Vessels. Advocate to the Government of Canada and the BC Government to develop and implement long-term strategies to accelerate emission reductions from ocean-going marine vessels, harbour vessels and passenger ferries in the region. Different strategies may be needed for domestic and international vessels. In the short term, the strategies 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 strategies should establish more stringent greenhouse gas emission targets, standards and regulations, to achieve a carbon neutral marine sector by 2050.
- Action 1.4.3 – Support Emissions Reduction Actions at Vancouver Fraser Port Authority. Work with the Vancouver Fraser Port Authority to implement actions that reduce port-related greenhouse gas emissions and minimize air quality impacts on port-adjacent neighbourhoods. Areas of collaboration include phasing out older higher emitting equipment, increasing the availability of renewable fuels, developing infrastructure for zero emission equipment (e.g., shore power), and accelerating the adoption of zero emission solutions. Other opportunities include pilot or demonstration projects, and short-sea shipping.

Staff have been working with the agencies noted above in support of these actions. The recommendations presented in this report will further support the actions in the *Clean Air Plan*.

### **ALTERNATIVES**

1. That the MVRD Board authorize the Board Chair to:
  - a) write to the federal ministers of Environment and Climate Change Canada and Transport Canada to request the prohibition of scrubbers and require the use of cleaner, lower sulphur fuels that meet sulphur content limits without the use of scrubbers, in the North American Emission Control Area (ECA), and prioritize the use of shore power; and
  - b) write to the Vancouver Fraser Port Authority to express support for their actions to prohibit the discharge of scrubber washwater while a vessel is at berth or anchor and further encourage

this action to apply to vessels transiting all the waters within the Port, as well as support their air emissions program that incentivizes the use of cleaner fuels and shore power.

2. That the Climate Action Committee receive for information the report dated February 11, 2022, titled “Options for Addressing the Use of Heavy Fuel Oil and Exhaust Gas Cleaning Systems in Marine Vessels in the Region” and provide alternate direction to staff.

### **FINANCIAL IMPLICATIONS**

Under Alternative 1, the recommended actions can be completed within the approved budget for 2022.

### **CONCLUSION**

Heavy fuel oils are being used in conjunction with scrubber systems on marine vessels as an alternative, lower cost means of complying with international fuel sulphur content standards, instead of using cleaner low-sulphur fuels. While this compliance mechanism allows for compliance with fuel sulphur requirements, the rapid uptake of this scrubber technology has resulted in higher air contaminant emissions such as particulate matter, black carbon, and greenhouse gases, as well as water pollution impacts due to discharge of scrubber washwater into the sea. Staff recommend Alternative 1, that the MVRD Board advocate to the federal government and Vancouver Fraser Port Authority to prohibit the use of scrubbers and the associated discharge of effluent in the North American Emission Control Area, require the use of cleaner lower sulphur fuels and promote the use of shore power.

### **Reference**

[Air emissions and water pollution discharges from ships with scrubbers](#) (dated November 2020)

49337294

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To: MVRD Board of Directors

From: Chris Plagnol, Corporate Officer

Date: March 4, 2022 Meeting Date: March 25, 2022

Subject: **Proposed Amendment to the 2022 Schedule of Regular Board Meetings**

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**RECOMMENDATION**

That the MVRD Board amend the 2022 schedule of regular Board meetings by:

- a) rescheduling the Board Strategic Plan Review meeting set for February 26, 2022 to July 7, 2022 at 9:15 a.m.; and
  - b) rescheduling the Board Budget Review meeting set for April 27, 2022 to April 14, 2022 at 1:00 p.m.
- 

**EXECUTIVE SUMMARY**

Two board meetings on the approved 2022 annual schedule of regular board meetings need to change. The new proposed dates are July 7, 2022 and April 14, 2022. According to the *Procedure Bylaw*, these proposed changes must be approved by board resolution.

**PURPOSE**

To seek approval of an amendment to the 2022 schedule of regular Board meetings.

**BACKGROUND**

At its October 29, 2021 meeting, the MVRD Board received the annual schedule of regular board meetings for 2022, as required by the Board *Procedure Bylaw*. Subsequent to the dates being approved at that meeting, it was determined that two specific dates need to change to better accommodate the meeting schedule.

According to the *Procedure Bylaw*, any changes to the schedule of regular board meetings must be approved by board resolution.

**PROPOSED BOARD MEETING DATE CHANGES**

Two dates on the annual schedule of regular board meetings for 2022 need to be rescheduled, as follows:

**Board Strategic Plan Review Meeting** (originally scheduled for February 26, 2022)

Staff were notified that the meeting scheduled for Saturday, February 26, 2022 to consider a review of the Board Strategic Plan was too early in the year. A date later in the spring or early summer is preferred. Quorum has been confirmed for the following proposed alternative date for the board's consideration: July 7, 2022 at 9:15 a.m.

**Board Budget Review Meeting** (originally scheduled for April 27, 2022)

Staff were notified of a scheduling conflict with some member jurisdictions associated with the date of the April 27, 2022 for the Board Budget meeting. Quorum has been confirmed for the following proposed alternative date for the board's consideration: April 14, 2022 at 1:00 p.m.

**ALTERNATIVES**

1. That the MVRD Board amend the 2022 schedule of regular Board meetings by:
  - a) rescheduling the Board Strategic Plan Review meeting set for February 26, 2022 to July 7, 2022 at 9:15 a.m.; and
  - b) rescheduling the Board Budget Review meeting set for April 27, 2022 to April 14, 2022 at 1:00 p.m.
2. That the MVRD Board refer the report dated March 4, 2022, titled "Proposed Amendment to the 2022 Schedule of Regular Board Meetings" to staff for identification of alternatives dates to those proposed.

**FINANCIAL IMPLICATIONS**

Board meeting expenses and remuneration have been allocated in the annual budget. There is no impact to the budget with respect to any proposed meeting date changes.

**CONCLUSION**

Two date changes to the Board's annual schedule of regular meetings are proposed. As set out in the report, a change to the dates of the February 26, 2022 and April 27, 2022 Board meetings is suggested. Pursuant to the Board *Procedure Bylaw*, any date changes must be made by resolution. Alternative 1 is recommended.

50781280

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To: MVRD Board of Directors

From: Regional Planning Committee

Date: March 9, 2022 Meeting Date: March 25, 2022

Subject: **Consideration of Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022, a bylaw to adopt Metro 2050**

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**REGIONAL PLANNING COMMITTEE RECOMMENDATION**

That the MVRD Board:

- a) give first and second readings to *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, a bylaw that would adopt *Metro 2050* as the regional growth strategy for Metro Vancouver;
- b) refer *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, to a Public Hearing to be held in April \_\_\_, 2022; and
- c) given the urgent need to respond to climate change and prepare for extreme weather events, direct staff to undertake work and engagement with an aim to proposing an early amendment to *Metro 2050* post-adoption to strengthen climate action language and policy including the intent to improve integration of climate action into other *Metro 2050* priorities.

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At its March 4, 2022 meeting, the Regional Planning Committee considered the attached report titled “Consideration of *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, a bylaw to adopt *Metro 2050*”, dated February 18, 2022.

Discussion ensued on recommendation c) and whether the language could be amended to reflect the Committee and Board’s interest in striving for stronger climate action and policy in *Metro 2050* via an early amendment post adoption. The Committee subsequently amended the recommendation as presented above in underline style.

**MVRD BOARD DIRECTION NEEDED**

Following the Regional Planning Committee meeting, staff met to discuss the scheduling for the *Metro 2050* Public Hearing as well as the option of delegating the Public Hearing to a subset of Directors.

*Scheduling a Date for the Metro 2050 Public Hearing*

The recommendation passed by the Regional Planning Committee did not include a date for the requisite Public Hearing for the *Metro 2050* bylaw. Metro Vancouver staff recommend that the public hearing be scheduled for **6:00 p.m. on Wednesday, April 20, 2022**. Should there be a need to adjourn the public hearing that day, Thursday, April 21 will be the backup date.

*Delegation to Certain Board Members*

The MVRD Board has the ability to delegate the Public Hearing to a subset of Directors, otherwise the Public Hearing would be the full complement of Directors.

As a result, Metro Vancouver staff recommend the same process followed in 2011 during the approval of *Metro 2040* be followed again, and that a subset of MVRD Board members be delegated the responsibility of the Public Hearing. The Board cannot delegate the Public Hearing to a committee, only to identified Board directors, therefore each Director being delegated must be identified. Staff recommend that the nine Directors on the Regional Planning Committee, the Board Chair and Vice Chair and the five Chairs or Vice Chairs of Metro Vancouver Committees with a policy focus in *Metro 2050* be assigned this responsibility. Standing Committees with a policy focus in *Metro 2050* include Climate Action, Housing, Liquid Waste, Flood Resiliency Task Force and Regional Parks.

#### *Establishing Quorum for the Public Hearing*

The Board has the ability to set the minimum quorum for the Public Hearing. Metro Vancouver staff recommend that quorum be set at 6 members.

#### *Assigning the Chair of the Public Hearing*

The Board must assign a Chair and Vice Chair for the Public Hearing. Metro Vancouver staff recommend that Mayor Jonathan Coté, as Chair of the Regional Planning Committee, be assigned the role of Chair, and Director Jack Froese, as Vice Chair of the Regional Planning Committee be assigned the role of Vice Chair for the Public Hearing.

This matter is now before the Board for its consideration.

### **RECOMMENDATIONS**

Based on the above, if the MVRD Board wishes to delegate the April 20, 2022 Public Hearing to a subset of MVRD Board Directors, staff recommend that the following recommendation be considered:

That the MVRD Board:

- a) give first and second readings to *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, a bylaw that would adopt *Metro 2050* as the regional growth strategy for Metro Vancouver;
- b) refer *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, to a Public Hearing to be held on April 20, 2022 at 6:00 p.m. with the following conditions:
  - 1) delegate the holding of the Public Hearing to the following Board Directors or their alternates:
    - i. Jonathan Coté, New Westminister
    - ii. Jack Froese, Langley Township
    - iii. Laurie Guerra, Surrey
    - iv. Mike Hurley, Burnaby
    - v. John McEwen, Anmore
    - vi. Lisa Muri, North Vancouver District
    - vii. Harold Steves, Richmond
    - viii. Rob Vagramov, Port Moody
    - ix. Brad West, Port Coquitlam
    - x. Sav Dhaliwal, Burnaby
    - xi. Linda Buchanan, North Vancouver City
    - xii. Adriane Carr, Vancouver

- xiii. Richard Stewart, Coquitlam
- xiv. Mike Morden, Maple Ridge
- xv. Bill Dingwall, Pitt Meadows
- xvi. Michael Wiebe, Vancouver;
- 2) appoint Director Jonathan Côté as the Chair and Director Froese as the Vice Chair of the Public Hearing;
- 3) constitute quorum for the purpose of the Public Hearing to any six Directors named above; and
- c) given the urgent need to respond to climate change and prepare for extreme weather events, direct staff to undertake work and engagement with an aim to proposing an early amendment to *Metro 2050* post-adoption to strengthen climate action language and policy including the intent to improve integration of climate action into other *Metro 2050* priorities.

**Attachment**

“Consideration of Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022, a bylaw to adopt Metro 2050”, dated February 18, 2022

49582544



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To: Regional Planning Committee

From: Sean Galloway, Director, Regional Planning and Electoral Area Services and  
James Stiver, Division Manager, Regional Land Use Policy, Regional Planning and  
Housing Services

Date: February 18, 2022 Meeting Date: March 4, 2022

Subject: **Consideration of Metro Vancouver Regional District Regional Growth Strategy  
Bylaw No. 1339, 2022, a bylaw to adopt Metro 2050**

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**RECOMMENDATION**

That the MVRD Board:

- d) give first and second readings to *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, a bylaw that would adopt *Metro 2050* as the regional growth strategy for Metro Vancouver;
- e) refer *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, to a Public Hearing to be held in April \_\_\_\_, 2022; and
- f) given the urgent need to respond to climate change and prepare for extreme weather events, direct staff to undertake work and engagement with an aim to proposing an early amendment to *Metro 2050* post-adoption to strengthen climate action language and policy.

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**EXECUTIVE SUMMARY**

This report presents *Metro 2050*, via *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, to the MVRD Board for consideration of first and second readings and referral to a Public Hearing. *Metro 2050* is an update to *Metro Vancouver 2040: Shaping our Future*, and is the culmination of close to three years of research, policy analysis, and deep engagement. The MVRD Board scoped the update to:

- extend the projections and policies to the year 2050;
- align with Transport 2050;
- respond to member jurisdiction requests for improvements; and
- strengthen policy actions to address climate change, tackle the challenges of providing affordable housing (particularly near transit), incorporate social equity outcomes, and strengthen First Nations content and relationships, and do more to protect the environment.

*Metro 2050* introduces important new policies that will help Metro Vancouver, member jurisdictions, TransLink and others address the significant challenges facing this region. Adopting this bylaw will result in the adoption of *Metro 2050* as the regional growth strategy for Metro Vancouver, and *Metro 2040* would be repealed.

## PURPOSE

The purpose of this report is to present *Metro Vancouver Regional District Regional District Regional Growth Strategy Bylaw No. 1339, 2022* for consideration of first and second readings and to refer the bylaw to a Public Hearing which is being recommended for April \_\_\_\_, 2022.

## BACKGROUND

The *Greater Vancouver Regional District Regional Growth Strategy Bylaw No. 1136, 2010*, was adopted by the Board on July 29, 2011, thereby introducing *Metro Vancouver 2040: Shaping our Future (Metro 2040)* as the regional federation's regional growth strategy. This strategy has since been a strong vision and tool for managing growth to the region. The update, *Metro 2050*, is based on a comprehensive review of *Metro 2040* and extensive engagement over the past nearly three years. *Metro Vancouver Regional District Regional District Regional Growth Strategy Bylaw No. 1339, 2022* would repeal and replace *Bylaw No. 1136, 2011* (as amended).

At its April 2019 and September 2019 meetings, the MVRD Board approved the timeline and scope of work for updating the regional growth strategy (References 1 and 2). Staff were directed to work towards completing the update within the current local government election cycle. The project timeline was reviewed and adjusted in light of the COVID-19 pandemic, and in November 2020, the MVRD Board confirmed its direction to continue with the approved timeline (Reference 3).

Over the past three years, staff have implemented the Board approved engagement plan and conducted extensive research to identify opportunities to enhance the policies in the regional growth strategy and address the identified policy gaps (Reference 4). Engagement included presentations to member jurisdiction councils, meetings with members, the Province, agencies, organizations, industry, and community groups, deep input from the *Metro 2050* Intergovernmental Advisory Committee as well as public-facing webinars, dialogue events, and online comment opportunities.

At its June 25, 2021 meeting, the MVRD Board referred the draft of *Metro 2050* out for comment over a 5-month period that ended on November 26, 2021 (Reference 5). All comments received, as well as recommended changes to *Metro 2050* as a result were presented to the Regional Planning Committee and MVRD Board as an Issue-Response Table at their respective meetings in January 2022 (References 6 and 7). Some Board members expressed reservations on proceeding with *Metro 2050* at this time given the need for stronger climate action to be embedded in the plan as well as noting a couple of additional outstanding municipal concerns. As a result, the MVRD Board passed the following resolution:

*That the MVRD Board refer the matter back to staff for a one-month period in order to clarify issues raised by member municipalities and report back to the Board.*

The intent of the one-month delay is to allow time to meet with member jurisdictions with outstanding issues to see if any additional minor changes to *Metro 2050* are necessary to resolve those issues, as well as to provide additional information to the Regional Planning Committee and the MVRD Board on the climate policies included in *Metro 2050* and its relationship with *Climate 2050* and *Transport 2050*, while striving to keep to the Board approved timeline for *Metro 2050* adoption by July 2022.

Staff and elected officials from Metro Vancouver subsequently met with staff and Board members from seven municipalities who had expressed concern at the Board meeting. Beyond the many changes made as a result of over 900 comments received from the comment period, additional edits were made with an aim to resolving any concerns. The resulting *Metro 2050* bylaw is attached to this report for consideration of first and second reading (Attachment 1).

#### **ADDITIONAL RECOMMENDATION TO RESPOND TO BOARD DIRECTION**

At its February 11, 2022 meeting, the Regional Planning Committee received a report and presentation to respond to the Board direction on *Metro 2050*, *Climate 2050*, and *Transport 2050* are mutually-supportive and work together, particularly in terms of greenhouse gas reduction and climate adaptation policies and actions (Reference 9). Discussion ensued about the role of land use in climate action and that to achieve strengthened policy action in *Metro 2050* will require engagement and consensus building. As a result, the Committee Chair directed staff to bring forward an additional resolution with the *Metro 2050* bylaw in March for consideration that would set the stage for additional work through 2022 to explore the potential for stronger policy actions for *Metro 2050* via an early amendment to the plan, post adoption. The resulting recommendation is recommendation c) on this report.

#### **ADJUSTMENTS TO METRO 2050 BYLAW CONTENT**

As noted above, concern was expressed by some MVRD Board and Regional Planning Committee members over outstanding areas related to their respective municipalities and the extent of climate policy actions proposed in *Metro 2050*. As a result of additional discussions with members, *Metro 2050* has been further updated and improved as follows:

- To help curb possible speculation, provide greater clarity as to the role of Major Transit Growth Corridors (MTGCs), specifying that not all locations within MTGCs are suitable for growth and that municipalities to determine if and where appropriate locations for growth exist as new Frequent Transit Development Areas (FTDAs) (see page 17, and 1.2.2 and 1.2.7 on page 30);
- Adjust the title of Goal 3 to reflect the need to “address” climate change, not simply “respond” to it, and provide additional clarity in the Goal 3 preamble (page 53);
- Adjust the titles of Strategies 3.3 and 3.4 to reflect stronger language to “advance” land use, infrastructure, and settlement patterns that reduce energy consumption and greenhouse gas emissions and improve resilience, not merely “encourage” it (pages 61 and 64);
- Provide greater clarity on the intent of the 15% regional affordable housing target for Urban Centres and FTDAs to reflect that it is a regional goal that members contribute towards, and noting that other transit-oriented locations can also be good locations for affordable housing (see 4.2.7 a) on page 74); and
- Provide similar clarity for the Urban Tree Canopy cover target.

#### **METRO 2050 BYLAW ADOPTION**

The Board-approved project timeline for the approvals phase for *Metro 2050* is as follows:

- **March 2022** - Regional Planning Committee and MVRD Board Consider 1<sup>st</sup> and 2<sup>nd</sup> readings of the *Metro 2050* bylaw and schedule a Public Hearing;

- **March 2022** - Metro Vancouver provides notice of the Public Hearing;
- **April 2022** - MVRD Board hosts the required Public Hearing and refers the *Metro 2050* bylaw for acceptance by affected local governments;
- **May / June 2022** - Affected local government acceptance period; and
- **July 2022** - MVRD Board receives affected local government acceptances and considers 3<sup>rd</sup> and 4<sup>th</sup> reading and adoption of the *Metro 2050* bylaw.

Affected local governments are defined in the *Local Government Act* as: Metro Vancouver member municipalities (excluding Bowen Island), Tsawwassen First Nation, Fraser Valley Regional District, Squamish-Lillooet Regional District, TransLink and the Metro Vancouver Board.

Given the Board-approved timeline for the completion of *Metro 2050*, and the scheduled Regional Planning Committee and MVRD Board meeting dates, the initial bylaw readings must occur in March 2022 to allow adequate time for the Public Hearing and referral process as set out above and the opportunity for adoption by the MVRD Board in July 2022, in order to have the process completed before the local government elections in October 2022.

#### **Opportunities for Affected Local Governments to Accept or Refuse to Accept *Metro 2050***

During the affected local government acceptance period, the *Local Government Act* requires that a response of acceptance or refusal to accept be provided to Metro Vancouver via Council or Board resolution within 60 days of receipt, or the affected local government is deemed to have accepted the regional growth strategy. If an affected local government does not accept the regional growth strategy, it must indicate each provision to which it objects, the reasons for the objection, and whether it is willing for a provision to which it objects to be included in the regional growth strategy on the basis that the provision will not apply to its jurisdiction. In addition, a non-binding dispute resolution process is an option for affected local governments that may have an objection to a provision(s) of the regional growth strategy. Should the non-binding dispute resolution process not be successful, the *Local Government Act*, under Sections 440 and 441, provides for a binding dispute resolution process.

#### **ALTERNATIVES**

1. That the MVRD Board:
  - a) give first and second readings to *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, a bylaw that would adopt *Metro 2050* as the regional growth strategy for Metro Vancouver;
  - b) refer *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, to a Public Hearing to be held in April \_\_\_\_, 2022; and
  - c) given the urgent need to respond to climate change and prepare for extreme weather events, direct staff to undertake work and engagement with an aim to proposing an early amendment to *Metro 2050* post-adoption to strengthen climate action language and policy.
2. That the MVRD Board receive for information the report dated February 18, 2022, titled "Consideration of *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, a bylaw to adopt *Metro 2050*" and provide alternative direction to staff.

## FINANCIAL IMPLICATIONS

It is anticipated that the Public Hearing for *Metro 2050* required in accordance with the *Local Government Act* will cost approximately \$25,000. This funding has been budgeted and is included as part of the MVRD Board-approved 2022 budget.

## CONCLUSION

*Metro 2050* is an update to *Metro 2040* and has been developed with considerable consultation, discussion, and review over the past three years. *Metro 2050* is the collective regional vision over the next 30 years for a more sustainable, equitable, and resilient future. It reflects the extensive and collective work of Metro Vancouver and its members, and is balanced in its approach to address regional planning objectives while respecting local government interests. Given the consultation, and revisions that were made to the draft *Metro 2050* to best accommodate consensus, staff recommend alternative 1, that *Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022*, be given first and second readings, and a Public Hearing be scheduled for April, 2022.

## Attachment (48616044)

*Metro Vancouver Regional District Regional District Regional Growth Strategy Bylaw No. 1339, 2022*

## References

1. [Report dated March 28, 2019, titled "Towards Metro 2050: Updating Metro Vancouver 2040: Shaping our Future" presented to the MVRD Board at its regular meeting of April 26, 2019.](#)
2. [Report dated August 15, 2019, titled "Metro 2050 Scope and Status Update" presented to the MVRD Board at its regular meeting of October 4, 2019.](#)
3. [Staff presentation to the Regional Planning Committee on November 26, 2020, on the revised Metro 2050 timeline.](#)
4. [Report dated August 15, 2019, titled "Metro 2050 Engagement Plan" presented to the MVRD Board at its regular meeting of October 4, 2019.](#)
5. [Report dated May 25, 2021, titled "Draft Metro 2050: Referral for Comment" presented to the MVRD Board at its regular meeting of June 25, 2021.](#)
6. [Metro 2050 Issue-Response Table](#)
7. [Report dated January 7, 2022, titled "Comments on Draft of Metro 2050 and Proposed Next Steps" presented to the MVRD Board at its regular meeting January 28, 2022.](#)
8. [Report dated December 14, 2021, titled "Metro 2050 Bylaw Approvals Process" presented to the MVRD Board at its regular meeting January 28, 2022.](#)
9. [Report dated February 4, 2022, titled "Metro 2050 Next Steps: Addressing Member Jurisdiction Comments and Climate Policy" presented to the MVRD Board at its regular meeting of February 25, 2022.](#)

**METRO VANCOUVER REGIONAL DISTRICT  
BYLAW NO. 1339, 2022**

**A Bylaw to Adopt a Regional Growth Strategy for the Metro Vancouver Regional District**

**WHEREAS:**

- A. Part 13 of the *Local Government Act* provides for a regional district to undertake the development, adoption, implementation, monitoring, and review of a regional growth strategy; and
- B. The Board of the Metro Vancouver Regional District by resolution on April 26, 2019 initiated the review of "Greater Vancouver Regional District Regional Growth Strategy Bylaw Number 1136, 2010" pursuant to section 433 of the *Local Government Act*.

**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 Regional Growth Strategy Bylaw No. 1339, 2022". This bylaw may be cited as "Metro 2050".

**Repeal of Bylaw**

- 2. "Greater Vancouver Regional District Regional Growth Strategy Bylaw Number 1136, 2010", as amended, is hereby repealed.

**Schedule**

- 3. The following Schedule is attached to and forms part of the bylaw:  
Schedule "A", Metro 2050, Regional Growth Strategy for the Metro Vancouver Regional District.

**Regional Growth Strategy**

- 4. Schedule "A", Metro 2050, Regional Growth Strategy for the Metro Vancouver Regional District, is adopted and designated as the regional growth strategy for the Metro Vancouver Regional District.

Read a first time this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

Read a second time this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

Public Hearing held the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

Read a third time this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

Passed and finally adopted this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

Accepted, by Resolution:

- by the Village of Anmore on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the Village of Belcarra on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of Burnaby on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of Coquitlam on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of Delta on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of Langley on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the Township of Langley on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the Village of Lions Bay on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of Maple Ridge on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of New Westminster on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of North Vancouver on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the District of North Vancouver on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of Pitt Meadows on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of Port Coquitlam on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of Port Moody on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of Richmond on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of Surrey on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the Tsawwassen First Nation on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of Vancouver on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the District of West Vancouver on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the City of White Rock on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the Fraser Valley Regional District on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the Squamish-Lillooet Regional District on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_
- by the South Coast British Columbia  
Transportation Authority on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

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Sav Dhaliwal, Chair

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Chris Plagnol, Corporate Officer

## **Schedule A**

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### **Metro 2050, Regional Growth Strategy for the Metro Vancouver Regional District**



# METRO 2050

Regional Growth Strategy

**Metro 2050 Metro Vancouver Regional District**

4515 Central Boulevard, Burnaby, BC,  
V5H 0C6

February, 2022



# Acknowledgment of Indigenous Territory

Metro Vancouver acknowledges that the region's residents live, work, and learn on the shared territories of many Indigenous peoples, including ten local First Nations: Katzie, Kwantlen, Kwikwetlem, Matsqui, Musqueam, Qayqayt, Semiahmoo, Squamish, Tsawwassen, and Tsleil-Waututh.

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

## Metro Vancouver

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 about 2.75 million residents. Essential services include the provision of drinking water, sewage treatment, and solid waste disposal, along with regional services like parks, affordable housing, land use planning, and air quality management that help keep the region one of the most livable in the world.

FIGURE 1. METRO VANCOUVER ENTITIES AND SERVICES



# 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, regional planning, regional parks, Electoral Area A, affordable housing, 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.

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# A. Metro 2050 Scope and Linkages to Other Plans

## Regional Growth Strategies: Legislative Authority

The *Local Government Act* establishes authority for regional districts to prepare a regional growth strategy, which is intended to “promote human settlement that is socially, economically and environmentally healthy and that makes efficient use of public facilities and services, land and other resources.”

## Metro Vancouver’s Management Plans

Metro Vancouver’s regional growth strategy, *Metro 2050*, is one plan among a suite of interconnected management plans developed around Metro Vancouver’s Board Strategic Plan (Figure 2). The regional growth strategy uses land use policies to guide the future development of the region and support the efficient provision of transportation, regional infrastructure, and community services; it helps support the region’s priorities, mandates, and long-term commitments to sustainability and resiliency, in combination with other management plans.

The regional growth strategy provides the land use framework for planning related to regional utilities (water, liquid waste, and solid waste), transportation, housing, and air quality. Reciprocally, the *Drinking Water Management Plan*, *Integrated Liquid Waste and Resource Management Plan*, and *Integrated Solid Waste and Resource Management Plan* set the utility frameworks within which the regional growth strategy

must be developed. Housing policies in the regional growth strategy are implemented in part through the *Metro Vancouver Housing 10-Year Plan*, while the environmental and active transportation policies have important linkages with the *Regional Parks Plan*, *Ecological Health Framework*, and *Regional Greenways 2050*. The regional growth strategy helps improve air quality and reduce greenhouse gas emissions, as called for in the *Clean Air Plan* and *Climate 2050*, by encouraging growth patterns that facilitate energy efficient built form and travel patterns. Finally, the economic actions in the regional growth strategy support a prosperous economy through the implementation of the *Regional Industrial Lands Strategy* and *Invest Vancouver*.

## Metro Vancouver and TransLink: Working Together for a Livable Region

Metro Vancouver has a unique relationship with TransLink, the regional transportation authority responsible for planning, managing, and operating the regional transportation system. TransLink is required by the *South Coast British Columbia Transportation Authority Act* to support Metro Vancouver’s regional growth strategy, air quality and greenhouse gas reduction objectives, and the economic development of the region. TransLink’s regional transportation strategy, *Transport 2050*, sets out transportation strategies for the road and transit networks as well as other matters affecting the regional transportation system. The regional growth strategy and regional transportation plan must support each plan’s policy frameworks to be successful.



Metro Vancouver acknowledges TransLink's mandate is to prepare and implement regional transportation system plans and demand management strategies. The mandate of the Mayors' Council on Regional Transportation includes approving long-term, 30 year transportation strategies and 10 year investment plans.

Metro Vancouver's role in regional transportation planning is to:

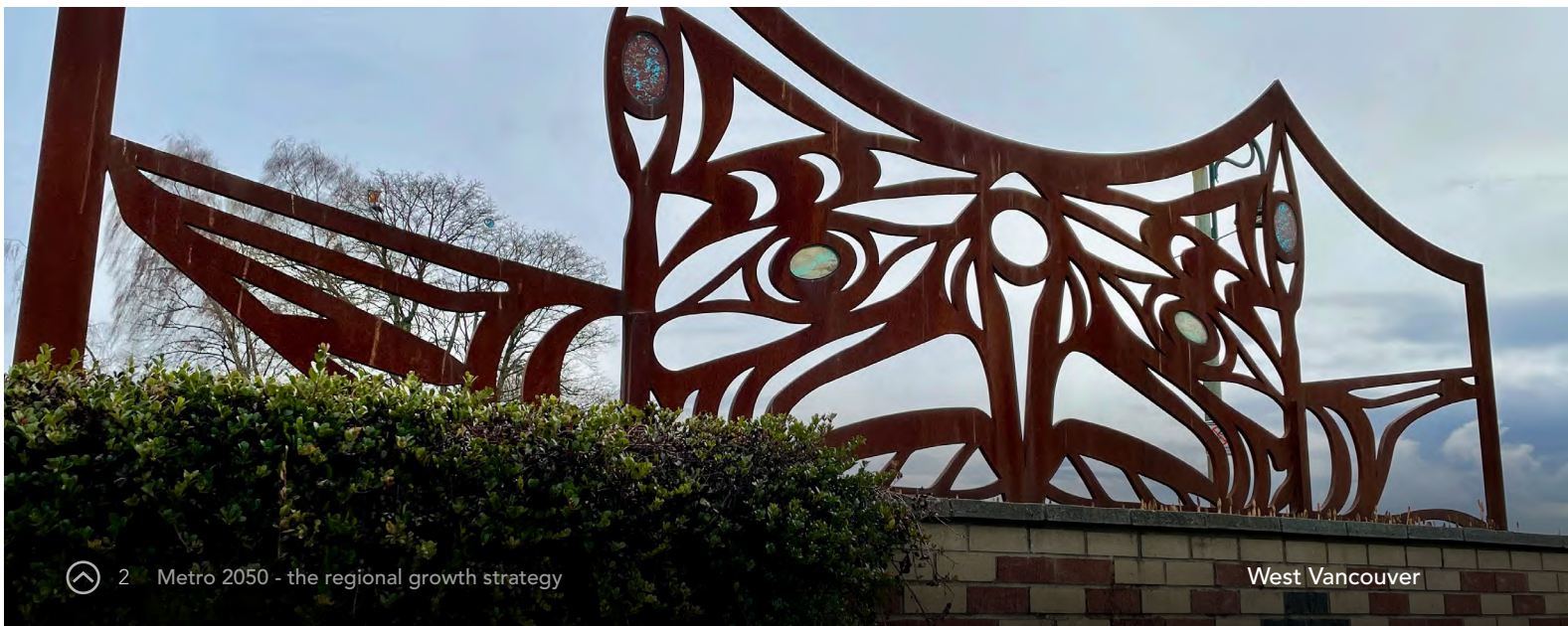
- communicate its objectives for the regional transportation system to TransLink;
- provide transportation planning input through the provision of land use, growth management and air quality information and forecasts and, as appropriate, the evaluation of land use and vehicle emissions impacts; and
- provide advice and input to TransLink and the Mayors' Council in the fulfillment of their roles in light of regional objectives and the circumstances of the day.

Metro Vancouver and TransLink share a commitment to coordination, information-sharing, and pursuing joint policy research on topics of mutual interest such as walkability, parking, new mobility, social equity, and resilience.

## Working Together with First Nations

Metro Vancouver acknowledges that all levels of government have roles and responsibilities with regards to the implementation of the Truth and Reconciliation Commission of Canada's Calls to Action. Metro Vancouver engages and collaborates with local First Nations on matters of shared regional planning interest. With regards to the regional growth strategy, this includes engaging with First Nations on regional growth strategy updates, amendments, and projections, as well as on key planning initiatives. It may also include opportunities to partner or collaborate on regional planning projects such as corridor studies or inventories. Metro Vancouver shares regional planning reports and data and is available to serve as a planning resource. Metro Vancouver strives to work towards better relationships with Indigenous groups and encourages member jurisdictions to also foster improved relationships.

Metro Vancouver acknowledges that regional growth has impacts on Indigenous territories. Metro Vancouver respects that First Nations' reserve lands are not subject to the land use policies in the regional growth strategy. In addition, many First Nations have interests in land and land holdings off reserve, which are subject to the regional growth strategy. If and when First Nations develop land management plans, Metro Vancouver, the respective First Nation,





and adjacent member jurisdictions will endeavour to engage, collaborate, and coordinate with one another at an early stage to ensure, to the extent possible, that the regional growth strategy, municipal Official Community Plans, regional transportation plans, and First Nations' land management plans are all mutually respectful and supportive.

## Working Together with Federal and Provincial Governments and Other Regional Stakeholders

An important part of successful regional planning is collaboration and building inter-jurisdictional partnerships. Metro Vancouver works with other important partners including the Federal Government and the Province, other authorities and agencies, residents, non-profit organizations and business associations on all aspects of the regional growth strategy where there are shared or overlapping interests. Metro Vancouver strives to foster strong relationships with other government agencies and regional stakeholders, seeks to find opportunities for collaboration, and shares information for the benefit of all, while respecting unique jurisdictional responsibilities.

Due to Canada's federal system, there are federal, provincial, and local jurisdictions and responsibilities that interplay and have significant impacts on how people live and use the region. While some jurisdiction is clearly separate, others can be shared or overlapping. In Canada, international immigration policy and rates are set by the Federal Government. The Province has some influence over immigration programs. In addition, the Province is responsible for immigrant settlement programs. The Federal Government has jurisdiction and funding responsibilities for federal trade and transportation facilities, such as ports and airports, while the Province is responsible for transportation planning, education, agriculture, child care, and health care, all of which have significant impacts on how people live and use the region. Both the Federal Government and the Province are responsible for funding programs that enable the creation of affordable and supportive housing and for taking action on climate change.

Metro Vancouver's collaboration with regional stakeholders includes the role of convening and fostering dialogue with and among health authorities, port and airport authorities, post-secondary educational institutions, the Agricultural Land Commission, housing providers, industry groups, and the non-profit sector.

**FIGURE 2. METRO VANCOUVER REGIONAL MANAGEMENT PLANS.**



## B. Introduction to the Region

### Context for the Regional Growth Strategy

#### Geographic Context: Surrounded by Natural Beauty, but Constrained

Located in the southwestern corner of the British Columbia mainland, the Metro Vancouver region is a diverse urban place rich in natural beauty. Metro Vancouver is a globally important ecological hub. It is an essential stop for migratory birds along the Pacific Flyway, and the Fraser River is one of the world's most significant salmon rivers. Situated on the Salish Sea, bisected by the Fraser River, and flanked by the Coast Mountains to the north, the region's natural features have contributed to its position as a major international port, an important location for agricultural production, and one of the most desirable places to live in Canada. These features, as well as the international border to the south, lead to a constrained land base that strengthens the imperative for regional planning and growth management. Consequently, the regional federation has a long history of thoughtfully considering how to accommodate population and economic growth with limited land for expansion.

#### Indigenous Context: A Rich Indigenous History and Vibrant Modern Presence

For thousands of years, Indigenous peoples have lived on, and responsibly stewarded, their respective and shared territories that collectively have also become known as the Metro Vancouver region. Today there are ten First Nations with communities located within the Metro Vancouver region: Katzie First Nation, Kwantlen First Nation, Kwikwetlem First Nation, Matsqui First Nation, Musqueam Indian Band, Qayqayt First Nation, Semiahmoo First Nation, Squamish Nation, Tsawwassen First Nation, and Tsleil-Waututh Nation. In addition, there are many other Indigenous Nations and organizations located outside the boundaries of Metro Vancouver, having land and territorial interests that include the Metro Vancouver region. Furthermore, many First Nation peoples from other areas of Canada, as well as Inuit and Métis peoples, live within this region. Indigenous communities continue to thrive in the region and aim to enhance current environmental stewardship measures.



## Social Context: A Culturally Diverse Region

Metro Vancouver is the largest region in British Columbia with over 53% of the province's population. Metro Vancouver is an ethnically diverse region with approximately 49% of the population of European heritage, 20% Chinese, 12% South Asian, 5% Filipino, 2.5% Indigenous, and a wide variety of other cultural backgrounds. This cultural diversity continues to enrich the region; helps make the region an attractive place to live; and supports tourism, immigration, and investment.

Immigration is a major driver of population growth and diversity with approximately 80% of permanent residents to BC settling in Metro Vancouver. India, China, and the Philippines are the top countries of origin for immigrants, with a particularly strong growth trajectory for immigration from India. Temporary residents in BC (international students and foreign workers) also predominantly reside in Metro Vancouver and numbers have grown substantially in recent years. Temporary residents likely comprise between 5-10% of the Metro Vancouver population.

Housing is one of the most important social and economic issues in Metro Vancouver. Land values and housing prices in the region are very high and have led to associated housing challenges, including: barriers to accessing housing in both the rental and ownership markets, many households spending more than 30% of their gross income on housing, lack of supply across the housing continuum, low rental vacancy rates, and a high rate of homelessness.

The BC Centre for Disease Control estimates that approximately 75% of our overall health is determined by social and ecological factors like working or living conditions, built environment, income, and educational opportunities. These factors strongly affect the rates of chronic disease and injury, leading to different levels of health and well-being for people of different groups. Community and regional planning decisions have the potential to support better health outcomes for all residents. Improving air quality, access to nature, community resilience, and neighbourhood walkability can support health equity in Metro Vancouver.

## Climate Change and Natural Hazards Context: Vulnerable to Impacts and Risks

Metro Vancouver is situated on the Fraser River delta, amongst many forested areas and steep slopes, and in one of the most seismically active zones in Canada. As a result, the region is susceptible to a variety of natural hazards, including earthquakes, wildfires, landslides, and floods. Climate change is already affecting Metro Vancouver, and the impacts are projected to become more frequent and severe over time, increasingly affecting the communities, infrastructure, and natural environment within the region. Climate change can also amplify the impacts of natural hazards; for instance, sea level rise can increase the severity of coastal floods, heavier rainfall events can influence the likelihood of floods and landslides, and warmer temperatures combined with longer drought periods can increase the risk of wildfires.

## Challenges and Opportunities

Metro Vancouver's population has grown substantially over the past decades, adding more than one million people in a generation. This strong population growth is projected to continue, therefore the key challenge will be to accommodate growth in ways that advance both livability and sustainability. To accomplish this, the regional growth strategy strives to address the following issues:

### Accommodating Growth to Advance Livability and Sustainability

The region is expected to continue to grow by about 35,000 residents per year. Accommodating growth within a land-constrained region implies greater density of development. By carefully shaping and structuring growth and ensuring the right diversity of land uses, regional planning can reduce congestion, improve the efficiency of transportation infrastructure, improve the economics of public services, increase the viability of local businesses and retail services, foster the creation of vibrant centres for culture and community activities, and maintain an attractive urban environment.

### Building Resilient, Healthy, and Complete Communities

As the region's population both grows and ages, ensuring access to the key elements of healthy, social and complete communities becomes more challenging. Access to amenities like local shops, personal services, community activities, recreation, green spaces, employment, culture, entertainment, and a safe and attractive public realm can improve community health, social connectedness, and resilience. Planning for complete communities also means considering the needs of a diverse population to promote inclusion and accessibility. This requires careful planning, primarily at the local scale, but also regionally. Complete communities can also help with other challenges, such as climate change, by encouraging active transportation and reducing the need to commute or travel long distances to access employment, amenities, or services.



## Ensuring Housing for All

Ensuring affordable and appropriate housing that meets a variety of needs across the housing continuum is an ongoing challenge. While the region's housing market continues to evolve, stresses of high prices and low supply have evolved over the past decade to the point where there is extreme pressure on both ownership and rental tenure, and heightened public concern over the impacts of housing challenges on the region's social and economic well-being. Strong regional policy and performance measures pertaining to housing can help to increase the supply of all forms and tenures of housing, and reduce pressures on the housing market.

## Supporting Economic Prosperity

Metro Vancouver's economy benefits from a highly varied and specialized base of employment activities, including international trade and logistics; manufacturing; professional and business services; film and television production; tourism and hospitality; education and knowledge creation; agriculture; and emerging technology-driven sectors, such as apparel technology, agri-tech, clean technology, digital media, medical technology, and new mobility. The region connects with, and serves, a resource-rich province and has strong gateway links to the North American and Asia-Pacific regions through the Port of Vancouver and YVR International Airport. An intent of the regional growth strategy is to provide an adequate supply of jobs-producing industrial and commercial space throughout the region for new and expanding industrial and employment uses. This could include research and development, incubation and acceleration, production, and export, located according to their needs, and in a manner that supports an efficient transportation system on which the economy depends.

## Advancing Social Equity

Economic and social inequity can contribute to broad health and social problems as well as a wide variety of other challenges. In Metro Vancouver, incorporating social equity into regional growth planning practice is crucial to ensuring that the region moves forward in an equitable and inclusive manner. Improving social equity will also support the region's other objectives including resilience, sustainability, livability, and prosperity for all. Some of the key social equity concerns in the Metro Vancouver region that relate to the regional growth strategy include: access to green space, employment, public safety, and transit; housing adequacy, suitability, and affordability; vulnerability to climate change impacts and natural hazards; and the displacement impacts that are the result of redevelopment.

## Ensuring Resilience

Metro Vancouver is vulnerable to a variety of shocks and stressors. Regional resilience is the capacity of communities and organizations to prepare, avoid, absorb, recover, and adapt to the effects of shocks and stresses in an efficient manner through the preservation, restoration, and adaptation of essential services and functions, while learning from shocks and stresses to build a more resilient place. Proactive growth management policies can promote land use and built form patterns that reduce exposure to risk, help communities prepare for future shocks, and ensure that residents have the necessary community and social assets located close to where they live and work.

## Reconciliation with Indigenous Peoples

The Province passed the *Declaration on the Rights of Indigenous Peoples Act* into law in November 2019. It is anticipated that the *Local Government Act* will be brought into harmony with the *Declaration* over time which will provide greater clarity on the relationship between regional districts and Indigenous governments. In the meantime, a commitment to ongoing relationship building is essential.

Working towards reconciliation introduces a cross jurisdictional consideration for regional districts, since the primary intergovernmental relationships for First Nations is with the federal and provincial governments. While the regional growth strategy does not apply to reserve lands, it potentially impacts them. In further fostering relationships with First Nations and understanding the various challenges, opportunities, and impacts on all partners, we can collectively move forward and be inclusive of all residents of the region. Fostering stronger relationships with First Nations also offers the opportunity for all members to learn about Indigenous knowledge systems and Indigenous values, which can inform and complement regional planning policy and practice.

## Protecting the Environment

Many natural assets in Metro Vancouver are of national and international significance, such as the Fraser River Estuary. Managed carefully, natural assets provide essential ecosystem services such as clean air, fresh water, and nutritious food. The challenge is to protect and restore the integrity of these assets for the benefit of current and future generations in the face of a growing population, associated development, and a changing climate. Regional policy that emphasizes protecting, connecting, and enhancing ecosystems and integrating best practices across disciplines can help address this challenge. In addition, Indigenous knowledge can inform and complement approaches to environmental protection.

## Preparing for Climate Change and Natural Hazards

The major natural hazard risks in Metro Vancouver include earthquakes, floods, landslides, and wildfires. The risks associated with these hazards are often worsened by climate change. By 2050, the region is projected to experience sea level rise; warmer temperatures; longer summer drought periods; increased precipitation in the fall, winter, and spring; a reduced annual snowpack; and more frequent extreme weather events. The challenge is to prepare for the impacts of climate change and regional natural hazards, while also reducing regional greenhouse gas emissions and achieving a carbon neutral region by the year 2050. Emerging global issues such as climate change-related population displacement may impact and influence land use and growth management planning in the Metro Vancouver region. An example of a policy approach focused on preparing for the impacts of climate change and natural hazards includes avoiding siting new settlements and infrastructure in locations with known and unmitigated hazards and, where settlements already exist, mitigating those hazards to minimize risk to people and property. In addition, Indigenous knowledge can inform and complement regional resilience strategies.



## Protecting Agricultural Land to Support Food Production

Local production of food is dependent on a protected land base for agriculture. Metro Vancouver has approximately 60,000 hectares in the provincial Agricultural Land Reserve, and that land is a vital asset for the economic viability of the region, the agricultural sector in particular, along with supporting local food production for future generations. The ongoing production of fresh and local food contributes to a secure food supply and economic resilience, and supports other co-benefits such as ecosystem services. Yet land speculation, the conflicts between urban and agricultural uses, and the conversion pressures from other land uses on agricultural lands continue to threaten the resilience of agriculture in the region. The impacts of climate change are also projected to have significant impacts on the agricultural industry. Effective growth management policy includes strategies to protect and enhance agricultural lands and support agricultural viability over the long-term.

## Improving Accessibility and Mobility and Reducing Congestion

Metro Vancouver has some of the highest levels of transit ridership, walking, and cycling in Canada. However, sustainable mode share varies significantly across the region, the majority of trips are still taken by private motor vehicle, and transportation remains the region's largest source of greenhouse gas emissions. Shaping infrastructure, street design, and population growth in a way that supports sustainable transportation choices are keys to reaching the region's carbon neutrality target by 2050. Strategies include investing in transit and active transportation; supporting the creation of compact, complete, and walkable communities; directing growth towards transit-oriented areas; and managing transportation demand through parking requirements, transportation user pricing, and other tactics for promoting sustainable modes of transportation.



## Changing Generational Trends and Behaviours

Younger and older generations often have different perspectives, preferences, and options regarding: housing type, tenure, and location; transportation choice; employment; proximity to amenities and services; and recreational opportunities. In addition, macroeconomic trends have delayed or limited many opportunities for employment and home ownership while technological innovation is also impacting consumer behaviour. The result has been a general trend towards living in more urban environments, making more environmentally-sensitive choices, and prioritizing access over ownership.

Other trends that are being seen include smaller family sizes, lower personal savings, higher educational attainment, older age of household formation, and lower rates of home and car ownership. Demographic shifts including an aging population and immigration will also impact consumer behaviour. An awareness and consideration of changing generational and demographic trends and behaviours will support better long-range planning as well as regional prosperity through improved labour force recruitment and retention.





# C. Introduction to the Regional Growth Strategy

## *Metro 2050 Vision*

Metro Vancouver is a region of diverse, equitable, and complete communities connected by sustainable transportation choices where residents take pride in vibrant neighbourhoods that offer a range of opportunities to live, work, play, and learn, and where natural, agricultural, and employment lands are protected and enhanced.

Shaping long-term growth and development in the region is essential to meeting this vision in a way that protects the natural environment, fosters community well-being, fuels economic prosperity, provides local food security, improves social equity, provides diverse and affordable housing choices, ensures the efficient provision of utilities and transit, reduces greenhouse gas emissions, and improves resilience to climate change impacts and natural hazards.

## Guiding Regional Planning Principles

*Metro 2050* is guided by the following five principles:

1. Put growth in the right places;
2. Protect important lands;
3. Develop complete communities;
4. Provide affordable mobility, housing, and employment choices for all; and
5. Support the efficient provision of infrastructure.







## Responding to the Challenges: *Metro 2050* Goals

To respond to the challenges faced by the region, the regional growth strategy sets out a series of strategies and actions for Metro Vancouver and member jurisdictions arranged under five overarching goals intended to achieve the desired outcomes. While each of the goals in *Metro 2050* are separate sections by theme, they are all closely interrelated and complementary to the others. Collectively, the goals, actions, and strategies support *Metro 2050*'s vision and five guiding regional planning principles, and it is intended that they be considered together as they are mutually-supportive.

### **Goal 1.** Create a Compact Urban Area

Metro Vancouver's growth is focused inside an Urban Containment Boundary, within which are a variety of complete communities with access to a range of housing choices, employment opportunities, amenities, and services. Concentrating growth in a network of transit-oriented centres and corridors helps reduce greenhouse gas emissions and pollution, while supporting an efficient transportation network and the efficient use of land.

### **Goal 2.** Support a Sustainable Economy

The objective of this goal is to protect and optimize the land base and transportation systems required to ensure the viability of business sectors. This means supporting regional employment and economic growth, including the established and new emerging sectors and businesses. This is best achieved through the long-term protection of Industrial, Employment, and Agricultural lands, and ensuring that supports are in place to allow commerce to flourish in Urban Centres throughout the region, and heavy and light industrial activities on Industrial lands, connected by a diverse and reliable transportation system.





### **Goal 3. Protect the Environment, Address Climate Change, and Respond to Natural Hazards**

The region's vital ecosystems provide essential services for all life. A connected network of protected Conservation and Recreation lands and other green spaces throughout the region provides opportunities to enhance physical and mental health, supports biodiversity, and increases community resilience. The strategies in this goal also help Metro Vancouver and its member jurisdictions contribute to meeting the regional greenhouse gas emission reduction targets, and prepare for the impacts of climate change and natural hazards.

### **Goal 4. Provide Diverse and Affordable Housing Choices**

Metro Vancouver is a region of communities with a diverse and affordable range of housing choices suitable for residents at any stage of their lives, including a variety of unit types, sizes, tenures, prices, and locations. There is an increased supply of purpose-built rental housing, particularly in proximity to transit, and there are robust tenant protections in place to mitigate the impacts of renovation and redevelopment on renters. Residents experiencing or at risk of homelessness and those with lower incomes or special needs can access permanent, affordable, and supportive housing in neighbourhoods across the region.

### **Goal 5. Support Sustainable Transportation Choices**

Metro Vancouver's compact, transit-oriented urban form supports a range of sustainable transportation choices. This pattern of development expands the opportunities for transit, walking, cycling, and multiple occupancy vehicles, which reduces greenhouse gas emissions and household expenditures on transportation, and improves air quality. The region's road, transit, rail, and waterway networks play vital roles in serving and shaping regional development, providing linkages among the region's communities, and providing important goods movement networks.

## D. Urban Containment Boundary, Regional Land Use Designations, Overlays, and Projections

The following tools, regional land use designations, and overlays are key to 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.

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).

Once they have been defined by member jurisdictions, the locations of Urban Centre and Frequent Transit Development Area overlays are shown on Maps 4 and 5. 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 maintained by Metro Vancouver.

### Urban Containment Boundary

The Urban Containment Boundary is a stable, longterm, regionally-defined area for urban development that protects Agricultural, Conservation and Recreation, and Rural lands 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 and reduce energy demand and greenhouse gas emissions from commuter traffic; it also secures land that stores carbon and helps communities adapt to climate change. Residential and employment infill development is encouraged within the Urban Containment Boundary.





## Urban Land Use Designations

### General Urban

General Urban lands are intended for residential neighbourhoods and centres, and are supported by shopping, services, institutions, recreational facilities and parks. Within General Urban lands, commercial, employment, and residential development should be focused in Urban Centres and Frequent Transit Development Areas (FTDAs). Higher density trip-generating development is to be directed to Urban Centres and FTDAs. Neighbourhood-serving shops and services are encouraged in General Urban lands both inside and outside Urban Centres and FTDAs. In central locations of the region, outside of Urban Centres and FTDAs, multi-unit and mixed-use infill development may be aligned with the goals and strategies of *Metro 2050*, however, the principles of walkability, proximity to frequent transit and employment, and resilience to hazards must be given due consideration.

General Urban areas are intended to emphasize place-making and an enriched public realm, and to promote transit-oriented communities, where transit, multiple-occupancy vehicles, cycling, walking, and rolling are the preferred modes of transportation.

### Industrial

Industrial lands are intended for heavy and light industrial activities, including: distribution, warehousing, repair, construction yards, infrastructure, outdoor storage, wholesale, manufacturing, trade, e-commerce, emerging technology-driven forms of industry, and appropriately-related and scaled accessory uses.

The intensification and densification of industrial activities and forms, as contextually appropriate to the surrounding area, are encouraged. Limited industrial-serving commercial uses that support the primary industrial functions are appropriate. Residential uses are not intended.

## Employment

Employment lands are intended for light industrial, commercial, and other employment-related uses to help meet the needs of local and regional economic activities, and complement the planned functions of Urban Centres and Frequent Transit Development Areas.

Employment lands 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.

Residential uses are not intended on Employment lands, with the exception of sites that are located within 200 metres of a rapid transit station and within either an Urban Centres or FTDA. In those exceptional circumstances, limited residential uses (with an emphasis on affordable, rental housing) are permitted on the upper floors of mid- to high-rise buildings, where appropriate, while commercial and light industrial uses are to be located on the ground or lower floors.

Employment lands located outside of Urban Centres and Frequent Transit Development Areas are primarily intended for: light industrial and commercial uses that require larger-format buildings, which may have particular goods movement needs and impacts; generally lower employment densities and lower transit-generating uses; and uses and forms that are not consistent with the character of a dense transit-oriented neighbourhood, Urban Centre, or Frequent Transit Development Area.

## Non-Urban Land Use Designations

### Rural

Rural lands 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; and small-scale commercial, industrial, or institutional uses, that do not require the provision of urban services such as sewerage or transit. As such, Rural lands are not intended as future urban development areas and generally will not have access to regional sewerage services. Rural designated land generally comprise natural areas, agricultural lands, lands with low-intensity residential or built environments that are historical, remote, or not contiguous with the urban area, and may have topographic constraints.

### Agricultural

Agricultural lands are intended for agricultural production and agriculture-related uses that are compatible with farming operations and that directly support the local 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 encourage agricultural activities over the long-term.

## Conservation and Recreation

Conservation and Recreation lands are intended to protect significant ecological and recreation assets, including: drinking water supply areas, environmental conservation areas, wildlife management areas and ecological reserves, forests, wetlands, riparian areas, major parks and outdoor recreation areas (e.g. ski hills and other tourist recreation areas), and other ecosystems that may be vulnerable to climate change and natural hazard impacts, or that provide buffers to climate change impacts or natural hazard impacts for communities. These lands are protected and managed to ensure they continue providing vital ecosystem services for the benefit of current and future generations.

## Regional Overlays and the Major Transit Growth Corridors

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 lands, and higher density commercial and industrial development for Employment lands. 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.

## Urban Centres

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 and an enriched public realm, and to promote transit-oriented communities, where transit, multiple-occupancy vehicles, cycling, walking, and rolling are the preferred modes of transportation. Urban Centres are priority locations for services and amenities that support a growing population.

Maps 4 and 5 show the location of Urban Centres. Urban Centre 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). As per Table 3, there are different types of Urban Centres with different scales of expected activity and growth.

## Major Transit Growth Corridors

Major Transit Growth Corridors are select areas along TransLink's Major Transit Network within which member jurisdictions, in consultation with Metro Vancouver and TransLink, may identify new Frequent Transit Development Areas (FTDAs). These corridors, shown on Map 5, extend approximately 1 kilometre from the roadway centreline in both directions and do not extend outside the Urban Containment Boundary. The intent of these corridors is to provide a framework for the region in an effort to support the regional planning principle of directing significant proportions of the region's growth towards Urban Centres and areas around transit. The Major Transit Growth Corridors are also a growth monitoring tool to assess performance on transit-oriented development objectives.

The Major Transit Growth Corridors have been identified as good potential locations for regionally -significant levels of transit-oriented growth based on a consideration of the following principles: anchored by Urban Centres or FTDAs, connected by the Major Transit Network, generally resilient to natural hazards, accessible to jobs and services, and walkable. Not all locations in the Major Transit Growth Corridors will be appropriate locations for growth (such as: rail yards or parks). Further local planning will be needed along these corridors to ensure that human settlement patterns support the development of healthy, walkable, and complete communities.

Major Transit Growth Corridors are not an overlay; rather, they are an organizing framework to support the identification of FTDAs. Major Transit Growth Corridors do not alter the underlying land use designation.

### Major Transit Growth Corridor

#### Selection Principles

1. Anchored by Urban Centres or FTDAs,
2. Connected by the Major Transit Network,
3. Generally resilient to natural hazards,
4. Accessible to jobs and services, and
5. Walkable

## Frequent Transit Development Areas

Frequent Transit Development Areas (FTDAs) are additional priority locations to accommodate concentrated growth in higher density forms of development. They are identified by member jurisdictions and located at appropriate locations within the Major Transit Growth Corridors. FTDAs complement the network of Urban Centres, and are characterized by higher density forms of residential, commercial, and mixed uses. FTDAs may contain community, cultural, and institutional uses. Urban design for these areas promotes transit-oriented communities where transit, cycling, walking, and rolling are the preferred modes of transportation.

Identifying FTDAs 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.

Maps 4 and 5 show the location of FTDAs. The FTDA boundaries are established by member jurisdictions in Regional Context Statements in a manner generally consistent with the guidelines in Table 3 (Guidelines for Urban Centres and Frequent Transit Development Areas). The size and shape of FTDAs may manifest in different ways in accordance with the transit service provided as well as with the local context. In corridors where transit stops are spaced more closely together, a linear shaped FTDA may be more appropriate, whereas when stops are spaced further apart a “nodal” FTDA around the station area may be a better fit. Transit service that is more frequent and higher capacity is better supported by an FTDA with a larger geographic area (up to 1000 metres) while transit service that is less frequent or lower capacity could be better supported by an FTDA with a slightly smaller geographic area (approximately 800 metres). All FTDAs are good locations for a variety of multi-unit housing forms, especially affordable and rental housing, but in general densities should scale with the level of transit service provided.

## Trade-Oriented Lands Overlay

The Trade-Oriented Lands Overlay is intended for 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.

These important areas 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.

Industrial lands with a Trade-Oriented Lands Overlay are not intended for stratification tenure or small lot subdivision.

## Natural Resource Areas Overlay

The Natural Resource Areas Overlay is intended to illustrate existing provincially-approved natural resource uses within the Conservation and Recreation regional land use designation that may not be entirely consistent with the designation, but continue to reflect its longterm intent. These uses include a landfill; quarries; lands with active forest tenure managed licences; and wastewater and drinking water treatment facilities. Metro Vancouver creates and maintains this overlay.



## Growth Projections

The population, housing, and employment growth projections are included in the regional growth strategy as a collaborative guide for land use and infrastructure planning for Metro Vancouver utilities, member jurisdictions, TransLink, and other regional agencies. The growth projections are provided as a reference, and are not specific growth targets for the region, sub-regional areas, or member jurisdictions.

### Regional Projections

*Metro 2050* forecasts indicate that over the next thirty years, Metro Vancouver will need to accommodate approximately one million more residents. This means that the region will also require approximately 500,000 additional housing units and almost 500,000 additional jobs. The regional growth strategy encourages member jurisdictions to focus this growth in Urban Centres and Frequent Transit Development Areas to support complete and walkable communities. It is projected that between 2021 and 2050, most housing and employment growth will occur in these key areas, aligning with the *Metro 2050* Urban Centre and Frequent Transit Development Area growth targets.

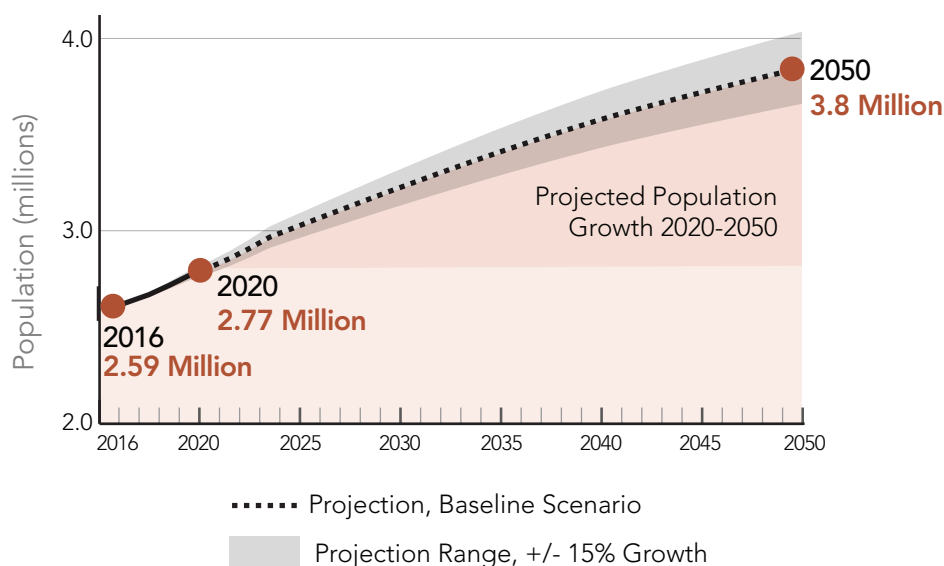
At the last Census in 2016, Metro Vancouver's population was just under 2.6 million. Growth over the next thirty years is projected to add about one million people to reach 3.8 million by the year 2050 (Figure 3).

Similar to the majority of Canadian cities, Metro Vancouver's population is aging. While the percentage of seniors (aged 65 and over) comprised 14.7% of the total population in 2016, this is projected to increase to 22% by 2050. The aging population will have a significant impact on the demand for services in the region, from seniors' housing, health care, accessible public transit, and many other aspects.

Strong population growth is an indicator of strong housing growth. To accommodate projected growth, the region will require an additional 500,000 dwelling units. Apartments are projected to make up over 50% of future growth, followed by multi-attached units. Single-detached housing will grow; however, minimally as locations for additional housing are exhausted.

In 2016, the average number of people living in a household in Metro Vancouver was 2.54 persons. Household size has been decreasing over the last two census periods. This trend is projected to continue and is expected to reach 2.38 by 2050 for all housing structure types. This shift will impact the number and type of new housing units required to accommodate the projected population.

Employment growth tends to follow strong population growth, and Metro Vancouver is expected to gain approximately 500,000 additional jobs by the year 2050, for a total of 1.9 million jobs (Table 1), with a population-to-employment ratio of 0.5. Commercial services will continue to grow and will make up about 50% of total future jobs. New jobs in public administration and other employment sectors will each make up approximately a quarter of job growth. The primary resource sector is projected to remain at a very low level for the region.

**FIGURE 3. PROJECTED POPULATION TO 2050 FOR METRO VANCOUVER**

## Sub-Regional Projections

To establish a long-term regional growth management framework, the regional growth strategy provides population, dwelling unit, and employment projections at a sub-regional level (Figure 4) to help frame growth distribution across the region and support the following objectives:

- support Metro Vancouver utility, TransLink and member jurisdiction long-term capital planning and infrastructure investment programs;
- establish a baseline in setting future growth targets for the Urban Centres and Frequent Transit Development Areas within sub-regions;
- provide flexibility for member jurisdictions in preparing and adjusting local projections over time, and to guide long-range policy planning; and
- achieve greater resiliency to changes in residential and employment market demands.

*Metro 2050's sub-regions are:*

1. **North Shore** (Bowen Island Municipality; City of North Vancouver; Districts of North Vancouver and West Vancouver; Electoral Area A; and Village of Lions Bay);
2. **Burrard Peninsula** (Cities of Burnaby, New Westminster, and Vancouver; UBC; and UEL);
3. **Northeast** (Cities of Coquitlam, Port Coquitlam, and Port Moody; Villages of Anmore and Belcarra);
4. **South of Fraser – West** (Cities of Delta and Richmond; Tsawwassen First Nation);
5. **South of Fraser – East** (Cities of Langley, Surrey, and White Rock; Langley Township; and Barnston Island); and
6. **Ridge Meadows** (Cities of Maple Ridge and Pitt Meadows).

FIGURE 4. METRO VANCOUVER'S SUB-REGIONS FOR THE PURPOSES OF METRO 2050 PROJECTIONS



TABLE 1. REGIONAL AND SUB-REGIONAL PROJECTIONS BY DECADE TO 2050

POPULATION						
SUB-REGIONS		2016	2020	2030	2040	2050
	<b>Metro Vancouver Total</b>	<b>2,593,200</b>	<b>2,767,000</b>	<b>3,206,100</b>	<b>3,564,100</b>	<b>3,836,800</b>
	Burrard Peninsula	1,014,800	1,064,900	1,206,000	1,311,900	1,387,800
	North Shore	199,600	207,600	236,400	254,100	271,000
	Northeast	245,300	263,100	316,100	363,800	396,500
	Ridge Meadows	105,500	110,800	127,200	142,800	155,000
	South of Fraser – East	713,400	782,600	939,300	1,077,400	1,185,300
	South of Fraser – West	314,500	337,900	381,100	414,100	441,300
DWELLING UNITS						
SUB-REGIONS		2016	2020	2030	2040	2050
	<b>Metro Vancouver Total</b>	<b>1,000,500</b>	<b>1,075,500</b>	<b>1,287,700</b>	<b>1,460,500</b>	<b>1,589,400</b>
	Burrard Peninsula	435,900	462,900	533,200	584,600	623,400
	North Shore	79,600	83,500	100,500	111,800	121,900
	Northeast	90,000	96,800	124,800	148,600	165,700
	Ridge Meadows	38,800	42,200	50,000	56,800	61,900
	South of Fraser – East	242,800	267,000	332,400	395,300	441,100
	South of Fraser – West	113,500	123,100	146,700	163,400	175,400
EMPLOYMENT						
SUB-REGIONS		2016	2020	2030	2040	2050
	<b>Metro Vancouver Total</b>	<b>1,342,200</b>	<b>1,420,100</b>	<b>1,621,600</b>	<b>1,775,300</b>	<b>1,883,600</b>
	Burrard Peninsula	643,700	671,700	739,500	786,500	820,000
	North Shore	89,400	94,000	107,200	115,900	123,200
	Northeast	92,000	98,900	120,500	137,500	148,200
	Ridge Meadows	35,800	38,600	45,500	51,200	55,100
	South of Fraser – East	287,100	309,500	372,900	426,600	465,200
	South of Fraser – West	194,100	207,500	236,000	257,700	271,900

To minimize urban sprawl and its negative impacts; support the protection of agricultural, industrial, and ecologically important lands; and support the efficient provision of urban infrastructure, the regional growth strategy sets a target of containing 98% of the region's growth to areas within the Urban Containment Boundary.

To support the development of compact, complete, and transit-oriented communities within the Urban Containment Boundary, the regional growth strategy also includes targets for structuring growth to the network of Urban Centres and Frequent Transit Development Areas. It sets out targets of focusing 40% of the region's dwelling unit growth and 50% of the region's employment growth to areas within Urban Centres, and targets of focusing 28% of the region's dwelling unit growth and 27% of the region's employment growth to Frequent Transit Development Areas (Table 2).

**TABLE 2. DWELLING UNIT AND EMPLOYMENT GROWTH TARGETS FOR URBAN CENTRES AND FREQUENT TRANSIT DEVELOPMENT AREAS\*\***

REGIONAL TARGETS FOR RESIDENTIAL GROWTH BY LOCATION	
Location	Percent of Regional Dwelling Unit Growth 2006-2041
<b>All Urban Centre Types</b>	<b>40%</b>
<b>Frequent Transit Development Areas</b>	<b>28%</b>
<i>Urban Centre Type Breakdown</i>	
• Metropolitan Core	5%
• Surrey Metro Core	6%
• Regional City Centres	16%
• Municipal Town Centres*	13%
REGIONAL TARGETS FOR EMPLOYMENT GROWTH BY LOCATION	
Location	Percent of Regional Employment Growth 2006-2041
<b>All Urban Centre Types</b>	<b>50%</b>
<b>Frequent Transit Development Areas</b>	<b>27%</b>
<i>Urban Centre Type Breakdown</i>	
• Metropolitan Core	10%
• Surrey Metro Core	5%
• Regional City Centres	19%
• Municipal Town Centres*	16%

\*Includes Municipal Town Centres and High Growth Municipal Town Centres.

\*\*This table provides guidance to assist in regional and local planning. It will be updated to extend the targets out to the year 2050 in an amendment following the adoption of *Metro 2050*.







## E. Goals, Strategies & Actions



GOAL  
1

# Create a Compact Urban Area



Langley Township





## Goal 1: Create a Compact Urban Area

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 gas emissions thereby worsening climate change. Strategies under this goal delineate between urban and non-urban areas through the use of an Urban Containment Boundary.

To protect Rural, Conservation and Recreation, and Agricultural lands, it is critical to maintain the Urban Containment Boundary and to structure growth within it. 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 and new Frequent Transit Development Areas, helping to bring additional certainty and greater coordination for member jurisdictions, 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 a region-wide network of complete communities.

Complete communities are walkable, mixed use, and transit-oriented places where people can live, work, and play, at all ages and 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.

Equitable growth management includes a commitment to advancing equity to enhance sustainability, social cohesion, and overall living conditions for all, while intentionally working to mitigate negative consequences that are unique to each community.

### Strategies to achieve this goal are:

- 1.1 Contain urban development within the Urban Containment Boundary
- 1.2 Focus growth in Urban Centres and Frequent Transit Development Areas
- 1.3 Develop resilient, healthy, connected, and complete communities with a range of services and amenities
- 1.4 Protect Rural lands from urban development

## Strategy 1.1 Contain urban development within the Urban Containment Boundary

Containing urban development, including job and housing growth, within the Urban Containment Boundary limits urban sprawl and supports the efficient and cost-effective provision of infrastructure (such as water, sewerage, 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 and storage.

### Metro Vancouver will:

**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 Metro Vancouver Regional District (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:

- 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 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.

**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.

**1.1.3** In collaboration with 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.

**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.

**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.

**1.1.6** Work with First Nations to incorporate development plans and population, employment, and housing projections into the regional growth strategy to support potential infrastructure and utility investments.

**1.1.7** Advocate to the Federal Government and the Province requesting that they direct urban, commercial, and institutional facilities and investments to areas within the Urban Containment Boundary, and to Urban Centres and Frequent Transit Development Areas.

**1.1.8** 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.

**Member Jurisdictions will:**

**1.1.9** Adopt Regional Context Statements that:

- a) Depict the Urban Containment Boundary on a map, generally consistent with the Regional Land Use Designations map (Map 2);
- b) Provide member jurisdiction population, dwelling unit, and employment projections, with reference to guidelines contained in Table 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 98% of residential growth inside the Urban Containment Boundary;

c) Include a commitment to liaise regularly with Metro Vancouver Liquid Waste Services and Metro Vancouver Water Services to keep them apprised of the scale and timeframe of major development plans as well as specific plans to separate combined sewers; and

d) 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.

**TransLink will:**

**1.1.10** Continue to support a compact urban form within the Urban Containment Boundary when developing and implementing transportation plans, strategies, and investments.

**1.1.11** Discourage the provision of infrastructure that would facilitate the dispersal of housing and employment growth outside the Urban Containment Boundary when preparing and implementing transportation plans, strategies, and investments.



## Strategy 1.2 Focus growth in Urban Centres and Frequent Transit Development Areas

Focusing growth into a network of centres and corridors reduces greenhouse gas emissions both by supporting sustainable transportation options and by reducing the distances that people have to travel to make essential trips, all while improving the cost-efficiency of infrastructure investments. In addition, a compact built form is, on average, significantly 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 services and amenities.

Identifying Frequent Transit Development Areas in appropriate locations within Major Transit Growth Corridors ensures that growth is being directed to locations with high quality and frequent transit service. This provides greater certainty to residents, TransLink, and member jurisdictions, and ensures greater integration of land use and transportation planning.

### Metro Vancouver will:

**1.2.1** Through its Regional Planning and Invest Vancouver functions, explore, with member jurisdictions, other governments and agencies, the use of financial and economic development tools and other incentives to support the location of major commercial, office, retail, and institutional development in Urban Centres.

**1.2.2** Work with member jurisdictions, TransLink, and 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 Frequent Transit Development Areas.

**1.2.3** Maintain a reference map to provide updated information on the location and extent of Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors.

**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 and Frequent Transit Development Areas.

**1.2.5** Accept Regional Context Statements that prioritize growth and focus higher density development primarily in Urban Centres, additionally in Frequent Transit Development Areas, and that meet or work towards Action 1.2.24.

**1.2.6** In consultation with TransLink, accept the identification of new Frequent Transit Development Areas located within Major Transit Growth Corridors identified on Map 5.

**1.2.7** Work with member jurisdictions, TransLink, and 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 Frequent Transit Development Areas.

**1.2.8** Consult with TransLink and utilize the required criteria set out in the Urban Centre and Frequent Transit Development Area Type Reclassification Framework (Table 4) when reviewing Regional Context Statements for acceptance or proposed amendments to the regional growth strategy for the reclassification of Frequent Transit Development Areas or Urban Centres.



**1.2.9** Only consider a new Urban Centre in the regional growth strategy where, in addition to meeting the criteria listed in Urban Centre and Frequent Transit Development Area Type Reclassification Framework (Table 4), all of the following criteria have been met:

- a) it intersects with a Major Transit Growth Corridor identified on Map 5;
- 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 identify the adequate provision of park land, public spaces, and amenities to serve the anticipated growth; and
- c) the location is outside known and unmitigated flood and other natural hazard risk areas

**1.2.10** Only consider the identification of a new Frequent Transit Development Area that is:

- a) within a Major Transit Growth Corridor; and
- b) outside known and unmitigated flood and other natural hazard risk areas.

**1.2.11** Only consider reclassifying an Urban Centre or a Frequent Transit Development Area to a growth-intensive classification if it is located outside of known and unmitigated flood and natural hazard areas.

**1.2.12** Develop an Implementation Guideline, in collaboration with member jurisdictions and TransLink, to be used as a resource to support transit-oriented planning throughout the region.

**1.2.13** Implement the strategies and actions of the regional growth strategy that contribute to regional targets as shown on Table 2 to:

- a) focus 98% of the region's dwelling unit growth to areas within the Urban Containment Boundary;
- b) focus 40% of the region's dwelling unit growth and 50% of the region's employment growth to Urban Centres; and
- c) focus 28% of the region's dwelling unit growth and 27% of the region's employment growth to Frequent Transit Development Areas.

**1.2.14** Monitor the region's total dwelling unit and employment growth that occurs in Major Transit Growth Corridors.

**1.2.15** Work with First Nations and other relevant agencies to encourage all major new development and infrastructure investments on First Nations lands to be transit-oriented and resilient to climate change impacts and natural hazards.

**1.2.16** Advocate to the Federal Government and the Province requesting that:

- a) 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, and public-serving health care service facilities; and
- b) that government-owned or funded affordable or supportive housing developments be located in areas with good transit access.

**1.2.17** Advocate to the Federal Government and the Province that their procurement, disposition, and development of land holdings be consistent with the goals of the regional growth strategy.

**1.2.18** Advocate to the Province that Metro Vancouver, member jurisdictions, TransLink, First Nations, and other stakeholders be engaged early in the process on any initiatives pertaining to the planning of new or expanded major transit capital investments.

**1.2.19** Advocate to the Province that any future or expanded rail-based rapid transit service:

- a) avoid locations that are exposed to unmitigated natural hazards and climate change risk;
- b) improve place-making, safety, access, and amenities for people on foot, on bikes, and for those using mobility aids; and
- c) support the safe and efficient movement of people, goods, and service vehicles, to, from, and within Urban Centres and Frequent Transit Development Areas.

**1.2.20** 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 coordination between regional districts.

**1.2.21** 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 the region are consistent with the goals of the regional growth strategy.

**1.2.22** Advocate to the Federal Government and the Province requesting that they support local community concerns and public health by ensuring that the Port of Vancouver, rail companies, and airport operators continue with efforts to measure, report, and manage traffic, noise, air pollution, and vibration impacts, including cumulative impacts, on adjacent communities.

**1.2.23** 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 and Provincial Highways to minimize public exposure to unhealthy levels of noise, vibration, and pollution.

#### **Member Jurisdictions will:**

**1.2.24** Adopt Regional Context Statements that:

- a) provide dwelling unit and employment projections that indicate the member jurisdiction's share of planned growth and contribute to achieving the regional share of growth for Urban Centres and Frequent Transit Development Areas as set out in Table 2 (Dwelling Unit and Employment Growth Targets for Urban Centres and Frequent Transit Development Areas);
- b) include policies and actions for Urban Centres and Frequent Transit Development Areas 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 Map 4;
  - 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) and demonstrate how that growth will contribute to the Urban Centre and Frequent Transit Development Area targets set out in Table 2 and Action 1.2.13;
  - iii) encourage office development to locate in Urban Centres through policies, economic development programs, or other financial incentives;

- iv) support modal shift by establishing or maintaining reduced residential and commercial parking requirements in Urban Centres and FTDA's and consider the use 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, where appropriate, Major Transit Growth Corridors in a resilient and equitable way (e.g. through community vulnerability assessments, emergency services planning, tenant protection policies, and strategies to enhance community social connectedness and adaptive capacity);
  - vi) consider support for the provision of child care spaces in Urban Centres and Frequent Transit Development Areas;
  - vii) consider the implementation of green infrastructure;
  - viii) focus infrastructure and amenity investments (such as public works and civic and recreation facilities) in Urban Centres and Frequent Transit Development Areas, and at appropriate locations within Major Transit Growth Corridors;
  - ix) support the provision of community services and spaces for non-profit organizations;
  - x) consider, where Urban Centres and Frequent Transit Development Areas overlap with Employment lands, higher density forms and intensification of commercial and light industrial; and
  - xi) take appropriate steps to avoid or mitigate the negative health impacts of busy roadways on new or redeveloped residential areas.
- c) Include policies for General Urban lands that:
- i) identify General Urban lands and their boundaries on a map generally consistent with Map 2;
  - ii) exclude new non-residential Major Trip-Generating uses, as defined in the Regional Context Statement, from those portions of General Urban lands outside of Urban Centres and Frequent Transit Development Areas and direct new non-residential Major Trip-Generating uses to Urban Centres and Frequent Transit Development Areas;
  - iii) encourage infill and intensification (e.g. row houses, townhouses, mid-rise apartments, laneway houses) in appropriate locations within walking distance of the Frequent Transit Network; and
  - iv) encourage neighbourhood-serving commercial uses.
- d) with regards to Actions 1.2.16 and 1.2.24 c) ii), include a definition of "non-residential Major Trip-Generating uses" that includes, but is not limited to, the following uses: office or business parks, outlet shopping malls, post-secondary institutions, and large-format entertainment venues;
- e) consider the identification of new Frequent Transit Development Areas in appropriate locations within Major Transit Growth Corridors, as part of the development of new or amended area or neighbourhood plans, or other community planning initiatives; and
- 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.



**TransLink will:**

**1.2.25** 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.

**1.2.26** Collaborate with member jurisdictions and other stakeholders on the expansion of the Frequent Transit Network, Major Transit Network, and new transit stations, and avoid expansion of permanent transit infrastructure into hazardous areas. Where risk is unavoidable, such as in existing settlements, use risk-mitigation or climate change adaptation strategies in the expansion of transit infrastructure.

**1.2.27** 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.

**1.2.28** Continue to develop walking and biking infrastructure programs that prioritize improvements in and between Urban Centres and Frequent Transit Development Areas.



**TABLE 3. GUIDELINES FOR URBAN CENTRES AND FREQUENT TRANSIT DEVELOPMENT AREAS**

This table provides an overview of the function and location of the different types of Urban Centres and FTDA's. It also includes planning guidance about the Urban Centre and FTDA attributes that members are expected to plan for and work towards over time.

CENTRE TYPE	FUNCTION	GENERAL EXPECTATIONS / ATTRIBUTES	LOCATION
<b>Urban Centre - All</b> <i>(applies to Metro Core, Surrey Metro Centre, RCCs, HG-MTCs, and MTCs)</i>	<i>Primary hubs of activity.</i> Accommodates significant regional residential and employment growth and contributes to targets. Provides a range of amenities and services. Major Road Network access. Primary locations for Major Trip-Generating Uses.	Primary focal points for concentrated growth in the region. Complete communities with a balanced mix of housing, employment, services, and amenities. High intersection densities. High quality, accessible walking, cycling, and rolling environment. Provision of transit priority measures and other transit-supportive road infrastructure and operations. Managed parking supply. Parks, green spaces, and public open spaces. The supply of affordable rental housing is protected and expanded. Industrial uses are maintained.	Locations identified on Map 2
<b>Metro Core - Vancouver</b>	<i>The Region's downtown.</i> 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.	Region-serving uses. Institutional, community, cultural, and entertainment uses. Office uses. High degree of cycling connectivity and cycling network completeness. High walkability index score. Provision of transit priority measures and other transit-supportive road infrastructure and operations.	Vancouver
<b>Metro Centre - Surrey</b>	<i>Centre of activity South of the Fraser River.</i> Region-serving uses. Accommodates significant levels of regional employment and residential growth.	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. Institutional, community, cultural, and entertainment uses.	Surrey
<b>Regional City Centre</b>	<i>Sub-regional hub of activity.</i> Accommodates significant levels of sub-regional residential and employment growth.	Sub-region serving uses (hospital, post-secondary). Office uses. Sub-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. Existing frequent transit services. Provision of transit priority measures and other transit-supportive road infrastructure and operations. Minimum density of 60-350 Jobs + People/hectare.	Locations on the Major Transit Network.

<b>High Growth Municipal Town Centre</b>	<p><i>Centre of activity for one or more member jurisdictions.</i></p> <p>Accommodates significant levels of municipal employment and residential growth.</p>	<p>Municipally-serving shops, services, uses, and amenities.</p> <p>Higher density commercial uses.</p> <p>Higher density residential uses, (in General Urban only) including affordable and rental options.</p> <p>Minimum density of 60-200 Jobs + People/hectare.</p>	<p>Maximum 1,200 metres from a Major Transit Network station.</p> <p>Not in an area with known and unmitigated natural hazards.</p> <p>Locations with high regional accessibility to jobs.</p>
<b>Municipal Town Centre</b>	<p><i>Centre of activity for one or more member jurisdictions.</i></p> <p>Accommodates municipal residential and employment growth.</p>	<p>Municipal focus for community and cultural activities. Services, shops, uses, amenities, and activities oriented to the local needs of the surrounding communities. Employment, services, business and commercial activities, typically serving the municipal or local area. Institutional, community, cultural, and entertainment uses. Medium to high density forms of residential uses, including affordable options.</p> <p>Minimum density of 20-150 Jobs + People/hectare.</p>	<p>Locations on the Major Transit Network.</p>
<b>Frequent Transit Development Area (FTDA)</b>	<p><i>Location for transit-oriented development and mixed uses in alignment with the Major Transit Growth Corridors.</i></p> <p>Accommodates additional employment and residential growth. Locations for multi-unit housing including affordable and rental housing. Locations for Major Trip-Generating Uses.</p>	<p>Transit-oriented employment and / or housing growth. Supply of affordable and rental housing is protected and expanded. A range of multi-unit housing forms. Development intensity scales to the frequency and capacity of the transit service.</p> <p>Walkable and bike-friendly urban design. Managed parking supply. Transit priority measures.</p> <p>Provides appropriate noise, vibration, and air quality mitigation measures. Parks, green spaces, and public open spaces.</p> <p>Industrial uses are maintained.</p>	<p>Located in appropriate locations within the Major Transit Growth Corridors.</p> <p>The shape of an FTDA is tailored to the stop spacing distance of the transit service.</p> <p>Distance of FTDA boundaries to the transit stops are scaled to the frequency and capacity of the service provided; the greater the service capacity, the greater the radius.</p>
General Guidance on Frequent Transit Development Areas	<p><b>Corridors</b></p> <p>Linear FTDA's that support frequent transit corridors that have generally shorter stop spacing.</p> <p>Densities and uses to support bus- based frequent and rapid transit.</p>	<p>Generally linear-shaped geography along a transit corridor.</p> <p>Location for medium density housing forms, especially wood-frame construction. Location for affordable and rental housing and employment growth.</p> <p>Minimum density of 35-80 Jobs + People/hectare.</p>	<p>Located along segments of the MTGC with shorter stop spacing.</p> <p>No more than 1,000 metres from the Major Transit Growth Corridor centreline.</p> <p>Boundary radius scaled to the level of transit service capacity and frequency. 800 metre radius recommended for frequent bus.</p>
	<p><b>Station Areas</b></p> <p>Nodal FTDA's that support transit stations. Generally, located where stations are further apart.</p> <p>Accommodates significant residential and employment growth including rental and affordable housing.</p> <p>Densities and uses to support high-capacity rapid and frequent transit.</p>	<p>Generally nodal-shaped around a transit station.</p> <p>May include higher density forms supportive of higher capacity transit service. Office and employment uses.</p> <p>Additional parking management to support transit and active transportation.</p> <p>Minimum density of 60-350 Jobs + People/hectare.</p>	<p>Located along higher capacity and higher frequency transit service with wider stop spacing.</p> <p>No more than 1,000 metres from an existing Major Transit Network Station.</p> <p>Boundary radius scaled to the level of transit service capacity and frequency.</p>



**TABLE 4. URBAN CENTRE AND FREQUENT TRANSIT DEVELOPMENT AREAS TYPE RECLASSIFICATION FRAMEWORK**

This table lays out the criteria required before a new FTDA, new Urban Centre, or reclassified Urban Centre can be considered.

CENTRE TYPE	REQUIRED CRITERIA FOR A NEW URBAN CENTRE OR FTDA, OR FOR URBAN CENTRE RECLASSIFICATION	METRO 2050 AMENDMENT PROCESS
In order to become...	The area must currently meet the following criteria...	And pursue the following amendment process...
<b>Frequent Transit Development Area (FTDA)</b>	<p>Located within a Major Transit Growth Corridor (as shown on Map 5) and no more than 1,000 metres from the MTGC centreline.</p> <p>FTDA geography should be tailored to transit service level; nodal FTDAs are better suited to corridors with wider transit stop spacing, while linear FTDAs are better suited to corridors with shorter stop spacing.</p> <p>Policies supportive of street, sidewalk, and cycling network connectivity. Policies supportive of managed parking supply. Not in an area with known and unmitigated natural hazards. Official Community Plan (OCP) Land Use Map and policies supportive of infill and intensified residential and/or employment growth.</p>	Type 3 or Regional Context Statement Update
<b>Urban Centre - All</b> (applies to all Urban Centre types)	<p><i>Required for a new Urban Centre, or reclassification to any Urban Centre type:</i></p> <p>Located on the Major Transit Network. Not in a known and unmitigated natural hazard area. OCP Land Use Map and policies supportive of infill and intensified residential and employment growth.</p>	
Municipal Town Centre	<p>Meets the above criteria for Urban Centre, and:</p> <ul style="list-style-type: none"> <li>• Formerly a Frequent Transit Development Area;</li> <li>• Evidence that the area is a primary hub of activity within a member jurisdiction;</li> <li>• Minimum 60 Jobs + People / hectare; and</li> <li>• Minimum area of 40 hectares.</li> </ul>	Type 3
High Growth Municipal Town Centre	<p>Meets the above criteria for Urban Centre, and:</p> <ul style="list-style-type: none"> <li>• Formerly a Municipal Town Centre or FTDA;</li> <li>• Existing rail rapid transit service;</li> <li>• High regional accessibility (i.e. many employment nodes can be accessed by transit within a defined amount of time);</li> <li>• Not in a known and unmitigated natural hazard area;</li> <li>• Minimum 100 Jobs + People / hectare; and</li> <li>• Minimum area of 40 hectares.</li> </ul>	Type 3
Regional City Centre and Metro Centres	<p>Reclassification from any Urban Centre type to or from the "Regional City Centre" or to "Metro Centre" types is not contemplated by the regional growth strategy.</p>	

## Strategy 1.3 Develop resilient, healthy, connected, and complete communities with a range of services and amenities

Creating complete communities, especially in the region's Urban Centres, with a mix of uses and affordable services and amenities, allows residents of all ages and abilities to meet most of their daily needs by walking, rolling, or transit without leaving their neighbourhoods. This supports trip reduction, walking, 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.

### Metro Vancouver will:

**1.3.1** Support member jurisdictions and work with First Nations and other agencies in developing resilient, healthy, connected, and complete communities through regional strategies, research, and best practices that:

- a) promote greater local access to affordable community services and child care, healthy food, and public spaces (including regional parks and greenways);
- b) reduce greenhouse gas emissions, bolster resilience to climate change impacts and natural hazards, and improve social equity, universal accessibility, and inclusive engagement; and
- c) encourage the provision and enhancement of urban green spaces in new and established neighbourhoods.

**1.3.2** Provide technical advice, assistance, research, and data to member jurisdictions, First Nations, and other agencies to improve air quality, reduce greenhouse gas emissions, increase access to community services, and to better understand the health and social equity aspects of land use and infrastructure decisions.

**1.3.3** Collaborate with health authorities, academic institutions, First Nations, and other researchers to share best practices, research, data, and tools that can advance land use policies to:

- a) ensure neighbourhoods are designed for walking, cycling, rolling and social activities to promote positive mental and physical health;
- b) meet community social needs and priorities;

c) reduce community exposure to climate change and air quality impacts, especially communities that are disproportionately impacted; and

d) increase equitable access and exposure to public spaces through urban green space enhancement and retention opportunities.

**1.3.4** Measure and monitor access to community services and amenities, particularly in Urban Centres and Frequent Transit Development Areas.

**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.

**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.

### Member Jurisdictions will:

**1.3.7** Adopt Regional Context Statements that:

- a) support compact, mixed use, transit, walking, cycling and rolling-oriented communities;
- b) locate and support community, arts, cultural, recreational, institutional, medical/health, social service, education and child care facilities, and local serving retail uses in Urban Centres or areas with good access to transit;

c) provide and encourage 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.

d) respond to health and climate change-related risks by providing equitable access to:

- i) recreation facilities;
- ii) green spaces and public spaces (e.g. parks, trails, urban forests, public squares, etc.); and
- iii) safe and inviting walking, cycling, and rolling environments, including resting spaces with tree canopy coverage, for all ages and abilities;

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;

f) consider, when preparing new neighbourhood and area plans, the mitigation of significant negative social and health impacts, such as through the use of formal health and social impact assessment methods in neighbourhood design and major infrastructure investments;

g) provide design guidance for existing and new neighbourhoods to promote social connections, universal accessibility, crime prevention through environmental design, and inclusivity while considering the impacts of these strategies on identified marginalized members of the community; and

h) consider where appropriate, opportunities to incorporate recognition of Indigenous and other cultures into the planning of Urban Centres, FTDAs, and other local centres.

#### **TransLink will:**

**1.3.8** Provide equitable and accessible levels of transit service to communities and employment areas.

**1.3.9** Continue to improve sustainable mobility options for neighbourhoods outside the Urban Centres and Frequent Transit Development Areas within the General Urban land use designation as shown on Map 2.



## Strategy 1.4 Protect Rural lands from urban development

Rural designated lands are located outside the Urban Containment Boundary and are not intended for urban forms of development. Containing growth within the Urban Containment Boundary ensures the protection of natural, rural, 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.

### Metro Vancouver will:

**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 Map 2. Notwithstanding this general rule, in the exceptional circumstances specified below, the Metro Vancouver Regional District (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:

- 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 strategy to protect lands with a Rural regional land use designation from urban development.

**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.

### Member Jurisdictions will:

**1.4.3** Adopt Regional Context Statements that:

- a) identify Rural lands and their boundaries on a map generally consistent with Map 2;
- b) limit development to a scale, form, and density consistent with the intent for the Rural land use designation, and that is compatible with on-site sewer servicing;
- c) specify the allowable density and form, consistent with Action 1.4.1, for land uses within the Rural regional land use designation;
- d) prioritize and support agricultural uses within the Agricultural Land Reserve, and where appropriate, support agricultural uses outside of the Agricultural Land Reserve; and
- e) support the protection, enhancement, restoration, and expansion of ecosystems identified on Map 11 to maintain ecological integrity, enable ecosystem connectivity, increase natural carbon sinks and enable adaptation to the impacts of climate change.







## GOAL 2

# Support a Sustainable Economy



## Goal 2: Support a Sustainable Economy

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 designations and economic and transportation strategies and policies.

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, to support jobs in close proximity to homes and connected by sustainable forms of transportation.

Increasing demands for land for industrial activities as the population and economy grow, coupled with ongoing market pressure to convert Industrial lands to office, retail, residential, and other uses, has resulted in a critically diminished supply of Industrial land in the region. In addition to the national, provincial, and regional 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, manufacturing, and renovation and construction functions. Additional lands are needed for container storage, freight forwarding, warehouses, and other distribution functions that support the regional economy to provide for a sustainable and resilient supply chain system.

Meeting the needs of both a growing regional economy and an expanding international gateway for trade requires an adequate supply of serviced industrial lands, such as those identified as 'trade-oriented' lands. Preserving the region's industrial lands supports existing businesses by allowing them to expand and supports new businesses 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; circular economy; and a more efficient transportation system.

There are some economic activities that are not traditional industrial uses and cannot be easily accommodated or 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.

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.



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 and on the regional industrial land supply for storage, processing, and distribution. Effective legislation and an economically viable agricultural sector are important ways to protect Agricultural land for future generations.

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 sustainable food production, edge planning, new drainage and irrigation infrastructure, and climate change adaptation. This strategy also seeks to protect Agricultural land for local food production and supports the economic viability of the agricultural sector, while recognizing the value of ecosystem services.

Equitable growth management includes a commitment to advancing equitable and sustainable planning and land development practices that support a regional economy that is accessible and designed to benefit all people. It includes a commitment to: employment growth; effective use of industrial lands; an efficient transportation system; sustainable practices that work to enhance and protect natural resources; building resilience through climate-smart agricultural approaches; and mitigating the potential disproportionate impacts on ecosystems, communities, groups, or individuals.

#### Strategies to achieve this goal are:

- 2.1 Promote land development patterns that support a diverse regional economy and employment opportunities close to where people live
- 2.2 Protect the supply and enhance the efficient use of industrial land
- 2.3 Protect the supply of agricultural land and strengthen agricultural viability



## Strategy 2.1 Promote land development patterns that support a diverse regional economy and employment opportunities close to where people live

Economic and employment activities, such as post-secondary and medical 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), which have different location requirements and attributes. 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.

### Metro Vancouver will:

**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 Invest Vancouver to attract strategic investment to the region.

**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; and
- b) fiscal reform to ensure that the property tax system supports sound land use decisions.

**2.1.4** Collaborate with the Fraser Valley and Squamish- Lillooet Regional Districts on shared initiatives related to economy, transportation, and other related matters.

**2.1.5** Accept Regional Context Statements that support economic activity and an urban form designed to be consistent with its context in: Urban Centres, Frequent Transit Development Areas, Industrial lands, Employment lands, ports and airports, and that meet or work towards Action 2.1.10.

**2.1.6** Advocate to the Federal Government, the Province, and TransLink to develop and operate transportation infrastructure that supports and connects the region's economic activities by sustainable modes of transportation in Urban Centres, Frequent Transit Development Areas, Industrial lands, Employment lands, ports and airports.

**2.1.7** Advocate that airport authorities:

- 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 7;
- b) expedite the transition to energy efficient, low, and zero emission modes for goods movement; and
- c) develop strategies to adapt to climate change impacts and natural hazard risks.



**2.1.8** Advocate that the Port of Vancouver:

- 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 lands specified on Map 7;
- b) expedite the transition to energy efficient, low, and zero emission modes for goods movement; and
- c) develop strategies to adapt to climate change impacts and natural hazard risks.

**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.

**Member Jurisdictions will:**

**2.1.10** Adopt Regional Context Statements that:

- a) include policies to support appropriate economic activities, as well as context-appropriate built form for Urban Centres, Frequent Transit Development Areas, Industrial lands, and Employment lands;
- b) support the development and expansion of large-scale office and retail uses in Urban Centres, and lower-scale uses in Frequent Transit Development Areas through policies such as: zoning that reserves land for commercial uses, density bonus provisions to encourage office development, variable development cost charges, and/or other incentives; and
- c) discourage the development and expansion of major commercial uses outside of Urban Centres and Frequent Transit Development Areas and that discourage the development of institutional land uses outside of Urban Centres and Frequent Transit Development Areas.





## Strategy 2.2 Protect the supply and enhance the efficient use of industrial land

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 and Employment lands, while also considering the future of industrial activities and work, greenhouse gas emissions, and the impacts of climate change.

### Metro Vancouver will:

**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.

**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.

**2.2.3** In collaboration with member jurisdictions, develop an Implementation Guideline covering the following topics: opportunities for Industrial lands to support new growth planning initiatives, new forms of industry and technologies, urban industry and e-commerce, design of industrial forms, guidance on setting criteria for trade-oriented lands, and other policy measures.

**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.

**2.2.5** 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 Action 2.2.9.

**2.2.6** 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.

**2.2.7** Advocate to the Federal Government and the Province to support initiatives and infrastructure investments that:

- a) introduce more energy efficient, low carbon and zero emissions equipment operations and vehicles;
- b) reduce distances travelled by commercial vehicles;
- c) expedite the transition to energy efficient, low, and zero emission modes for goods movement; and
- d) shift freight activity out of peak congestion periods.

**2.2.8** 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.

**Member jurisdictions will:****2.2.9** Adopt Regional Context Statements that:

a) identify the Industrial and Employment lands and their boundaries on a map generally consistent with Map 7.

b) identify Trade-Oriented lands, if applicable, 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 and/or small lot subdivisions on these lands should not be permitted;

c) include policies for Industrial lands that:

- i) consistently define, support, and protect industrial uses, as defined in *Metro 2050*, in municipal plans and bylaws, and ensure that non-industrial uses are not permitted;
- ii) support appropriate and related accessory uses, such as limited-scale ancillary commercial spaces, and caretaker units;
- iii) exclude uses that are not consistent with the intent of Industrial lands 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;
- iv) encourage improved utilization and increased intensification/densification of Industrial lands for industrial activities, including the removal of any unnecessary municipal policies or regulatory barriers related to development form and density;

v) review and update parking and loading requirements to reflect changes in industrial forms and activities, ensure better integration with the surrounding character, and reflect improvements to transit service, in an effort to avoid the over-supply of parking;

vi) explore municipal industrial strategies or initiatives that support economic growth objectives with linkages to land use planning;

vii) provide infrastructure and services in support of existing and expanding industrial activities;

viii) support the unique locational and infrastructure needs of rail-oriented, waterfront, and trade-oriented industrial uses;

ix) consider the preparation of urban design guidelines for Industrial land edge planning, such as interface designs, buffering standards, or tree planting, to minimize potential land use conflicts between industrial and sensitive land uses, and to improve resilience to the impacts of climate change; and

x) do not permit strata and/or small lot subdivisions on identified Trade-Oriented lands.

d) include policies for Employment lands 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;
- 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;
- iv) support higher density forms of commercial and light industrial development where Employment lands 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, while low employment density and low transit generating uses, possibly with goods movement needs and impacts, are located elsewhere;
- v) do not permit residential uses, except for:
  - an accessory caretaker unit; or
  - limited residential uses (with an emphasis on affordable, rental units) on lands within 200 metres of a rapid transit station and located within Urban Centres or Frequent Transit Development Areas, provided that the residential uses are located only on the upper floors of buildings with commercial and light industrial uses, where appropriate and subject to the consideration of municipal objectives and local context.
- e) include policies to assist existing and new businesses in reducing their greenhouse gas emissions, maximizing energy efficiency, and mitigating impacts on ecosystems; and
- f) include policies that assist existing and new businesses to adapt to the impacts of climate change and reduce their exposure to natural hazards risks, such as those identified within the regional growth strategy (Table 5).



## Strategy 2.3 Protect the supply of agricultural land and strengthen agricultural viability

Protecting land for agricultural production is essential for the viability of the agricultural industry and a resilient region. Collaboration with the Agricultural Land Commission is necessary to address the ongoing challenges from competing residential, industrial, and commercial land use demands. Improved multi-jurisdictional collaboration that recognizes the priority to protect farm land for food production, and the importance of climate change adaptation while restricting other land uses in agricultural lands is critical. Equally important is the need to strengthen the economic viability of agricultural operations by encouraging new markets and expanding the distribution of local foods.

### Metro Vancouver will:

**2.3.1** Direct the Greater Vancouver Sewerage and Drainage District (GVS&DD) 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 Metro Vancouver Regional District (MVRD) Board will advise the GVS&DD 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:

- 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 goal 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.

**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 member jurisdictions, the Province, and the Agricultural Land Commission.

**2.3.4** Work with the Agricultural Land Commission (ALC) to protect the region's agricultural land base and not consider amending the Agricultural or Rural regional land use designation of a site if it is still part of the Agricultural Land Reserve (ALR). However, where the ALC has provided conditional approval to exclude land from the ALR, the Metro Vancouver Board may also provide conditional approval of a regional land use designation amendment for the exclusion site, subject to the ALC exclusion conditions being met.

**2.3.5** Undertake agricultural awareness activities that promote the importance of the agricultural industry, the protection of agricultural land, and the value of local agricultural products and experiences, in partnership with other agencies and organizations.

**2.3.6** 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 Action 2.3.12.



**2.3.7** 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 on agricultural lands.

**2.3.8** 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.

**2.3.9** Advocate to the Province to increase agricultural producers' knowledge and adoption of innovative practices for advancing agriculture economic development, and resilience to climate change and natural hazard impacts, such as those identified in the regional growth strategy (Table 5).

**2.3.10** Advocate to the Province to provide incentives to encourage land management practices that reduce greenhouse gas emissions, improve soil health, protect natural assets, and maintain ecosystem services from agricultural land.

**2.3.11** Advocate to the Province for changes to the *Local Government Act* to require that Official Community Plans prioritize the need for agricultural land, similar to how long-term needs are considered for residential, commercial, and industrial lands.

#### **Member Jurisdictions will:**

**2.3.12** Adopt Regional Context Statements that:

- a) specify the Agricultural lands within their jurisdiction, denoting those within the Agricultural Land Reserve, on a map generally consistent with Map 8;
- 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;
- c) include policies that protect the supply of agricultural land and strengthen agriculture viability including those that:

- i) assign appropriate land use designations to protect agricultural land for future generations and discourage land uses on Agricultural lands that do not directly support and strengthen agricultural viability;
- ii) encourage the consolidation of small parcels and discourage the subdivision and fragmentation of agricultural land;
- iii) support climate change adaptation including:
  - monitoring storm water, flooding, and sea level rise impacts on agricultural land,
  - implementing flood construction requirements for residential uses, and
  - maintaining and improving drainage and irrigation infrastructure that support agricultural production, where appropriate and in collaboration with other governments and agencies;
- 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;
- 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 as defined by the *Agricultural Land Commission Act*; and
- vi) align policies and regulations, where applicable, with the Minister's Bylaw Standards and Agricultural Land Commission legislation and regulations.

**2.3.13** 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.



GOAL  
3

Protect the Environment,  
Address Climate Change, and  
Respond to Natural Hazards





## Goal 3: Protect the Environment, Address Climate Change, and Respond to Natural Hazards

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

The diverse mountain, coastal, and river areas provide the region's residents with essential ecosystem services such as fresh water, clean air, pollination, traditional Indigenous food and medicines, fertile soil, flood control, cooling, carbon storage, and opportunities for tourism, recreation, cultural and spiritual enrichment, health and well-being (Figure 5). Climate change, land development, invasive species, and other human-induced pressures are causing ecosystem change and loss in many areas, which reduces nature's capacity to provide these life-sustaining services. If planned, designed, and built in harmony with nature, communities will be healthier and more resilient over the long-term.

The tenets of the regional growth strategy (such as the ongoing focus on urban containment and land use patterns that support sustainable transportation options and carbon storage opportunities in natural areas) are critical for the region to address climate change. This section contains a strategy and associated policies that support Metro Vancouver's commitment to reaching a carbon neutral region by the year 2050. Climate change is expected to continue to cause warmer temperatures, a reduced snowpack, increasing sea levels, and more intense and frequent drought and rainfall events in the region. An additional strategy aims to improve resilience to these climate change impacts, as well as natural hazards. Many of the region's natural hazards are, and will continue to be, worsened by a changing climate.

Addressing both greenhouse gas emissions and the impacts of climate change and natural hazards simultaneously is critical, as the challenges and solutions associated with these issues are often interlinked. Given the dynamic and rapidly changing impacts of climate change on the Metro Vancouver region, and in response to best practices research and climate science, progress towards the *Metro 2050* targets and performance measures will be regularly monitored with an aim to proposing improvements to the policies and actions in the plan.

A commitment to improving social equity includes advancing equitable climate change strategies and actions that will: intentionally consider the suite of concerns that increase community vulnerability, and acknowledge current financial, health, and social disparities that may be exacerbated by low carbon solutions and the impacts of climate change.

For thousands of years Indigenous people have lived on and stewarded their respective and shared territories developing deep and special relationships with the land and waters. Indigenous knowledge systems that have been developed over many years have the potential to inform and complement regional planning policy and practice.

### Strategies to achieve this goal are:

- 3.1 Protect and enhance Conservation and Recreation lands
- 3.2 Protect, enhance, restore, and connect ecosystems
- 3.3 Advance land use, infrastructure, and human settlement patterns that reduce energy consumption and greenhouse gas emissions, create carbon storage opportunities, and improve air quality
- 3.4 Advance land use, infrastructure, and human settlement patterns that improve resilience to climate change impacts and natural hazards



FIGURE 5. ECOSYSTEM SERVICES PROVIDED BY HEALTHY ECOSYSTEMS

## Strategy 3.1 Protect and enhance Conservation and Recreation lands

The Conservation and Recreation regional land use designation is intended to help protect significant ecological and recreation assets throughout the region. Protection and management of these assets will ensure they remain productive, resilient, and adaptable, providing vital ecosystem services that support both humans and wildlife, while also safeguarding communities from climate change and natural hazard impacts.

### Metro Vancouver will:

**3.1.1** Direct the Greater Vancouver Sewerage and Drainage District (GVS&DD) to not allow connections to regional sewerage services to lands with a Conservation and Recreation regional land use designation. Notwithstanding this general rule, in the exceptional circumstances specified below, the Metro Vancouver Regional District (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 Conservation and Recreation regional land use designation and where the MVRD Board determines either:

- 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 strategy to protect lands with a Conservation and Recreation regional land use designation.

**3.1.2** Implement the *Metro Vancouver Regional Parks Plan*, the *Regional Parks Land Acquisition 2050 Strategy*, and *Regional Greenways 2050*, and work collaboratively with member jurisdictions to identify, secure and enhance habitat and park lands, and buffer park and conservation areas from activities in adjacent areas.

**3.1.3** For the Greater Vancouver Water District and the Greater Vancouver Sewerage and Drainage District, avoid ecosystem loss and fragmentation on lands with a Conservation and Recreation regional land use designation when developing and operating infrastructure, but where unavoidable, mitigate the impacts, including ecosystem restoration and striving for no net ecosystem loss.

**3.1.4** Monitor ecosystem gains and losses on lands with a Conservation and Recreation regional land use designation and the Natural Resource Areas therein, as identified on Map 9.

**3.1.5** Accept Regional Context Statements that protect lands with a Conservation and Recreation



regional land use designation, and that meet or work towards Action 3.1.9.

**3.1.6** Advocate to the Federal Government, the Province, utility companies, and TransLink to avoid ecosystem loss and fragmentation on lands within a Conservation and Recreation regional land use designation when developing and operating utility and transportation infrastructure, but where unavoidable, to mitigate the impacts, including ecosystem restoration and striving for no net ecosystem loss.

**3.1.7** Advocate to the Province and its agencies to actively manage provincially-owned land within a Conservation and Recreation regional land use designation, and work with adjacent land owners to effectively buffer these lands, with the intent of minimizing negative impacts and enhancing ecosystem integrity and providing public recreational opportunities.

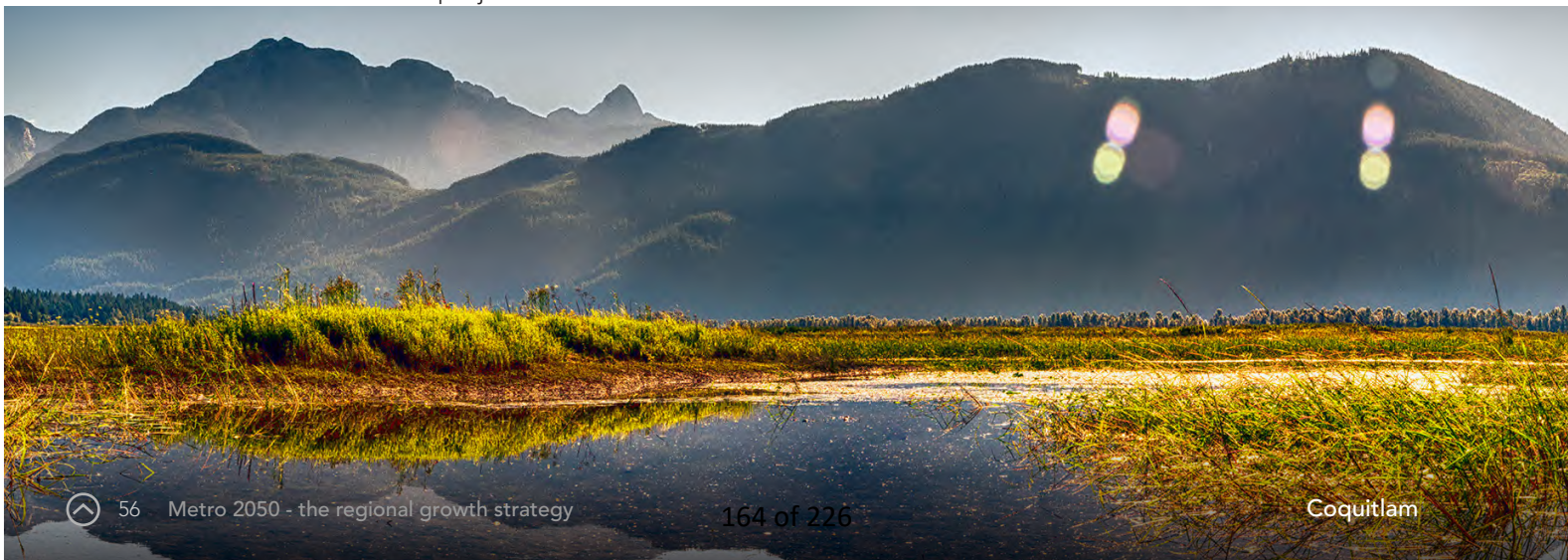
**3.1.8** Advocate to the Federal Government and the Province to:

- a) recognize the Conservation and Recreation regional land use designation and ensure that their activities within or adjacent to these lands are consistent with the long-term intent of the land use designation; and
- b) consult and collaborate with all levels of government, including First Nations, and other stakeholders in the planning and management of lands with a Conservation and Recreation regional land use designation, including during the review of future natural resource extraction projects.

#### **Member jurisdictions will:**

**3.1.9** Adopt Regional Context Statements that:

- a) identify Conservation and Recreation lands and their boundaries on a map generally consistent with Map 2;
- b) include policies that support the protection and enhancement of lands with a Conservation and Recreation land use designation, which may include the following uses:
  - i) drinking water supply areas;
  - ii) environmental conservation areas;
  - iii) wildlife management areas and ecological reserves;
  - iv) forests;
  - v) wetlands (e.g. freshwater lakes, ponds, bogs, fens, estuarine, marine, freshwater, and intertidal ecosystems);
  - vi) riparian areas (i.e. the areas and vegetation surrounding wetlands, lakes, streams, and rivers);
  - vii) ecosystems not covered above that may be vulnerable to climate change and natural hazard impacts, or that provide buffers to climate change impacts or natural hazard impacts for communities; and





viii) uses within those lands that are appropriately located, scaled, and consistent with the intent of the designation, including:

- major parks and outdoor recreation areas;
- education, research and training facilities, and associated uses that serve conservation and/or recreation users;
- commercial uses, tourism activities, and public, cultural, or community amenities;
- limited agricultural use, primarily soil-based; and
- land management activities needed to minimize vulnerability / risk to climate change impacts.

c) include policies that:

- protect the integrity of lands with a Conservation and Recreation regional land use designation from activities in adjacent areas by considering wildland interface planning, and introducing measures such as physical buffers or development permit requirements; and
- encourage the consolidation of small parcels, and discourage subdivision and fragmentation of lands with a Conservation and Recreation regional land use designation.



## Strategy 3.2 Protect, enhance, restore, and connect ecosystems

This strategy establishes a collective vision for ecosystems across the region, recognizing the scientific evidence that ‘nature needs half’ of the land base to continue functioning for the benefit of all life and support human well-being. The vision can be realized in this region by working together to protect, enhance, and restore ecosystems, strategically linking green spaces, both in and between urban and rural areas, into a region-wide network that sustains ecosystem services and movement of wildlife across the landscape. Actions to enhance tree canopy cover in urban areas will also improve community resilience by intercepting rainwater, moderating the urban heat island effect, and improving health outcomes.

### Metro Vancouver will:

**3.2.1** Implement the strategies and actions of the regional growth strategy that contribute to regional targets to:

- a) increase the area of lands protected for nature from 40% to 50% of the region’s land base by the year 2050; and
- b) increase the total regional tree canopy cover within the Urban Containment Boundary from 32% to 40% by the year 2050.

**3.2.2** Implement the Metro Vancouver *Ecological Health Framework*, including relevant actions to:

- a) collect and maintain data, including the Sensitive Ecosystem Inventory, tree canopy cover, imperviousness, and carbon storage datasets; report on gains and losses and climate change impacts on ecosystems; and share these datasets with member jurisdictions; and
- b) incorporate natural assets and ecosystem services into Metro Vancouver’s corporate planning, asset management systems and investments, and provide regionally appropriate guidance on methodologies, tools and decision-making frameworks.

**3.2.3** Manage Metro Vancouver assets and collaborate with member jurisdictions, First Nations, and other agencies to:

- a) protect, enhance, and restore ecosystems as identified on Map 11 or more detailed local ecological and cultural datasets;
- b) identify ecosystems that may be vulnerable to climate change and natural hazard impacts as part of regional multi-hazard mapping in Action 3.4.2 a);
- c) identify a regional green infrastructure network that connects ecosystems and builds on existing local networks, while maximizing resilience, biodiversity, and human health benefits; and
- d) prepare Implementation Guidelines to support a regional green infrastructure network and to assist with the protection, enhancement, and restoration of ecosystems.



**3.2.4** Work with local First Nations to:

- a) increase understanding of Indigenous ecological knowledge, and share information about environmental research, policy development, and planning best practices;
- b) find joint stewardship and restoration opportunities on Metro Vancouver sites, and expand access to sustainably cultivate and harvest plants for cultural purposes; and
- c) seek other Indigenous stewardship, research, and co-management opportunities.

**3.2.5** Accept Regional Context Statements that advance the protection, enhancement, restoration, and connection of ecosystems in a regional green infrastructure network, and that meet or work towards Action 3.2.7.

**3.2.6** Advocate to the Federal Government and the Province to:

- a) strengthen species-at-risk and ecosystem protection legislation to better protect critical habitat, and support restoration and biodiversity, in addition to convening a local government support network;
- b) support the uptake of nature-based climate change solutions, including those that protect or restore foreshore ecosystems;
- c) update and consolidate provincial invasive species legislation to better support the management of high-risk invasive species; and
- d) undertake a regional impact assessment of the Fraser River Estuary to support the management of cumulative effects from development.

**Member jurisdictions will:****3.2.7** Adopt Regional Context Statements that:

- a) identify local ecosystem protection and tree canopy cover targets, and demonstrate how these targets will contribute to the regional targets in Action 3.2.1;
- b) refer to Map 11 or more detailed local ecological and cultural datasets and include policies that:
  - i) support the protection, enhancement, and restoration of ecosystems through measures such as land acquisition, density bonusing, development permit requirements, subdivision design, conservation covenants, land trusts, and tax exemptions;
  - ii) seek to acquire, restore, enhance, and protect lands, in collaboration with adjacent member jurisdictions and other partners, that will enable ecosystem connectivity in a regional green infrastructure network;
  - iii) discourage or minimize the fragmentation of ecosystems through low impact development practices that enable ecosystem connectivity; and
  - iv) indicate how the interface between ecosystems and other land uses will be managed to maintain ecological integrity using edge planning, and measures such as physical buffers, or development permit requirements.



Maple Ridge

c) include policies that:

- i) support the consideration of natural assets and ecosystem services in land use decision-making and land management practices;
- ii) enable the retention and expansion of urban forests using various tools, such as local tree canopy cover targets, urban forest management strategies, tree regulations, development permit requirements, land acquisition, street tree planting, and reforestation or restoration policies, with consideration of resilience;
- iii) reduce the spread of invasive species by employing best practices, such as the implementation of soil removal and deposit bylaws, development permit requirements, and invasive species management plans;
- v) increase green infrastructure along the Regional Greenway Network, the Major Transit Network, community greenways, and other locations, where appropriate, and in collaboration with Metro Vancouver, TransLink, and other partners; and
- iv) support watershed and ecosystem planning, the development and implementation of Integrated Stormwater Management Plans, and water conservation objectives.

### Strategy 3.3 Advance land use, infrastructure, and human settlement patterns that reduce energy consumption and greenhouse gas emissions, create carbon storage opportunities, and improve air quality

The tenets of the regional growth strategy are crucial for meeting the region's commitment to reduce greenhouse gas emissions and to reach carbon neutrality by the year 2050. As described in other strategies in the regional growth strategy, this can be achieved in three key ways: by supporting growth and development patterns that enable sustainable transportation options; by encouraging higher-density built forms and multi-unit developments which are typically more energy efficient than lower-density alternatives; and by reducing development pressures in areas that naturally store and sequester carbon (such as conservation and agricultural lands). To supplement these important policy actions from other goal areas in the regional growth strategy, Strategy 3.3 contains the region's greenhouse gas emissions reduction targets and associated policies.

#### Metro Vancouver will:

##### 3.3.1 Implement the:

a) strategies and actions of the regional growth strategy that contribute to regional targets to reduce greenhouse gas emissions by 45% below 2010 levels by the year 2030 and to achieve a carbon neutral region by the year 2050; and

b) *Metro Vancouver Clean Air Plan, Climate 2050*, and other associated actions to help achieve the regional greenhouse gas emissions reduction targets in Action 3.3.1 a).

3.3.2 Work with the Federal Government, the Province, TransLink, member jurisdictions, First Nations, non-governmental organizations, energy utilities, the private sector, and other stakeholders, as appropriate, to:

a) monitor energy consumption, greenhouse gas emissions, and air quality related to land use, buildings, industry, agriculture, waste, transportation, and other emission sources, and consider lifecycle energy and emissions;

b) monitor and pursue opportunities to increase carbon storage in natural areas; and

c) promote best practices and develop guidelines to support local government actions that reduce energy consumption and greenhouse gas emissions, support a transition to clean, renewable energy (including electricity), create carbon storage opportunities, and improve air quality.

3.3.3 Work with TransLink, member jurisdictions, and health authorities to advocate that health impact assessments be conducted for major transportation projects and significant development projects with an aim to minimizing public exposure to traffic-related air contaminants.

3.3.4 Work with the Federal Government, the Province, and other stakeholders when conducting environmental assessments to reduce the environmental and health impacts related to regional air quality and greenhouse gas emissions.

3.3.5 Accept Regional Context Statements that advance land use, infrastructure, and settlement patterns that reduce energy consumption and greenhouse gas emissions, improve air quality, create carbon storage opportunities, and that meet or work towards Action 3.3.7.

**3.3.6** Advocate to the Federal Government and the Province to establish and support legislative and fiscal actions, that help the public and private sector maximize reductions in energy consumption and greenhouse gas emissions, and improve air quality, such as:

- a) in the building sector,
  - i) accelerating the transition of energy efficiency requirements in the *BC Building Code* to net zero energy ready levels by 2032;
  - ii) setting greenhouse gas and energy performance requirements for new and existing buildings;
  - iii) increasing incentives and financing tools for new low-carbon, zero-emissions, and resilient buildings;
  - iv) supporting large-scale building electrification;
  - v) requiring benchmarking and energy labels for new and existing buildings;
  - vi) supporting reductions in embodied emissions of buildings, and the increased use of low-carbon circular building products and processes;
  - vii) supporting programs, services and incentives for low-carbon upgrade options in rental buildings that benefit building owners and tenants;
  - viii) incenting equitable transit-oriented development through policy and funding programs; and
  - ix) supporting, where feasible and appropriate, energy recovery, renewable energy generation and zero-carbon district energy systems, and related transmission needs.
- b) in the transportation sector,
  - i) revising enabling legislation to allow regional road usage charging for the purposes of managing congestion and greenhouse gas emissions;
  - ii) supporting electric vehicle charging in new and existing buildings through requirements and programs;

- iii) continuing to increase the amount of reliable and sustainable funding available for sustainable transportation infrastructure and low emission travel modes, such as active transportation and public transit; and
- iv) continuing to advance stringent standards for on-road vehicle emissions and fuel carbon content.

#### **Member jurisdictions will:**

**3.3.7** Adopt Regional Context Statements that:

- a) identify how local land use and transportation policies will contribute to meeting the regional greenhouse gas emission reduction target of 45% below 2010 levels by the year 2030 and achieving a carbon neutral region by the year 2050;
- b) identify policies, actions, incentives, and / or strategies that reduce energy consumption and greenhouse gas emissions, create carbon storage opportunities, and improve air quality from land use, infrastructure, and settlement patterns, such as:
  - i) existing building retrofits and construction of new buildings to meet energy and greenhouse gas performance guidelines or standards (e.g. BC Energy Step Code, passive design), the electrification of building heating systems, green demolition requirements, embodied emissions policies, zero-carbon district energy systems, and energy recovery and renewable energy generation technologies, such as solar panels and geoexchange systems, and zero emission vehicle charging infrastructure; and
  - ii) community design, infrastructure, and programs that encourage transit, cycling, rolling and walking; and
- c) focus infrastructure and amenity investments in Urban Centres and Frequent Transit Development Areas, and at appropriate locations along Major Transit Growth Corridors.



**TransLink will:**

**3.3.8** Support regional air quality objectives and greenhouse gas emission reduction targets by advancing policy and infrastructure to support the aggressive transition of the ground-based vehicle fleet to zero-emissions, and by transitioning the entire transit fleet to one that utilizes low-carbon fuels.

**3.3.9** In collaboration with Metro Vancouver and member jurisdictions, establish a definition of major development proposals, which are referenced in the *South Coast British Columbia Transportation Authority Act*, to support the objective of concentrating Major Trip-Generating uses in areas well served by transit.





### Strategy 3.4 Advance land use, infrastructure, and human settlement patterns that improve resilience to climate change impacts and natural hazards

Climate change is expected to continue to impact Metro Vancouver through warmer temperatures, decreased snowpack, sea level rise, longer summer drought periods, and increased precipitation in the fall, winter, and spring. The region is also exposed to multiple natural hazards, many of which are worsened by climate change. Where and how the region accommodates growth determines the degree to which communities and infrastructure are exposed to these risks. While efforts need to be made to ensure that all populations are well-equipped to address these challenges, proactive and collaborative planning can minimize risks by encouraging growth and development in more resilient areas, where feasible, and taking measures to ensure existing communities and infrastructure are resilient to current and future risks.

**TABLE 5. MAJOR NATURAL HAZARDS AND CLIMATE CHANGE IMPACTS AFFECTING METRO VANCOUVER**

NATURAL HAZARDS	RELATED CLIMATE CHANGE IMPACTS
Earthquakes	
Tsunamis	Sea level rise
Landslides	More precipitation (fall, winter, and spring)
Floods (pluvial, coastal, riverine)	More precipitation (fall, winter, and spring) Sea level rise Decrease in snowpack
Wildfires	Longer drought periods (summer) Warmer temperatures and extreme heat events Reduced air quality
Erosion	Sea level rise More precipitation (fall, winter, and spring)
Subsidence	Sea level rise
Windstorms and other extreme weather events	Sea level rise More precipitation (fall, winter, and spring)

**Metro Vancouver will:**

**3.4.1** Incorporate climate change and natural hazard risk assessments into the planning and location of existing and future Metro Vancouver utilities, assets, operations, and other critical infrastructure.

**3.4.2** Work with the Integrated Partnership for Regional Emergency Management, the Federal Government, the Province, First Nations, TransLink, member jurisdictions, adjacent regional districts, and other stakeholders, as appropriate, to:

- a) collaboratively develop and share information and data related to hazards, risks, and vulnerabilities in the Metro Vancouver region, which may include preparing a regional multi-hazard map, and identifying and coordinating priority actions, implementation strategies, and funding mechanisms;
- b) plan for climate change impacts and natural hazard risks when extending utilities and transportation infrastructure that support development;
- c) support the integration of emergency management, utility planning, and climate change adaptation principles in land use plans, transportation plans, and growth management policies;
- d) research and promote best practices and develop guidelines to support resilience to the impacts of climate change and natural hazards as it relates to planning and development;
- e) support regional flood management approaches, such as the implementation of the Lower Mainland Flood Management Strategy; and
- f) research and share information related to the impacts of climate change and natural hazards on vulnerable populations, and focus resilience actions on equitable outcomes.

**3.4.3** Accept Regional Context Statements that advance land use, settlement patterns, transportation and utility infrastructure which improve the ability to withstand climate change impacts and minimize natural hazard risks, and that meet or work towards Actions 3.4.5, 3.4.6, 3.4.7, and 3.4.8.

**3.4.4** Advocate to the Federal Government and the Province that they:

- a) review and improve existing provincial legislation and guidelines regarding flood hazard management at the local level, encourage the adoption of local flood hazard policies and bylaws, and implement appropriate preparatory actions to address the long-term implications of sea level rise on infrastructure planning, construction, and operations;
- b) incorporate resilience considerations into building codes and standards;
- c) modernize the provincial *Emergency Program Act* and associated regulations with requirements for land use planning, and consider land use implications in the development of climate change adaptation strategies; and
- d) provide guidelines, programs, funding, and timely data and information to support regional and local planning for climate change impacts and natural hazards.

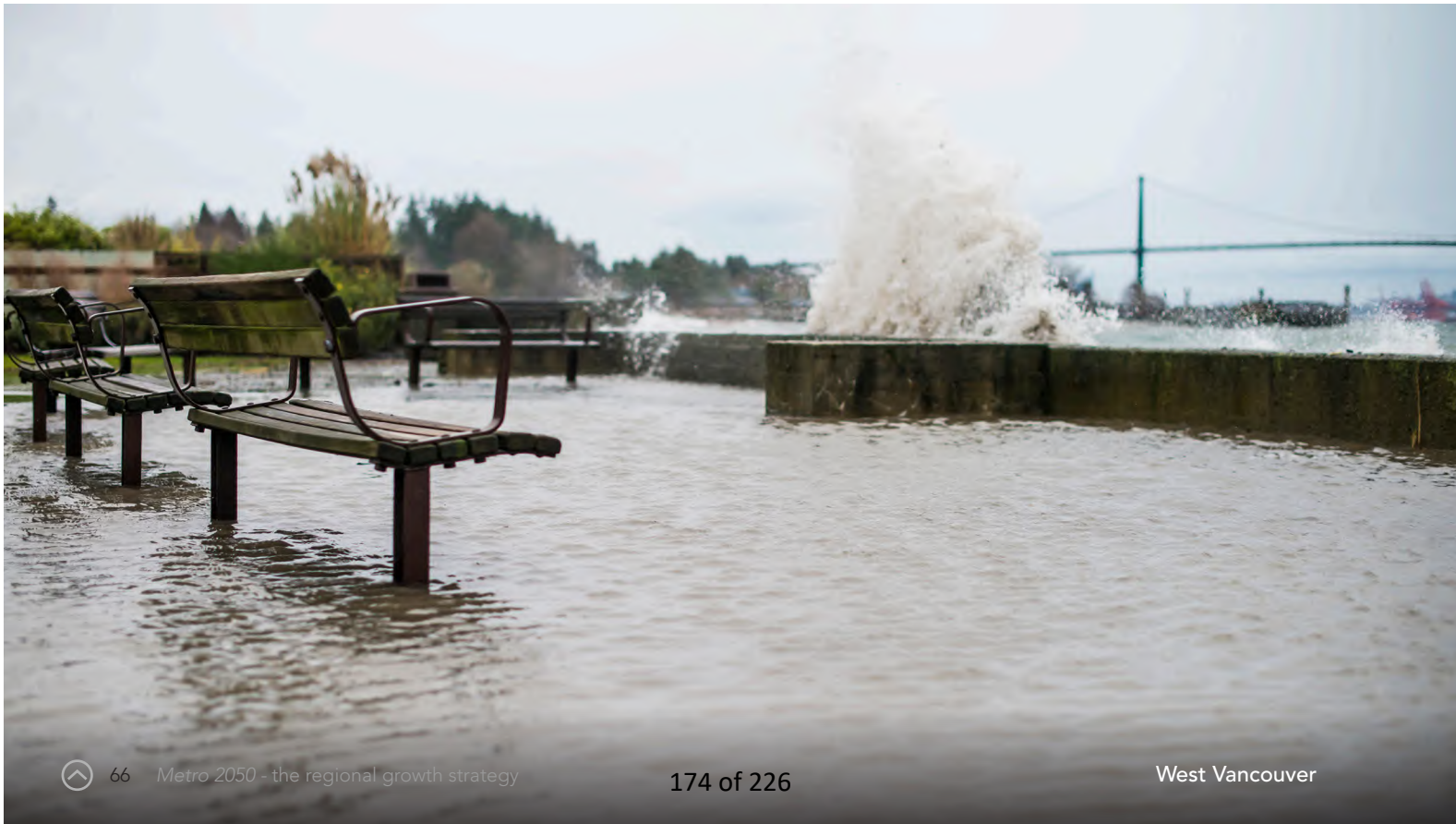
**Member jurisdictions will:****3.4.5** Adopt Regional Context Statements that:

- a) include policies that minimize risks associated with climate change and natural hazards in existing communities through tools such as heat and air quality response plans, seismic retrofit policies, and flood-proofing policies; and
- b) include policies that discourage new development in current and future hazardous areas to the extent possible through tools such as land use plans, hazard-specific Development Permit Areas, and managed retreat policies, and where development in hazardous areas is unavoidable, mitigate risks.

**3.4.6** Incorporate climate change and natural hazard risk assessments into planning and location decisions for new municipal utilities, assets, operations, and community services.

**3.4.7** Integrate emergency management, utility planning, and climate change adaptation principles when preparing land use plans, transportation plans, and growth management policies.

**3.4.8** Adopt appropriate planning standards, guidelines, and best practices related to climate change and natural hazards, such as flood hazard management guidelines and wildland urban interface fire risk reduction principles.









GOAL  
4

# Provide Diverse and Affordable Housing Choices





## Goal 4: Provide Diverse and Affordable Housing Choices

A diverse and affordable housing stock is critical to accommodating growth and supporting the region's population. Communities across Metro Vancouver are experiencing significant housing pressures paired with accelerating housing costs in the rental and ownership markets. Strong demand for rental housing is causing low rental vacancy rates and rising rental costs, and at the same time, existing affordable rental housing stock is aging and in need of maintenance and renewal.

High land and construction costs make the delivery of new rental units that are affordable to low and moderate income households challenging, particularly in proximity to transit. Lower income households earning less than 80% of the Regional Median Household Income, who make up the majority of renters in the region, are being forced to look further afield for housing that is affordable and meets their needs. Additionally, there is a shortage of permanent, affordable, and supportive housing units to meet the acute housing needs of vulnerable populations including those experiencing or at risk of homelessness.

In response to these challenges, a diverse mix of housing types and tenures that respond to an aging population, changing family and household characteristics, and a range of household incomes across the region is needed. Having housing choices means that all residents can find adequate and suitable housing that is affordable based on their household income, and that meets their unique needs and preferences. For the purpose of implementing *Metro 2050's* policies, "affordable housing" is defined as housing that is affordable to households earning up to 120% of the Regional Median Household Income. Goal 4 encourages diverse and affordable housing choices as a means to provide opportunities for residents to live in their desired community or neighbourhood, close to employment, transit, schools, parks, amenities and important social connections.

The first strategy identifies actions to promote an adequate supply of housing to meet existing and future housing needs across the housing continuum. Supporting housing policy efforts across the region through housing strategies or action plans that work towards achieving the number and type of housing units required to meet the needs identified in local housing needs reports or assessments is critical to this strategy.

The second strategy encourages policies and actions that expand rental housing supply, mitigate or limit the net loss of existing purpose-built rental and non-market housing stock, and protect renter households. The strategy also advocates for measures and incentives to stimulate the supply of below-market and market rental housing, particularly in proximity to transit.

The third strategy advocates for capital and operating funding to support the non-profit housing sector and the overall provision of permanent, affordable, and supportive housing. The strategy also requests ongoing housing and income benefits to supplement the high cost of rent in the private market. It recognizes that housing strategies and action plans must be aligned with plans to address homelessness. All levels of government have a role to play in creating opportunities for diverse housing options, and senior government funding is essential to meeting the housing needs of these populations.

A commitment to social equity prioritizes planning and decision-making processes that ensure the housing needs of the region's residents and populations that are housing insecure are met, so that everyone can access safe, quality, affordable, and climate resilient housing. Furthermore, it means intentionally seeking to prevent economic, health or access disparities in the housing market that are primarily experienced by lower income populations, renter households, and individuals experiencing or at risk of homelessness. Essential to this commitment is examining and modifying any systemic and institutional practices and policies that may limit the quality, affordability, accessibility, and equitable distribution of housing that is necessary to create a livable and resilient region for current and future generations.

**Strategies to achieve this goal are:**

- 4.1 Expand the supply and diversity of housing to meet a variety of needs
- 4.2 Protect tenants and expand, retain, and renew rental housing supply
- 4.3 Meet the housing needs of lower income households and populations experiencing or at risk of homelessness



Port Moody

## Strategy 4.1 Expand the supply and diversity of housing to meet a variety of needs

Housing diversity refers to the range of housing types and tenures required to meet the needs of households of all sizes, incomes, ages, and abilities. Expanding the supply and diversity of housing that meets a variety of needs across the housing continuum increases affordability, social equity, and resilience in the region.

### Metro Vancouver will:

**4.1.1** Assist member jurisdictions in developing housing strategies or action plans by providing analysis on regional demographics, household characteristics, and market conditions, and work with member jurisdictions to review and refine local housing priorities, policies, and housing needs reports or assessments in the context of this analysis.

**4.1.2** Monitor and report on the progress of member jurisdiction housing strategies or action plans in achieving the number and type of housing units required to meet current and anticipated housing needs, as determined in the member jurisdiction's housing needs report or assessment.

**4.1.3** Support member jurisdictions in the development and delivery of housing policies and actions by compiling, analyzing, and communicating data, preparing implementation guidelines and best practices research, and convening discussions on issues of common interest.

**4.1.4** Accept Regional Context Statements that describe how local plans, strategies, and policies will achieve diverse and affordable housing options, expand the supply and diversity of housing to meet a variety of needs along the housing continuum, and meet or work towards Actions 4.1.8 and 4.1.9.

**4.1.5** Advocate to the Province to create new enabling legislation that provides the ability for local governments to mandate affordable housing through inclusionary zoning powers.

**4.1.6** Advocate to the Province to provide funding to support member jurisdictions in the development and update of housing strategies or action plans that are aligned with housing needs reports or assessments.

**4.1.7** Advocate to the Province for expanded funding maximums and eligibility that support Treaty and other First Nations in developing housing needs reports or assessments to ensure a complete regional and provincial understanding of housing needs, and to help inform local plans, policies, and development decisions.



**Member jurisdictions will:****4.1.8** Adopt Regional Context Statements that:

- a) indicate how they will work towards meeting estimated future housing needs and demand, as determined in their housing needs report or assessment;
- b) articulate how local plans and policies will meet the need for diverse (in tenure, size, and type) and affordable housing options;
- c) identify policies and actions that contribute to the following outcomes:
  - i) increased supply of adequate, suitable, and affordable housing to meet a variety of needs along the housing continuum;
  - ii) increased supply of family-friendly, age-friendly, and accessible housing;
  - iii) increased diversity of housing tenure options, such as attainable homeownership, rental, co-op housing, rent-to-own models, and cohousing;
  - iv) increased density and supply of diverse ground-oriented and infill housing forms in low-density neighbourhoods, such as duplex, four-plex, townhouse, laneway/coach houses, and apartments, particularly in proximity to transit;
  - v) integration of land use and transportation planning such that households can reduce their combined housing and transportation costs;

- vi) increased social connectedness in multi-unit housing;
- vii) integrated housing within neighbourhood contexts and high quality urban design; and
- viii) existing and future housing stock that is low carbon and resilient to climate change impacts and natural hazards.

**4.1.9** Prepare and implement housing strategies or action plans that:

- a) are aligned with housing needs reports or assessments, and reviewed or updated every 5-10 years to ensure that housing strategies or action plans are based on recent evidence and responsive to current and future housing needs;
- b) are based on an assessment of local housing market conditions, by tenure, including assessing housing supply, demand, and affordability;
- c) identify housing priorities, based on the assessment of local housing market conditions, household incomes, changing population and household demographics, climate change and natural hazards resilience, and key categories of local housing need, including specific statements about special needs housing and the housing needs of equity-seeking groups; and
- d) identify implementation measures within their jurisdiction and financial capabilities, including actions set out in Action 4.1.8.



## Strategy 4.2 Protect tenants and expand, retain, and renew rental housing supply

Purpose-built rental housing is a critical component of the housing continuum, offering security of tenure to the many residents who cannot or choose not to purchase a home. The private rental market also forms a large part of the region's overall rental housing stock, and provides additional rental housing options such as secondary suites, laneway/coach houses, and rented condominiums. Increasing the rental housing supply, retaining existing rental housing, and renewing aging rental housing while minimizing the impacts of redevelopment and renovation on existing tenants preserves affordability and increases opportunities for everyone in the region to access an energy efficient home they can afford.

### Metro Vancouver will:

**4.2.1** Monitor the purpose-built rental housing stock in the region, and report on rental housing supply gaps by income level and number of bedrooms.

**4.2.2** Implement the *Metro Vancouver Housing 10-Year Plan* (2019) and seek opportunities for Metro Vancouver Housing to partner with member jurisdictions and others to expand affordable rental housing across the region.

**4.2.3** Set a regional target that at least 15% of newly completed housing units built within all Urban Centres and Frequent Transit Development Areas combined, by the year 2050, be affordable rental housing units. Metro Vancouver will monitor progress towards the target and review the target periodically.

**4.2.4** Accept Regional Context Statements that describe how local plans, strategies, and policies will increase rental housing supply while protecting tenants, and that meet or work towards Actions 4.2.7 and 4.2.8.

**4.2.5** Advocate to the Federal Government and the Province to provide measures and incentives to stimulate private sector investment in rental housing to help achieve the current and anticipated need for rental housing units, as determined by housing needs reports or assessments.

**4.2.6** Advocate to the Province for expanded measures to address housing speculation and vacant homes as a means of increasing long-term rental options, and bringing unoccupied housing into the secondary rental market.





**Member jurisdictions will:****4.2.7** Adopt Regional Context Statements that:

- a) indicate how they will, within their local context, contribute toward the regional target of having at least 15% of newly completed housing units built within all Urban Centres and Frequent Transit Development Areas combined, to the year 2050, be affordable rental housing units (recognizing that developing affordable rental housing units in transit-oriented locations throughout the urban area is supported);
- b) articulate how local plans and policies will mitigate impacts on renter households, particularly during redevelopment or densification of Urban Centres and Frequent Transit Development Areas;
- c) identify the use of regulatory tools that protect and preserve rental housing;
- d) identify policies and actions that contribute to the following outcomes:
  - i) increased supply of affordable rental housing in proximity to transit and on publicly-owned land;
  - ii) increased supply of market and below-market rental housing through the renewal of aging purpose-built rental housing and prevention of

net rental unit loss;

- iii) protection and renewal of existing non-market rental housing;
- iv) mitigated impacts on renter households due to renovation or redevelopment, and strengthened protections for tenants; and
- v) reduced energy use and greenhouse gas emissions from existing and future rental housing stock, while considering impacts on tenants and affordability.

**4.2.8** Prepare and implement housing strategies or action plans that:

- a) encourage the supply of new rental housing and mitigate or limit the loss of existing rental housing stock;
- b) encourage tenant protections and assistance for renter households impacted by renovation or redevelopment of existing purpose-built rental housing; and
- c) cooperate with and facilitate the activities of Metro Vancouver Housing under Action 4.2.2.



## Strategy 4.3 Meet the housing needs of lower income households and populations experiencing or at risk of homelessness

Lower income households and populations experiencing or at risk of homelessness have the most acute housing needs in the region. Through collaboration with the Federal Government and the Province, efforts to support the provision of non-market housing can ensure equitable access to housing for all. Meeting the housing needs of the most vulnerable in our communities also provides a number of co-benefits including positive health outcomes and improved social cohesion.

### Metro Vancouver will:

**4.3.1** Accept Regional Context Statements that describe how local plans, strategies, and policies will meet the specific housing needs of lower income households, including the existing housing needs of populations experiencing or at risk of homelessness, and that meet or work towards Actions 4.3.7 and 4.3.8.

**4.3.2** Collaborate with member jurisdictions, non-profit housing and homelessness services providers, and the Federal Government and the Province on coordinated actions to address regional homelessness.

**4.3.3** Advocate to the Federal Government and the Province for measures and incentives to stimulate non-market rental supply and capital and operating funding to support the construction of permanent, affordable, and supportive housing across the region.

**4.3.4** Advocate to the Federal Government and the Province to provide capital and operating funding to meet the current and anticipated housing needs of lower income households and populations experiencing or at risk of homelessness, as determined by housing needs reports or assessments.

**4.3.5** Advocate to the Federal Government and the Province for portfolio-based, long-term funding sources for non-profit housing providers that shift away from short-term, project-based funding models as a means of ensuring the sustainability of the non-profit housing sector.

**4.3.6** Advocate to the Federal Government and the Province to provide and expand ongoing rent supplements and housing benefits in a way that takes into account geographic and cost of living

considerations, and to increase the shelter portion of income assistance to ensure that lower income households and populations experiencing or at risk of homelessness can afford suitable and adequate housing.

### Member jurisdictions will:

**4.3.7** Adopt Regional Context Statements that:

a) indicate how they will collaborate with the Federal Government, the Province, and other partners, to assist in increasing the supply of permanent, affordable, and supportive housing units; and

b) identify policies and actions to partner with other levels of government and non-profit organizations in order to create pathways out of homelessness and contribute to meeting the housing and support needs of populations experiencing or at risk of homelessness.

**4.3.8** Prepare and implement housing strategies or action plans that:

a) identify opportunities to participate in programs with other levels of government to secure additional housing units to meet the housing needs of lower income households;

b) identify strategies to increase community acceptance and communicate the benefits of affordable and supportive housing development; and

c) are aligned with or integrate plans to address homelessness, and identify strategies to reduce the total number of households that are in core housing need and populations experiencing or at risk of homelessness.



GOAL  
5

# Support Sustainable Transportation Choices



North Vancouver City

## Goal 5: Support Sustainable Transportation Choices

Land uses influence travel patterns and transportation systems, in turn, affect land use and development. Achieving the goals of *Metro 2050* requires the alignment of land use and transportation strategies. Accessible and sustainable transportation choices are supported by strategies for a compact urban area, with transit-oriented development patterns that focus growth in Urban Centres, Major Transit Growth Corridors and Frequent Transit Development Areas. This transit-oriented pattern of growth helps reduce vehicle use, traffic congestion, energy consumption and greenhouse gas emissions from on-road sources while fostering transit ridership and active transportation. It provides the region's residents with resilient mobility options, a cleaner environment, and opportunities to reduce household transportation costs.

The first strategy identifies actions to increase the proportion of trips by transit, cycling, walking, and other alternatives to single occupancy vehicles. *Transport 2050*'s Major Transit Network will be critical in reinforcing *Metro 2050*'s network of Urban Centres and Frequent Transit Development Areas. *Metro 2050* aligns these locations for growth with planned transit connections to provide clearer expectations about future growth and investment. Aligning land use and transportation in this way enables a diversity of transit oriented affordable housing, shorter trips and greater access to opportunity. Careful and coordinated planning efforts will ensure that new mobility options, including micro-mobility and automated vehicles, are integrated into the region's transportation system in an equitable way that promotes reductions in both greenhouse gas emissions and traffic congestion.

The second strategy recognizes the fundamental role that the Major Road Network, Regional Truck Route Network, provincial highways, and federal transportation facilities play in shaping regional growth, moving people and goods within the region, and connecting the region with intra-provincial, national and international destinations. The strategy advocates for active management of the existing and planned capacity of the road network and the demands put upon it to minimize the need for capital-intensive roadway expansion in the future.

Further, rail and marine transportation have the potential to play a larger role in the future for goods movement, so protecting rail rights-of-way and access points to waterways today is critical to preserving transportation options in the future. This strategy also anticipates the changing nature of industry and digitalization of commerce.

Metro Vancouver works in partnership with member jurisdictions, TransLink, the Port of Vancouver, airport authorities, the Federal Government, and the Province to coordinate decision-making in support of the regional growth strategy. TransLink prepares and implements strategic transportation plans for roads, transit, active transportation, and goods movement, among other regional transportation programs. TransLink is the region's lead agency for coordinating micro-mobility, automated vehicles, and other new mobility options. TransLink is also responsible for the region's long-term transportation strategy, *Transport 2050*. *Metro 2050* and *Transport 2050* comprise the region's long-term vision for the land use and





transportation system. The Province prepares provincial highway and transit plans which help to guide the development of regional transportation plans. Both the Federal Government and the Province play significant roles in funding regional transit and goods movement infrastructure. Metro Vancouver advocates for reductions in transportation-related greenhouse gas emissions and common air contaminants.

A commitment to equity includes creating a more equitable land use and transportation system across the region that will enhance social cohesions and connectedness to benefit all communities; mitigate the environmental, economic, and social risks associated with goods and service movement; and ultimately, provide affordable and accessible transportation that creates quality jobs, promotes safe and inclusive communities, and focuses on results that benefit all.

**Strategies to achieve this goal are:**

- 5.1 Coordinate land use and transportation to encourage transit, multiple-occupancy vehicles, cycling and walking
- 5.2 Coordinate land use and transportation to support the safe and efficient movement of vehicles for passengers, goods, and services



## Strategy 5.1 Coordinate land use and transportation to encourage transit, multiple-occupancy vehicles, cycling and walking

The coordination of land use and transportation supports positive region building by ensuring communities are connected to sustainable transportation networks while investing in transportation improvements for existing neighbourhoods. Over time, this creates a regional growth pattern where destinations are closer together and more accessible for all, with less need to drive. The benefits of this transit-oriented growth pattern include: reduced greenhouse gas emissions; formation of complete, compact communities; more physical activity and improved health; lower transportation costs; and a more resilient economy with better access to job opportunities, diverse and affordable housing, and community amenities.

### Metro Vancouver will:

**5.1.1** Provide advice and input into TransLink's regional transportation system, planning, and demand management strategies through the provision of land use, growth management and air quality information and forecasts, and the evaluation of land use and vehicle emissions impacts.

**5.1.2** Establish the following objectives for the regional transportation system:

- a) support the regional land use framework and strategy, as set out in Strategy 1.2;
- b) reduce energy consumption and greenhouse gas emissions while improving air quality, as set out in Strategy 3.3; and
- c) ensure the safe and efficient movement of vehicles for passengers, goods, and services, as set out in Strategy 5.2.

**5.1.3** Encourage TransLink and member jurisdictions, in support of Action 5.1.2 (a), to increase transit services between Urban Centres, according to the following priorities:

- Priority 1: Major Transit Network
- Priority 2: Frequent Transit Network
- Priority 3: Local Transit Networks

**5.1.4** Collaborate with TransLink, in support of Action 5.1.2 (b), on the achievement of regional priorities to increase the share of trips made by transit, shared mobility options, cycling, walking, and rolling; and to reduce energy consumption and air emissions from on-road transportation sources. Metro Vancouver will support the development of strategic transportation plans to achieve this objective, within TransLink's mandate to plan and manage the regional transportation system.

**5.1.5** In collaboration with other levels of government, implement the Regional Greenway Network, as shown in Map 10.

**5.1.6** Collaborate with member jurisdictions and TransLink to jointly develop a regional parking strategy that:

- a) provides guidance to inform municipal parking requirements;
- b) considers local needs through customized guidance for different land use and transportation contexts; and
- c) seeks to right-size the supply of parking in the region, reduce the number of vehicles, make more efficient use of the limited land supply, and improve housing and transportation affordability.

**5.1.7** Accept Regional Context Statements that identify policies and actions that coordinate land use and transportation planning to support transit, shared mobility options, cycling, walking, and rolling; that support the transition to zero-emission vehicles; and that meet or work towards Action 5.1.14.

**5.1.8** Advocate to the Federal Government and the Province, in collaboration with TransLink and member jurisdictions, to evaluate and develop measures to mitigate the potential negative impacts on the region's Industrial, Agricultural, and Conservation and Recreation lands when planning transportation infrastructure, including roadways, railways and rapid transit systems.

**5.1.9** Advocate for the Province to work with TransLink, adjacent regional districts, and Metro Vancouver in coordinating transportation planning and infrastructure projects in the Lower Mainland.

**5.1.10** Advocate to the Federal Government and the Province to provide increased and permanent funding for expanding, upgrading, and operating:

- a) the regional transit system;
- b) the Regional Cycling Network (i.e. the Major Bikeway Network for utility cycling trips and Regional Greenway Network for recreational travel); and
- c) municipal pedestrian infrastructure.

**5.1.11** Advocate to railway companies, when developing their plans and strategies for rail corridors and facilities in the region, that they coordinate and consult with member jurisdictions, TransLink, Port of Vancouver, and Metro Vancouver to ensure that they are compatible with and support the regional transportation and land use planning goals of the regional growth strategy.

**5.1.12** Advocate to member jurisdictions to engage with impacted municipalities and First Nations when developing plans, policies, and programs related to new mobility, shared mobility, and inter-jurisdictional connectivity.

**5.1.13** Advocate to the Province and TransLink to co-locate active transportation and micro-mobility facilities with rapid transit infrastructure and include delivery of such facilities within the scope of rapid transit projects.

#### **Member jurisdictions will:**

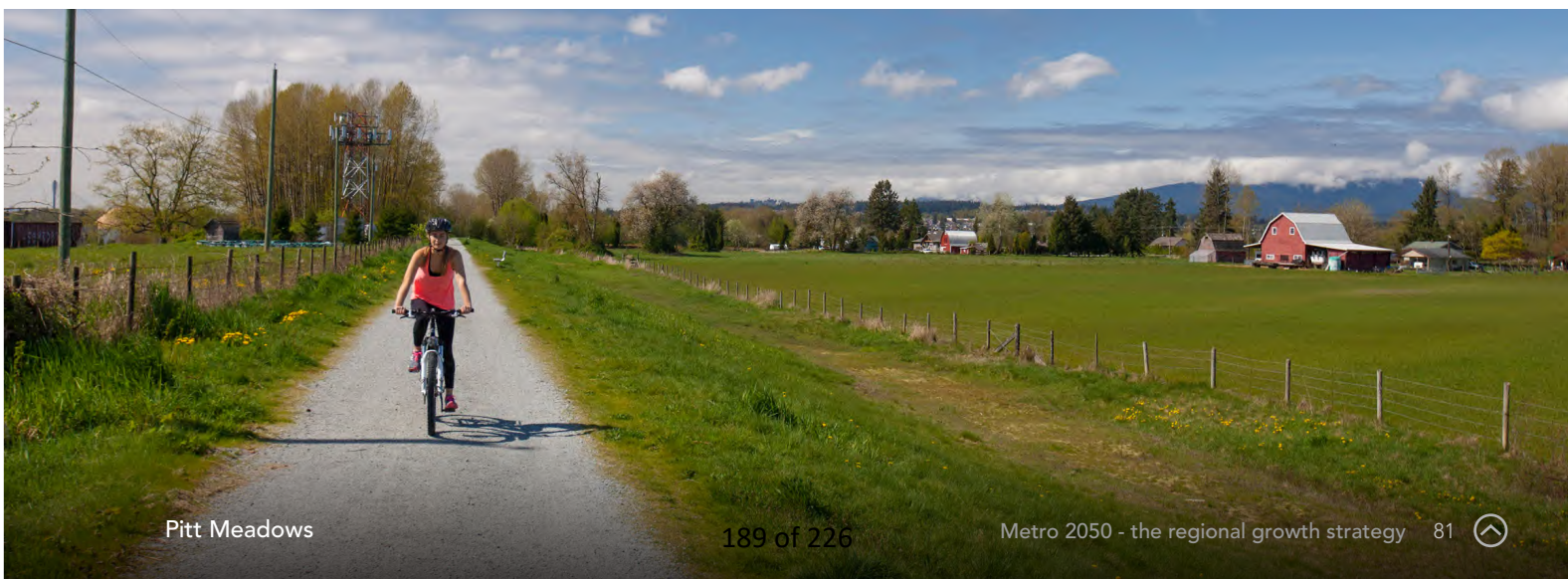
**5.1.14** Adopt Regional Context Statements that:

- a) identify land use and transportation policies and actions to encourage a greater share of trips made by transit, shared mobility options, cycling, walking, and rolling;
- b) support the development and implementation of transportation demand management strategies, such as: parking pricing and supply measures, transit priority measures, end-of-trip facilities for active transportation and micro-mobility, and shared mobility services;
- c) manage and enhance municipal infrastructure in support of transit, multiple-occupancy vehicles, cycling, walking, and rolling;
- d) support the transition to zero-emission vehicles;
- e) support implementation of the Regional Greenway Network and Major Bikeway Network, as identified in Map 10; and
- f) support implementation of local active transportation and micro-mobility facilities that provide direct, comfortable, all ages and abilities connections to the Regional Greenway Network, Major Bikeway Network, transit services, and everyday destinations.

#### **TransLink will:**

**5.1.15** In support of coordinated land use and transportation to encourage transit, multiple occupancy vehicles, cycling, walking, and rolling:

- a) prepare and implement strategic transportation plans that support focused growth in Urban Centres and Frequent Transit Development Areas, while avoiding known unmitigated flood and other natural hazard risk areas;
- b) provide Metro Vancouver with adequate opportunity to provide input into TransLink's strategic planning and decision-making processes that would affect the achievement of the objectives and priorities set out in Action 5.1.2;
- c) establish and monitor performance measures and / or targets that support: an increased share of trips made by transit, shared mobility, zero-emission vehicles, cycling, walking, and rolling; and the associated reductions in air emissions from on-road transportation sources;
- d) prepare and implement regional transportation system and demand management strategies, such as: ridesharing programs, transportation user-based pricing, and regulation for ride-hailing services and other emerging mobility technologies;
- e) support the development of safe and comfortable cycling networks, including both the Regional Cycling Network and local infrastructure, serving Urban Centres, Frequent Transit Development Areas, and other areas of high potential for utility and/or recreational cycling;
- f) work with the Province, the Integrated Partnership for Regional Emergency Management, and member jurisdictions to evaluate the potential impacts of climate change and known unmitigated natural hazards on rapid transit alignments, station locations, and associated transportation infrastructure;
- g) explore methods to support affordable housing through existing and future revenue sources, such as: continuing the reduction or waiver of the TransLink Development Cost Charge on certain types of not-for-profit rental housing; seeking partnership opportunities with the Province and others to support delivering affordable housing; seeking commitments on the development of affordable housing policies and targets in partnership agreements required for major transportation projects; and considering the impacts of proposed projects on affordable housing when evaluating future rapid transit investments;
- h) continue developing active transportation, micro-mobility, and transit networks as a means to create redundancy in low-cost, low-emission travel options;
- i) work with the Province, member jurisdictions, and others to implement both the Regional Greenway Network and the Major Bikeway Network, as identified in Map 10; and
- j) continue to identify viable new opportunities to create and improve transit, active transportation, and micro-mobility linkages to and within First Nations communities.



## Strategy 5.2 Coordinate land use and transportation to support the safe and efficient movement of vehicles for passengers, goods, and services

Roadways, truck routes, provincial and federal highways, port terminals, rail corridors, navigable waterways, airports, transit routes, and active transportation and micro-mobility facilities play a vital role in supporting the regional economy, shaping regional growth, and connecting Metro Vancouver to other regions. Making the most of the goods movement system requires protecting industrial lands and transportation rights-of-way, minimizing community impacts, reducing greenhouse gas emissions, and seeking demand-management alternatives to roadway expansion.

### Metro Vancouver will:

**5.2.1** Support implementation of the Regional Goods Movement Strategy and continue to participate in the Greater Vancouver Urban Freight Council.

**5.2.2** Accept Regional Context Statements that identify coordinated land use and transportation policies and actions in support of the safe and efficient movement of vehicles for passengers, goods, and services; and that meet or work towards Action 5.2.6.

**5.2.3** Support the ongoing efforts of the Federal Government, the Province, and the Port of Vancouver to reduce truck traffic on local roads by exploring: the more effective use of the existing multi-modal transportation network on a 24-hour basis; expanding short-sea shipping; moving more containers by rail directly from marine container terminals to transload facilities; and enhancing co-location of import and export transload facilities.

**5.2.4** Advocate to the Province, TransLink, and neighbouring regional districts that the following elements be considered when contemplating expansion of private vehicle capacity on major roads, highways, and crossings:

- a) transportation demand management, active transportation, and micro-mobility strategies as alternatives to, or as integral with, such capacity expansion;
- b) the negative impacts on the achievement of regional greenhouse gas emission reduction targets and air quality objectives;
- c) the negative impacts on the implementation of the regional land use framework and strategy as set out in Strategy 1.2;
- d) the long-term effects of induced demand, ongoing maintenance requirements, life-cycle costs, and opportunity costs;
- e) the negative impacts on ecosystems, as identified in Map 11; and
- f) the ability of the transportation system to withstand known and unmitigated climate change impacts and natural hazards.



**5.2.5** Advocate to the Federal Government and the Province to support the safe, reliable, and efficient movement of vehicles for passengers, goods, and services through:

- a) policies and regulations to protect rail rights-of-way, truck routes, transit routes, and access points to navigable waterways;
- b) policies and regulations to protect communities and habitats by mitigating air quality impacts;
- c) local government funding programs for applied research into transportation system and demand management-related technologies, policies, and regulations to optimize the low-carbon movement of vehicles for passengers, goods, and services - in particular, to and from airports, ports, intermodal goods handling facilities, last mile delivery, and distribution centres for e-commerce;
- d) local government funding programs for survey instruments to obtain timely and comprehensive data on the travel patterns of residents, workers, and goods and service vehicles travelling inter- and intra-regionally; and
- e) local government funding programs and regulations to encourage the transition to zero-emissions options for medium- and heavy-duty vehicles.

**Member jurisdictions will:**

**5.2.6** Adopt Regional Context Statements that:

- a) identify routes on a map for the safe and efficient movement of goods and service vehicles to, from, and within Urban Centres; Frequent Transit Development Areas; Major Transit Growth Corridors; Industrial, Employment, and Agricultural lands; ports; airports; and international border crossings;
- b) identify land use and related policies and actions that support the optimization and safety of goods movement via roads, highways, railways, aviation, short sea shipping, and active transportation;
- c) support the development of local and regional transportation system management strategies, such as the provision of information to operators of goods and service vehicles for efficient travel decisions, management of traffic flow using transit priority measures, coordinated traffic signalization, and lane management;
- d) identify policies and actions that support the protection of rail rights-of-way, truck routes, and access points to navigable waterways in order to reserve the potential for goods movement;
- e) identify policies and actions to mitigate public exposure to unhealthy levels of noise, vibration, and air pollution associated with the Major Road Network, Major Transit Network, railways, truck routes, and Federal / Provincial Highways; and







f) identify policies and actions that anticipate the land and infrastructure requirements for goods movement and drayage, such as truck parking, zero-emission vehicle charging infrastructure, and e-commerce distribution centres, and mitigate any negative impacts of these uses on neighbourhoods.

**TransLink will:**

**5.2.7** Support the safe and efficient movement of vehicles for passengers, goods, and services in consideration of the regional land use framework and strategy, as set out in Strategy 1.2, by:

- a) managing and maintaining the Major Road Network and Regional Truck Route Network;
- b) implementing the Regional Goods Movement Strategy;
- c) preparing and implementing regional transportation system and demand management strategies; and
- d) continuing to identify viable new opportunities to create and improve active transportation, micro-mobility, and transit linkages between the region's Industrial and Employment lands and the regional labour force.

**5.2.8** Support the protection of rail rights-of-way, truck routes, and access points to navigable waterways to preserve the potential for goods movement, in consideration of the potential impacts on air quality, habitat, and communities.

**5.2.9** Seek to minimize negative impacts from within-and-through passenger, goods, and service vehicle movement on the environment and public health within the Lower Fraser Valley Airshed.



## F. Implementation

### 6.1 Regional Growth Strategy Implementation Framework

**6.1.1** Metro Vancouver and affected local governments will implement the regional growth strategy within a collaborative decision-making framework. This framework is based on provisions set out in the *Local Government Act* and in recognition by Metro Vancouver and affected local governments that collaborative decision-making is necessary in order to achieve the vision and goals laid out in the regional growth strategy.

The regional growth strategy has been designed so that the more regionally significant an issue, the higher the degree of regional federation involvement in decision-making, and conversely, the less regionally significant an issue, the less Metro Vancouver involvement there is. This approach is intended to provide appropriate consideration of land use planning decisions made within Metro Vancouver and member jurisdictions.

This collaborative decision-making process applies to:

- acceptance by affected local governments of the initial regional growth strategy and subsequent amendments;
- acceptance by Metro Vancouver of municipal Regional Context Statements and subsequent amendments;
- ongoing regional growth strategy and Regional Context Statement administration and procedures; and
- implementation guidelines.



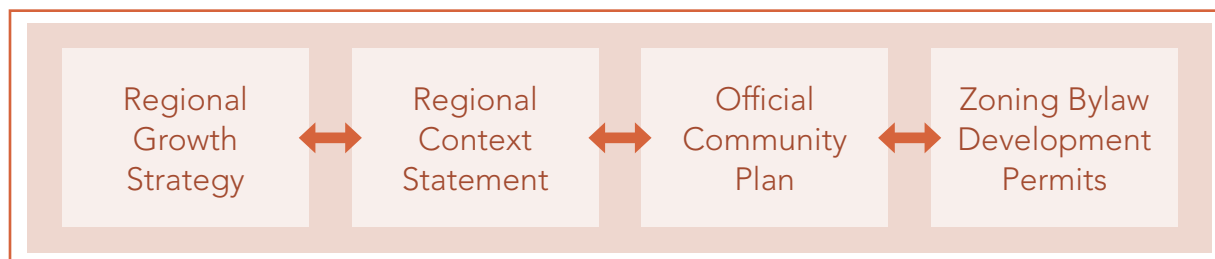
**TABLE 6. REGIONAL GROWTH STRATEGY IMPLEMENTATION FRAMEWORK\***

PRINCIPLES	EXAMPLES	PROCEDURES
Fundamental change to core goals or strategies	Amend the goals or strategies; delete an entire goal; change the amendment process	Type 1: 50% + 1 MVRD Board weighted vote and acceptance by all affected local governments
Region-wide significance for non-urban designations	Change Urban Containment Boundary or Agricultural designation	Type 2: 2/3 MVRD Board weighted vote
Region-wide significance for urban designations	Large scale Industrial area designation change	Type 3: 50% + 1 MVRD Board weighted vote
Small scale urban designation changes	Small scale Industrial land use designation change	As described under 6.2.7, Official Community Plan amendment and notification of Metro Vancouver in writing within 30 days after OCP adoption
Local planning matter with no regional significance	Rezoning consistent with Official Community Plan	Official Community Plan matters, no Regional Context Statement reference required

\*Table 6 for reference only

## 6.2 Regional Context Statements

**6.2.1** Within two years of the Metro Vancouver Board's adoption of a regional growth strategy, each member jurisdiction must prepare or update a regional context statement as part of its Official Community Plan and submit it to the MVRD Board for acceptance. A member jurisdiction will submit its Regional Context Statement to the MVRD Board for acceptance after the member jurisdiction holds its public hearing and subsequent reading relating to its Official Community Plan bylaw amendment.

**FIGURE 6. RELATIONSHIP BETWEEN THE REGIONAL GROWTH STRATEGY AND OFFICIAL COMMUNITY PLANS**

Each member jurisdiction prepares an updated Official Community Plan (OCP) and Regional Context Statement (RCS) within two years of the adoption of a new regional growth strategy or a Type 1 Amendment. The RCS sets out the relationship between the regional growth strategy and the member jurisdiction's OCP, and identifies how local actions will contribute to achieving regional growth strategy goals. Member jurisdictions must submit their RCS to the Metro Vancouver Regional District Board for acceptance.

## Contents of Regional Context Statement

**6.2.2** The Regional Context Statement must identify the relationship between an Official Community Plan and the goals, strategies, and actions identified in the regional growth strategy. If applicable, the Regional Context Statement will identify how the Official Community Plan will be made consistent with the regional growth strategy over time. Regional Context Statements that propose to add or delete Frequent Transit Development Areas must be accompanied by written comments from TransLink.

## Regional Context Statement Process

**6.2.3** If a member jurisdiction proposes an amendment to a Regional Context Statement, it must submit to Metro Vancouver a council resolution, including an accompanying report, that sets out the member jurisdiction's proposed amendment(s).

**6.2.4** If a member jurisdiction anticipates that its proposed Regional Context Statement, or amendment to its Regional Context Statement, will not be accepted by the Metro Vancouver Board because it is not generally consistent with the regional growth strategy, the member jurisdiction should submit a proposed amendment to the regional growth strategy. The procedure for amendments to the regional growth strategy is set out in section 6.4.

**6.2.5** The Metro Vancouver Board will respond within one-hundred-and-twenty (120) days of receiving a Regional Context Statement from a member jurisdiction by Council resolution, indicating whether it accepts the Regional Context Statement. If the Board does not accept a Regional Context Statement, the Board will indicate the provisions to which it objects and the reasons for its objections.

## Consistency with Regional Growth Strategy

**6.2.6** In considering acceptance of Regional Context Statements, the Metro Vancouver Board's expectation is that acceptable Regional Context Statements are generally consistent with the regional growth strategy's goals, strategies, actions and the regional land use designations depicted on Map 2. Regional Context Statements should respond to all applicable policies in the regional growth strategy, and indicate how the Official Community Plan is generally consistent (including projections, maps, and specific policy language) or how it will be made consistent over time.

## Providing for Appropriate Municipal Flexibility

**6.2.7** A member jurisdiction may include language in its Regional Context Statement that permits amendments to the municipality's Official Community Plan to adjust the boundaries of regional land use designations within the Urban Containment Boundary, as follows:

- a) the member jurisdiction may re-designate land from one (1) regional land use designation to another regional land use designation, only if the aggregate area of all proximate sites so re-designated does not exceed one (1) hectare;
- b) notwithstanding section 6.2.7 (a), for sites that are greater than one (1) hectare and less than three (3) hectares in area, the member jurisdiction may redesignate land:
  - from Industrial to General Urban regional land use designation, if the site is contiguous with an Industrial site and the developable portion of the site will be predominantly within 150 metres of an existing or approved rail rapid transit station; or

- from Industrial to Employment regional land use designation if the developable portion of the site will be predominantly within 250 metres of an existing or approved rail rapid transit station,

provided that:

- the re-designation does not impede rail, waterway, road, or highway access for industrial uses; and
- the aggregate area of all proximate sites so re-designated does not exceed three (3) hectares;

c) the aggregate area of land affected by all re-designations under section 6.2.7 (a) and (b) together cannot exceed two (2) percent of the member jurisdiction's total lands within each applicable regional land use designation as of July 29, 2011.

**6.2.8** A member jurisdiction may include language in its Regional Context Statement that permits amendments to its Official Community Plan to adjust the boundaries of Urban Centres and Frequent Transit Development Areas, provided such boundary adjustments meet the guidelines set out in Table 3 (Guidelines for Urban Centres and Frequent Transit Development Areas) of the regional growth strategy.

**6.2.9** Member jurisdictions will notify Metro Vancouver, in writing, of any and all adjustments, as permitted by sections 6.2.7 and 6.2.8, within thirty (30) days after the member jurisdiction has adopted its Official Community Plan amendment bylaw.

**6.2.10** If a member jurisdiction includes language in its Regional Context Statement that permits amendments to its Official Community Plan to adjust the boundaries of regional land use designations within the Urban Containment Boundary or the boundaries of Urban Centres and Frequent Transit Development Areas, as permitted by sections 6.2.7 and 6.2.8 respectively, the prescribed adjustments do not require a new Regional Context Statement or consideration by the Metro Vancouver Regional District (MVRD) Board. All other adjustments to regional land use designation boundaries require an amendment to the member jurisdiction's Regional Context Statement, which must be submitted to the MVRD Board for acceptance in accordance with the requirements of the *Local Government Act*.



## 6.3 Categories of Regional Growth Strategy Amendments

### Type 1 Amendments to the Regional Growth Strategy

**6.3.1** The following Type 1 amendments to the regional growth strategy require an affirmative 50%+1 weighted vote of the Metro Vancouver Regional District Board and acceptance by all affected local governments in accordance with section 436 of the *Local Government Act*:

a) the addition or deletion of regional growth strategy goals or strategies;

b) an amendment to the process for making minor amendments to the regional growth strategy, which is specified in sections 6.3.3 and 6.3.4; and

c) the matters specified in section 437 (4) of the *Local Government Act*.

**6.3.2** All amendments to the regional growth strategy other than the amendments specified in section 6.3.1 are minor amendments (Type 2 and Type 3) for the purposes of section 437 (2) of the *Local Government Act*.

### Type 2 Amendments to the Regional Growth Strategy

**6.3.3** The following Type 2 amendments require an affirmative two-thirds weighted vote of the Metro Vancouver Regional District Board:

a) amendment to the Urban Containment Boundary;

b) amendment of Agricultural or Conservation and Recreation regional land use designations, except as set out in section 6.3.4 (e), (f) and (g);

c) amendment from Rural to Industrial, Employment, or General Urban regional land use designations;

d) amendment of sites located outside the Urban Containment Boundary from Employment to a General Urban regional land use designation;

e) the addition or deletion of an Urban Centre; and

f) the addition or deletion of, or amendment to, the descriptions of the regional land use designations or actions listed under each strategy.

## Type 3 Amendments to the Regional Growth Strategy

**6.3.4** The following Type 3 amendments require an affirmative 50% + 1 weighted vote of the Metro Vancouver Regional District Board:

- a) the addition or deletion of a Frequent Transit Development Area;
- b) for sites within the Urban Containment Boundary, amendments from Industrial, Employment, or General Urban to any other such regional land use designation(s);
- c) amendment from Industrial, Employment, or General Urban to Rural, Agricultural, or Conservation and Recreation regional land use designations;
- d) amendment from Rural to Agricultural or Conservation and Recreation regional land use designation;
- e) amendment from Conservation and Recreation to Agricultural regional land use designation;
- f) for sites that are contiguous with, or within, the Urban Containment Boundary, and are not within the Agricultural Land Reserve and are not subject to the Agricultural Land Commission Act, amendment from Agricultural or Rural to Industrial regional land use designation, and associated Urban Containment Boundary adjustments;
- g) for sites that are identified as Special Study Areas on Map 12, an amendment to another regional land use designation and associated Urban Containment Boundary adjustments;
- h) removal of the Trade-Oriented Lands overlay from parcels with an Industrial regional land use designation;
- i) housekeeping amendments to figures, tables or maps, performance measures or other items related to document structure that do not alter the intent of the regional growth strategy;
- j) amendments to mapping to incorporate maps included in accepted Regional Context Statements;
- k) the reclassification of a Frequent Transit Development Area to an Urban Centre, or reclassification of an Urban Centre type to another Urban Centre type;
- l) an amendment to the Major Transit Growth Corridors; and
- m) all other amendments not identified in sections 6.3.1 or 6.3.3.



## 6.4 Procedures for Regional Growth Strategy Amendments

### Who Can Apply for an Amendment

**6.4.1** The process to initiate amendments to the regional growth strategy is by resolution of the Metro Vancouver Regional District (MVRD) Board. Member jurisdictions may, by resolution, request amendments. The MVRD Board will not give first reading to an amendment bylaw which proposes to change a regional land use designation or the Urban Containment Boundary unless or until the member jurisdiction or jurisdictions in which the subject site is located have requested that amendment or have been given the opportunity to formally comment on the proposed amendment.

### Notification and Request for Comments

**6.4.2** For all proposed amendments to the regional growth strategy the Metro Vancouver Regional District (MVRD) Board will:

- a) provide written notice of the proposed amendment to all affected local governments;
- b) provide a minimum of forty-five (45) days from the date of the notice for affected local governments, and the appropriate agencies, to respond to the proposed amendment;
- c) post notification of the proposed amendment on the Metro Vancouver website, for a minimum of forty-five (45) days from the date of the notice;
- d) if the proposed amendment is to change a site from Industrial or Employment to General Urban regional land use designation, provide written notice and a minimum of forty-five (45) days from the date of the notice for the Port of Vancouver, the Vancouver International Airport Authority, the Ministry of Transportation and Infrastructure and/or the Agricultural Land Commission, as appropriate, to respond to the proposed amendment.

### Procedures for Type 1 Amendments

**6.4.3** For Type 1 amendments to the regional growth strategy set out in section 6.3.1, the procedures set out in section 436 of the *Local Government Act* apply.

### Procedures for Type 2 Amendments

**6.4.4** For Type 2 amendments to the regional growth strategy set out in section 6.3.3, the Metro Vancouver Regional District (MVRD) Board will:

- a) consider first, second, and third reading of the amendment bylaw;
- b) provided the amendment bylaw receives an affirmative two-thirds weighted vote of the MVRD Board at first, second, and third readings, refer for comment the proposed amendment to the regional growth strategy to all affected local governments, in accordance with the requirements set out in section 6.4.2;
- c) provide public engagement opportunities that may include:
  - notification of the proposed amendments on the Metro Vancouver website;
  - requesting written comments by way of a comment form on the Metro Vancouver website;
  - opportunities for the public to appear as a delegation to the Regional Planning Committee or the MVRD Board when the amendment is being considered;
  - conveyance of comments submitted from the respective local public hearing to the MVRD Board, and
  - hosting a public information meeting (digitally or in person).

d) receive the comments from the notification and referral for comments process set out in section 6.4.2, and consider final reading and adoption of the amendment bylaw, which must receive at least a two-thirds weighted vote of the MVRD Board.

## Procedures for Type 3 Amendments

**6.4.5** For Type 3 amendments to the regional growth strategy set out in section 6.3.4, the Metro Vancouver Regional District (MVRD) Board will:

a) consider first, second, and third reading of the amendment bylaw;

b) provided the amendment bylaw receives an affirmative majority weighted vote of the MVRD Board at each of the first, second, and third readings, notify and refer for comment the proposed amendment to the regional growth strategy to all affected local governments, in accordance with the requirements set out in section 6.4.2;

c) provide public engagement opportunities that may include those listed under 6.4.4 c); and

d) consider final adoption of the amendment bylaw and, provided the amendment bylaw receives an affirmative simple majority weighted vote of the MVRD Board, adopt the amendment bylaw.

## 6.5 Coordination with First Nations

**6.5.1** Metro Vancouver will work with First Nations to facilitate the compatibility of the regional growth strategy and First Nations' planning and development initiatives.

**6.5.2** A land use plan prepared by Tsawwassen First Nation will include a statement equivalent to a Regional Context Statement as defined in the *Local Government Act*, identifying how Tsawwassen First Nation's land use plan is consistent with the regional growth strategy.



## 6.6 Coordination with TransLink

**6.6.1** Metro Vancouver will work with TransLink with the objective that the regional growth strategy and TransLink's regional transportation plans are compatible and complementary. Metro Vancouver will refer to TransLink for written comments on proposed Regional Context Statements that would impact the regional transportation system or significantly affect the demand for regional transportation services.

**6.6.2** As an affected local government, TransLink is required to consider acceptance of the regional growth strategy and any proposed Type 1 amendments, as set out in section 6.3.1.

**6.6.3** TransLink is mandated to provide a regional transportation system that is consistent and supportive of the regional growth strategy, and its associated goals, objectives, land use designations, overlays, and policies. *The South Coast British Columbia Transportation Authority Act* also requires TransLink to: review the regional growth strategy and any amendments to it and advise Metro Vancouver of the implications for the Regional Transportation Strategy, and prepare regional transportation investment plans that set out the relationships between major actions and the regional growth strategy.

## 6.7 Coordination with Other Governments and Agencies

**6.7.1** Metro Vancouver will work with the Fraser Valley Regional District, the Squamish-Lillooet Regional District, and the Islands Trust (regarding Bowen, Bowyer, and Passage Islands) to facilitate the compatibility of regional planning and growth management initiatives in Metro Vancouver and these neighbouring jurisdictions.

**6.7.2** Metro Vancouver will collaborate with the Federal Government and the Province on major investments in the regional transportation system, expansion of diverse and affordable housing options, and the location of public facilities that support the goals and strategies specified in the regional growth strategy. Metro Vancouver will seek formal Implementation Agreements with these agencies to give effect to that intent.





## 6.8 Coordination with Metro Vancouver / Greater Vancouver Boards

**6.8.1** All bylaws adopted and all works and services undertaken by Metro Vancouver Regional District, the Greater Vancouver Water District, or the Greater Vancouver Sewerage and Drainage District must be consistent with the regional growth strategy.

The Greater Vancouver Sewerage and Drainage District and the Greater Vancouver Water District will not directly or indirectly supply, agree to supply, or authorize connections that enable the supply of services to a site that is developed or proposed to be developed after the date of adoption of the regional growth strategy where the nature of that development is, in the sole judgment of the Metro Vancouver Regional District Board, inconsistent with the provisions of the regional growth strategy.

**6.8.2** For further clarity, sites within the Urban Containment Boundary that are designated General Urban, Industrial, or Employment, would be eligible for sewerage services, subject to normal Greater Vancouver Sewerage and Drainage District technical considerations, provided that the proposed development complies with the applicable policies under those designations and any such Urban Centre and Frequent Transit Development Area overlays that might apply.

**6.8.3** For lands with a Rural, Agricultural, or Conservation and Recreation regional land use designation, sections 1.1.1, 1.4.1, 2.3.1, and 3.1.1 apply regardless of whether the area is within one of the Greater Vancouver Sewerage and Drainage District's sewerage areas.

With reference to sections 1.1.1, 1.4.1, 2.3.1, and 3.1.1, in determining whether, in the circumstances, connection to regional sewerage services is the only reasonable means of preventing or alleviating a public health or environmental contamination risk, the Metro Vancouver Regional District (MVRD) Board will consider the opinion of a professional, as such term is defined in the Sewerage System Regulation pursuant to the *Public Health Act* (British Columbia), or if appropriate a qualified professional, as such term is defined in Municipal Wastewater Regulation 87/2012 pursuant to the *Environmental Management Act* (British Columbia), submitted by the member jurisdiction as to the technical and economic feasibility of installing and maintaining a private on-site sewage treatment system in accordance with all laws and regulations applicable in British Columbia. The MVRD Board may also obtain its own opinion from a professional and consider such opinion.

## 6.9 Sewerage Area Extensions

**6.9.1** Notwithstanding any other provision in the regional growth strategy, within the areas identified on Map 12 in the Township of Langley as "Rural within the Sewerage Area", which includes part of the Salmon River Uplands that is contained within the Greater Vancouver Sewerage and Drainage District's Fraser Sewerage Area, and within the area identified as "Sewerage Extension Areas", known as North Salmon River Uplands and South Fernridge, regional sewer servicing will be permitted subject only to the land uses being consistent with the applicable regional land use designation and normal Greater Vancouver Sewerage and Drainage District technical considerations.

**6.9.2** All connections to regional sewerage services approved by the Greater Vancouver Sewerage and Drainage District (GVS&DD) Board as per sections 1.1.1, 1.4.1, 2.3.1, and 3.1.1 will be contained within a sewerage area footprint boundary as determined by the Metro Vancouver Regional District (MVRD) and GVS&DD Boards. Any sewerage service connection outside of that boundary will require MVRD Board and GVS&DD Board approval.

## 6.10 Special Study Areas

**6.10.1** Special Study Areas as depicted on Map 12 identify locations where, prior to the adoption of *Metro Vancouver 2040, Shaping our Future*, a member jurisdiction had expressed an intention to alter the existing land use, and is anticipating a future regional land use designation amendment. Pending Metro Vancouver Regional District Board approval of a regional land use designation amendment, the current regional land use designation(s) applies within the Special Study Area. Amending a regional land use designation within a Special Study Area is considered a Type 3 amendment under section 6.3.4 of the regional growth strategy. This includes any

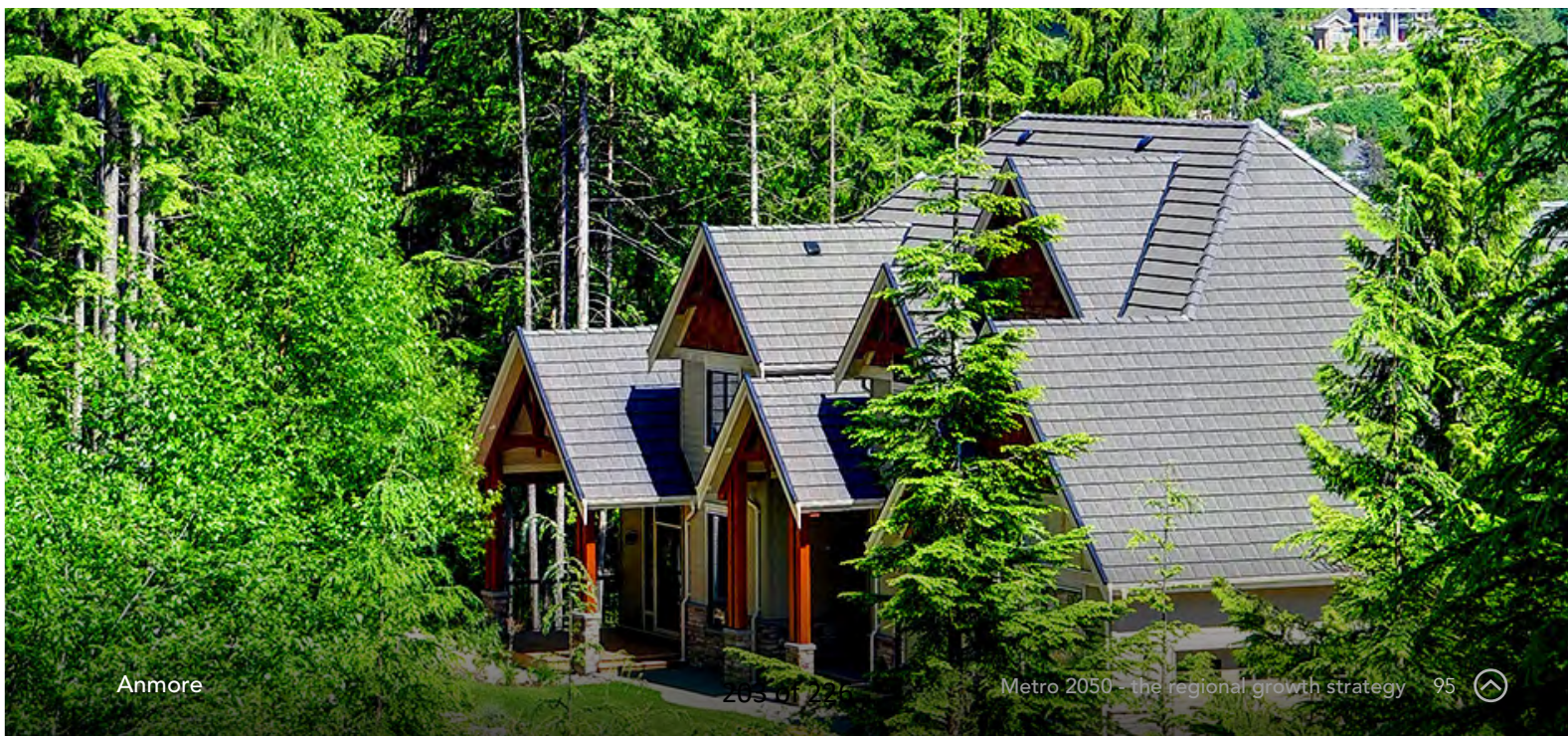
associated adjustment(s) to the Urban Containment Boundary for a Special Study Area. As part of any amendment establishing a change in regional land use designation, the Special Study Area boundaries for those amended lands will be removed from the regional growth strategy.

**6.10.2** If the Special Study Area involves lands within the Agricultural Land Reserve, the member jurisdiction is required to consult with the Agricultural Land Commission during the preparation of the planning studies prior to initiating an application to exclude the lands from the Agricultural Land Reserve.

## 6.11 Jurisdiction

**6.11.1** The regional growth strategy applies to all lands within the boundaries and jurisdiction of the Metro Vancouver Regional District.

**6.11.2** In accordance with the *Agricultural Land Commission Act*, in the event that there is an inconsistency between the regional land use designations or policies set out in the regional growth strategy and the requirements of the *Agricultural Land Commission Act* or regulations and orders made pursuant thereto, the Agricultural Land Commission requirements will prevail.



## 6.12 Regional Growth Strategy Maps

**6.12.1** The maps contained in the regional growth strategy are small scale depictions of the official regional land use designation maps and have been included for convenience purposes only. The official regional land use designation maps, the Sensitive Ecosystems Inventory map, and the Major Transit Growth Corridor map are maintained by Metro Vancouver and available for viewing on the Metro Vancouver website, and will be updated to incorporate changes to designation boundaries that result from adopted regional growth strategy amendment bylaws. TransLink owns and maintains the official Major Transit Network map on its website.

**6.12.2** Where a regional land use designation boundary does not align with a property or parcel legal boundary, the Agricultural Land Reserve boundary, a member jurisdiction Official Community Plan or zoning boundary, or a distinct geographic or natural feature, the regional land use designation boundary will be considered approximate, and the boundary depicted in the respective accepted Regional Context Statement will prevail.

**6.12.3** The boundaries of Urban Centres, Frequent Transit Development Areas, and Trade-Oriented Lands are to be defined by member jurisdictions in Official Community Plans, Neighbourhood or Area Plans, or equivalent, and shown in Regional Context Statements. Where member jurisdictions amend the boundaries of Urban Centres, Frequent Transit Development Areas, or Trade-Oriented Lands, and, in accordance with section 6.2.8, have not changed their Regional Context Statement, member jurisdictions will notify Metro Vancouver, in writing, within thirty (30) days.

**6.12.4** The boundaries for Special Study Areas depicted on Map 12 are not to be expanded nor are new areas to be created. A Type 3 amendment to Map 12 is only permitted to delete Special Study Areas and may occur after the regional growth strategy has been amended to change the regional land use designation of the Special Study Area or when a member jurisdiction decides to eliminate a Special Study Area.

## 6.13 Tables, Figures and Performance Measures

**6.13.1** Tables 1 and 2 showing growth projections and dwelling unit and employment growth targets for Metro Vancouver and member jurisdictions are included in the strategy as guidelines only. These tables are included in the regional growth strategy as a reference for use when preparing Regional Context Statements and regional planning initiatives. Metro Vancouver, in collaboration with member jurisdictions, will maintain projections to monitor growth and will propose updates to tables in accordance with the amendment process set out in section 6.3.4 following Metro Vancouver Regional District Board acceptance of Regional Context Statements or a significant change in the growth projections assumptions.

**6.13.2** The following figures and maps in the regional growth strategy are included as reference only: Tables 5 and 6; Figures 1, 2, 3, 4, 5, and 6; and Maps 1, 10, and 11.

**6.13.3** Pursuant to the *Local Government Act*, Metro Vancouver will prepare an annual report on progress in meeting the goals of the regional growth strategy through the monitoring of the performance measures identified in the Performance Measures section and in meeting other targets set out in the regional growth strategy.



## 6.14 Interpretation

**6.14.1** All terms used in the regional growth strategy that are defined in the *Local Government Act* have the meanings given to such terms in the *Local Government Act*.

**6.14.2** For terms not addressed in 6.14.1, a Glossary of Terms is provided and will be used to define terms used in *Metro 2050*.

**6.14.3** In the case of the Electoral Area A, a Regional Context Statement is not required, but the policy actions listed for member jurisdictions should be addressed in the Electoral Area A Official Community Plan, as applicable.

## 6.15 Implementation Guidelines

**6.15.1** Metro Vancouver may periodically prepare Implementation Guidelines to assist in the implementation of the regional growth strategy, to be prepared in collaboration with member jurisdictions. These guidelines should be read in conjunction with the regional growth strategy, and do not replace or supersede the content and requirements of the regional growth strategy.



# G. Performance Monitoring

Performance monitoring allows for the informed review and update of the regional growth strategy as required. Metro Vancouver will produce annual reports on implementation of the regional growth strategy and progress towards its goals using the following performance measures.

## Regional land use designations

- Total and cumulative change in hectares of land in each of the six regional land use designations

## Goal 1: Create a Compact Urban Area

### Urban Containment

- Total and cumulative change in hectares of land in the Urban Containment Boundary
- Percent of regional dwelling unit growth located within the Urban Containment Boundary
- Number and status of new regional sewerage service connection applications made for areas outside of the Urban Containment Boundary to lands with an Agricultural, Rural, or Conservation and Recreation regional land use designation
- Change in hectares of greenfield lands within the Urban Containment Boundary that have a General Urban regional land use designation

### Growth in Priority Areas

- Percent of regional dwelling unit growth located in Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors
- Change in "Activity Density" (as measured by people + jobs per hectare) in Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors

### Complete Communities and Health

- A walkability index composed of: land use mix, commercial floor area ratio, intersection density, residential density, and sidewalk completeness
- Total and change in number of community services and amenities in Urban Centres and Frequent Transit Development Areas, including, but not limited to child care and green space



## Goal 2: Support a Sustainable Economy

### Employment in Priority Areas

- Percent of regional employment growth located in Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors
- Total and change in employment by sector in Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors
- Change in office floor area within Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors

### Agricultural Lands

- Percent of land in the Agricultural Land Reserve that is actively farmed

### Employment Accessibility

- Average number of kilometres travelled for commute (region-wide)
- Average number of minutes travelled for commute (region-wide)
- Average trip length by transportation mode (region-wide)

### Industrial and Employment Lands

- Total and cumulative change in hectares of land designated Industrial and Employment that is developed and vacant

## Goal 3: Protect the Environment, Address Climate Change, and Respond to Natural Hazards

### Ecosystem Health

- Change in hectares of land protected for nature across the region
- Change in the percentage of regional total tree canopy cover within the Urban Containment Boundary
- Change in hectares of land identified as a Sensitive or Modified Ecosystem
- Change in hectares of identified Sensitive and Modified Ecosystems rated high quality

### Greenhouse Gas Emission Reduction

- Total and change in tonnes of regional greenhouse gas emissions related to land use, buildings, industry, agriculture, waste, transportation, and other emission sources in support of the regional target to reduce greenhouse gas emissions by 45% below 2010 levels by the year 2030 and to achieve a carbon neutral region by the year 2050
- Tonnes of carbon storage in natural areas including lands with Rural, Conservation and Recreation, and Agricultural regional land use designations

## Goal 4: Provide Diverse and Affordable Housing Choices

- Percentage of newly completed housing units built within Urban Centres and Frequent Transit Development Areas that are affordable rental housing units
- Percentage of household income spent on housing and transportation expenses across the region and by tenure and income level

## Goal 5: Support Sustainable Transportation Choices

### Travel Mode Choices

- Total and change in trips by transportation mode
- Percent of residents within walking distance of the Major Transit Network
- Total and per-capita change in the number of actively insured vehicles

### Road and Vehicle Use

- Total and per-capita change in annual vehicle kilometres travelled by transportation mode



## H. Glossary of Terms

The following terms used in the regional growth strategy are defined as follows:

**Affected Local Governments** - Metro Vancouver Regional District member jurisdictions (excluding Bowen Island Municipality), Squamish-Lillooet Regional District, Fraser Valley Regional District, and the South Coast British Columbia Transportation Authority (also known as TransLink).

**Affordable Housing** - For the purpose of *Metro 2050*, “Affordable Housing” is housing that is affordable to households earning up to 120% of the Regional Median Household Income. In Canada, a general measure of housing affordability is the shelter-cost-to-income ratio, where no more than 30% of a household’s gross income is spent on housing (including all housing-related costs like utilities).

**Air Contaminant** - Any substance that is introduced into the air that: injures or is capable of injuring the health or safety of a person; injures or is capable of injuring property or any life form; interferes or is capable of interfering with visibility; interferes or is capable of interfering with the normal conduct of business; causes or is capable of causing material physical discomfort to a person; or damages or is capable of damaging the environment.

**Carbon Neutral Region** - A region that generates no net greenhouse gas emissions. This is achieved by any greenhouse gas emissions across all economic sectors being balanced out by the removal of carbon dioxide from the atmosphere by the plants, trees, and soil of the region, or through technological means.

**Carbon Storage** - The total amount of carbon stored in ecosystems such as forests, wetlands and intertidal areas, which often takes thousands of years to accumulate. A conservative estimate of the total carbon stored in the vegetation and soils of the region’s ecosystems is 65 million tonnes. This estimate is derived from Metro Vancouver’s regional carbon storage dataset and applies to the full extents of the watersheds that supply the Metro Vancouver region’s drinking water, along with estuarine and intertidal areas.

**Climate Change Impacts** - The consequences of realized climate change risks on ecosystems, economies, infrastructure, and communities.

**Dwelling Unit** - For the purposes of *Metro 2050*, the term “Dwelling Unit” is used as a short-form for “private dwelling that is occupied by usual residents” and is measured using Census household data.

**Ecosystem Connectivity** - The physical and functional links between ecosystems that support biodiversity by allowing the movement of species within and between ecosystems. Ecosystem connectivity is achieved by conserving and maintaining a connected network of natural and urban ecosystems.

**Ecosystem Fragmentation** - The process of ecosystems being divided into smaller and isolated patches of land thereby reducing ecosystem integrity.

**Ecosystem Integrity** - The ability of an ecosystem to support diverse communities of organisms and maintain ecological processes (e.g. water, carbon, and nutrient cycling).

**Ecosystem Services** - The benefits people obtain from ecosystems. These services can be grouped into four main types: supporting, provisioning, cultural, and regulating (see Figure 5).

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

**Green Infrastructure** - The natural, enhanced, and engineered assets that collectively provide society with ecosystem services. Natural assets (e.g. forests, wetlands, and soil), enhanced assets (e.g. urban trees, and bioswales), and engineered systems (e.g. green roofs and permeable pavement) improve resilience and mitigate negative environmental impacts from urban development, benefiting both people and ecosystems.

**Low Impact Development** - Development that works with nature to: manage stormwater quantity and quality by preserving trees and other natural features where possible; support ecosystem connectivity; minimizes impervious surfaces; and create dispersed multi-functional landscapes that minimize pollutant runoff, the need for stormwater infrastructure, and extreme flooding and heat events.

**Lower Income Households** - Households earning less than 80% of the Regional Median Household Income.

**Member Jurisdictions** - Metro Vancouver Regional District member municipalities, Tsawwassen First Nation, and Electoral Area A.

**Natural Hazards** - Naturally occurring phenomena that may cause loss of life, injury or other health impacts, property damage, social, and economic disruption or environmental degradation. Examples of natural hazards affecting the Metro Vancouver region include earthquakes, landslides, floods, and wildfires. Many natural hazards are worsened by climate change.

**Official Community Plan** - As defined by the British Columbia *Local Government Act*, or land use plan equivalent in the case of the City of Vancouver, Tsawwassen First Nation, and Electoral Area A.

**Province** - The Government of British Columbia, including its ministries and agencies.

**Regional Context Statement** - As described by the British Columbia *Local Government Act*, the linking document that demonstrates the relationship between an Official Community Plan and the regional growth strategy and, if applicable, how the Official Community Plan is to be made consistent with the regional growth strategy over time. A Regional Context Statement and the rest of the Official Community Plan must be consistent or must demonstrate how they will be made consistent over time.

**Regional Median Household Income** - The median total household income of all households living in the Metro Vancouver region based on Census data. As defined by Statistics Canada, the median divides the region's households into two equal groups: half having an income above that amount, and half having an income below that amount. It differs from the mean (or average) income.

**Resilience** - The capacity to prepare for, avoid, absorb, recover, and adapt to the effects of shocks and stresses in an efficient manner through the preservation, restoration, and adaptation of essential services and functions.

**Risk** - A combined function of the probability of a hazard occurring and the magnitude or severity of its potential consequences (i.e. injury, damage, loss of habitat etc.).

**Sensitive Ecosystem Inventory** - An inventory of the region's most ecologically important areas mapped using provincial methodology. It does not include small, young, significantly disturbed, farmed or landscaped vegetation (e.g. young forests <5 hectares, crop or fallow land, enhanced or engineered assets, backyards and street trees). The inventory includes sensitive ecosystems and modified ecosystems, as follows:

- **Sensitive Ecosystems** - are ecologically fragile, rare or at-risk ecosystems such as wetlands, forests, and riparian areas.
- **Modified Ecosystems** - include young forests (30-80 years old) and freshwater reservoirs, that have experienced some human alteration, but still provide ecosystem services and remain important for biodiversity. In many cases, modified ecosystems are essential to maintaining ecosystem connectivity in highly fragmented landscapes where sensitive ecosystems have been lost.

**Social Equity** - The promotion of 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, race, sex, age, disability, gender, sexuality, religion, indigeneity, class, and other equity related issues.

**Transit-Oriented** - Areas located in close proximity to transit (generally within 800 metres). Distances over 800 metres from rapid transit stations may also be considered within the context of the area.

**Transportation Demand Management** - Measures that seek to reduce the overall amount of driving, particularly for single-occupant vehicle trips, through strategies aimed at deterring driving (e.g. priced parking) or promoting alternative modes of transportation (e.g. providing free bike parking).



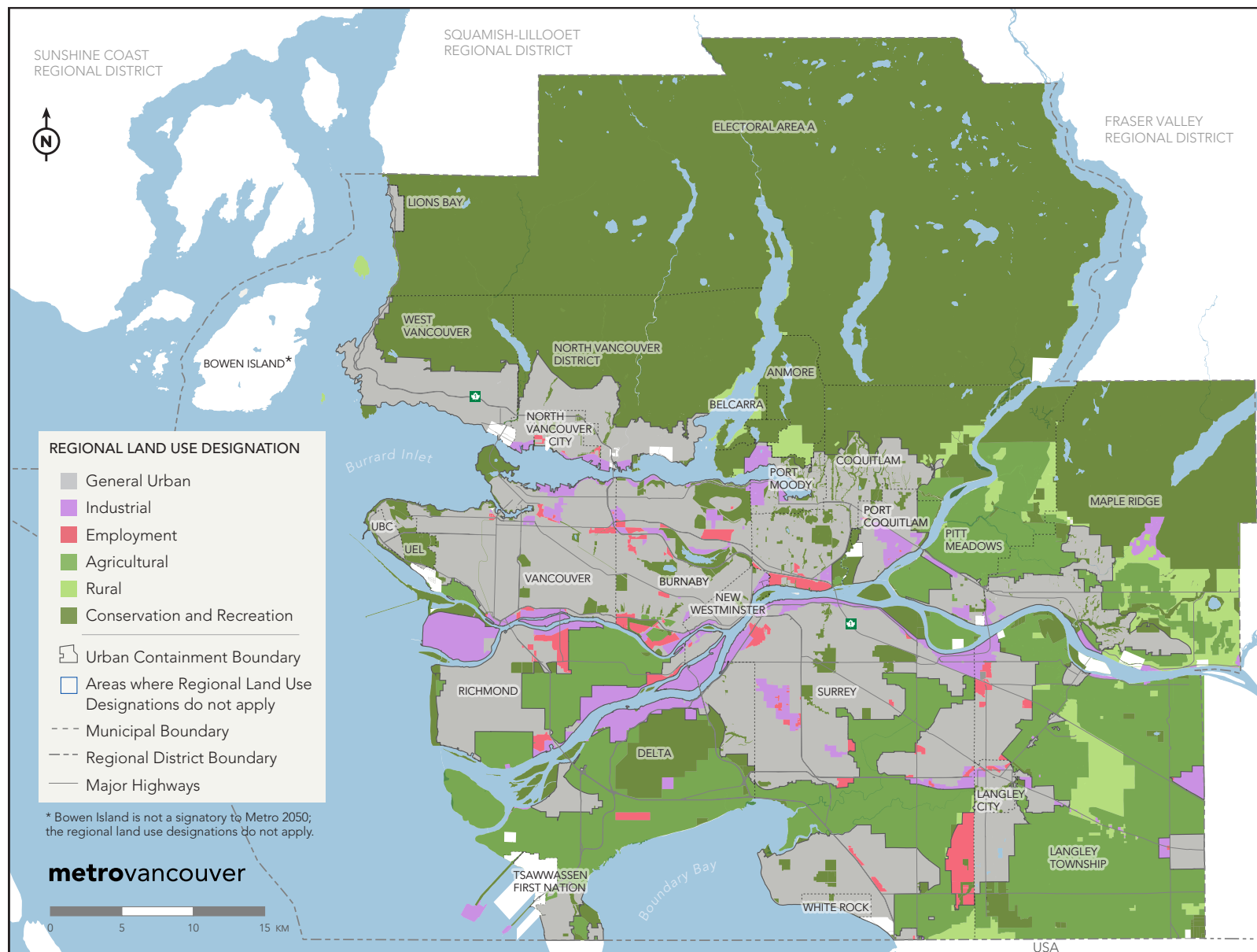
## I. Maps

## MAP 1 Metro Vancouver Region



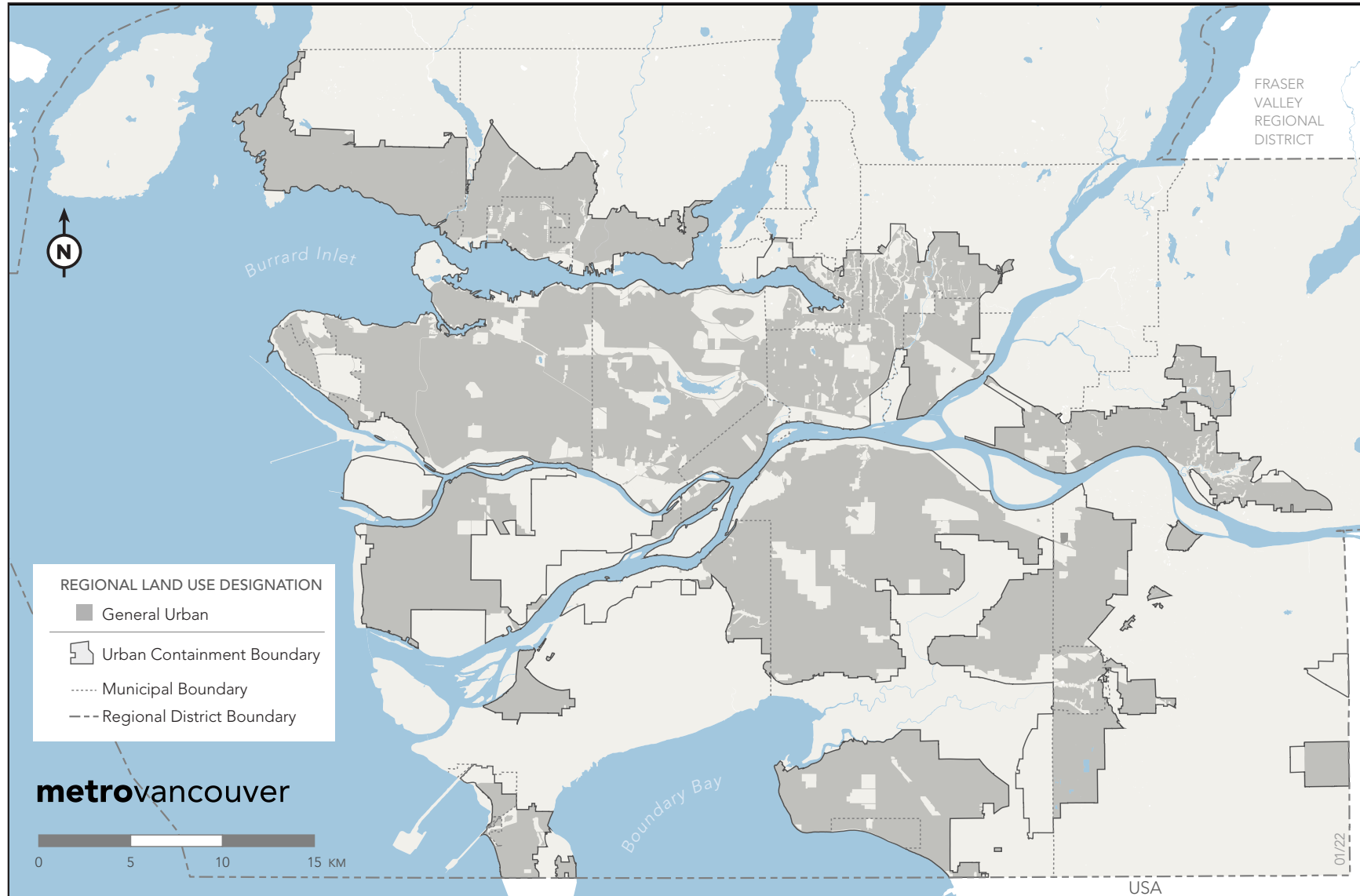
Map for reference only.

## MAP 2 Regional Land Use Designations

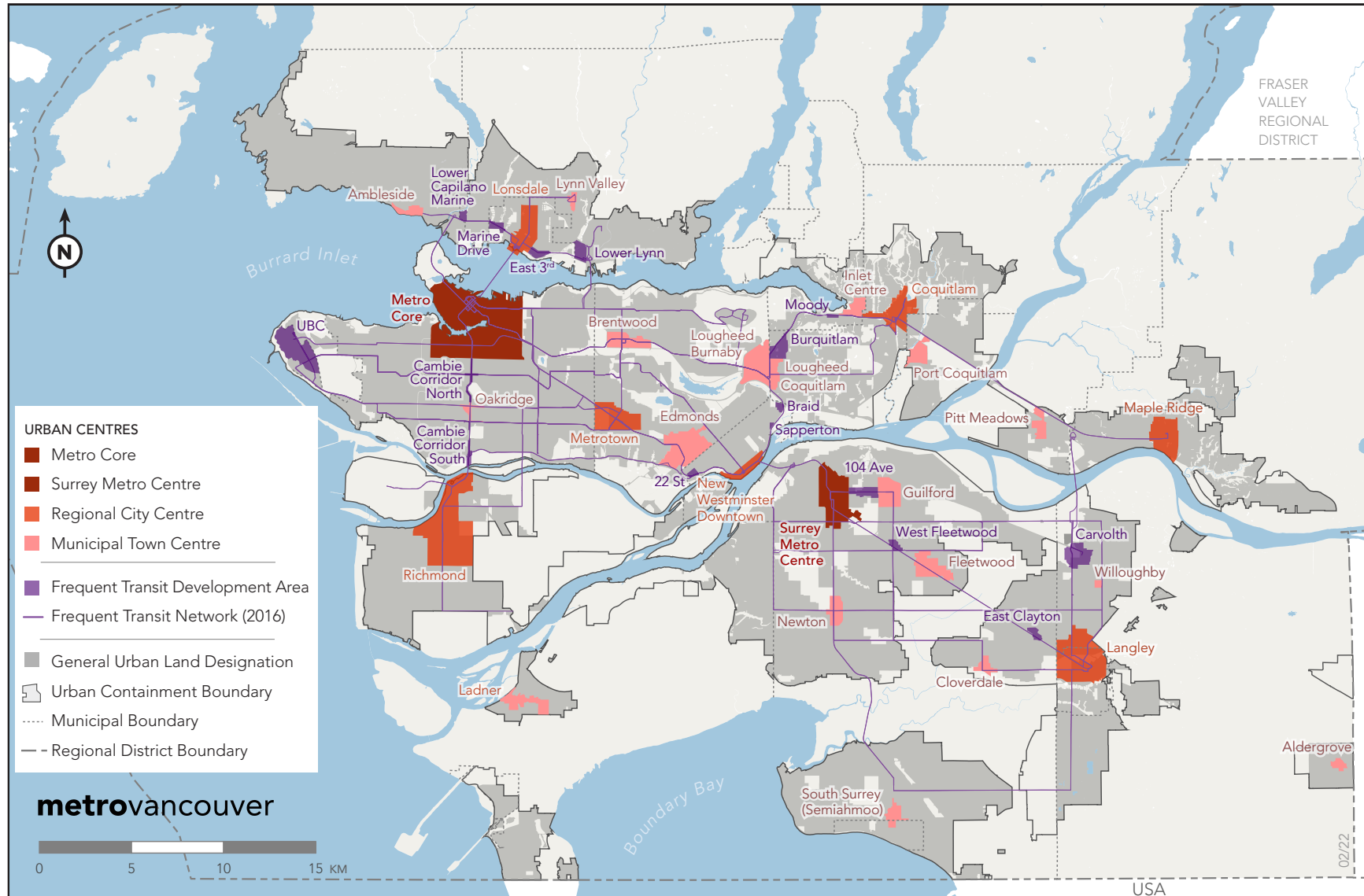


This map is a small scale representation of the Regional Land Use Designation Map that Metro Vancouver maintains as the basis for defining land-use designation boundaries. The official Regional Land Use Designation Map can be found at [metrovancover.org](http://metrovancover.org)

## MAP 3 Urban Containment Boundary and General Urban Lands

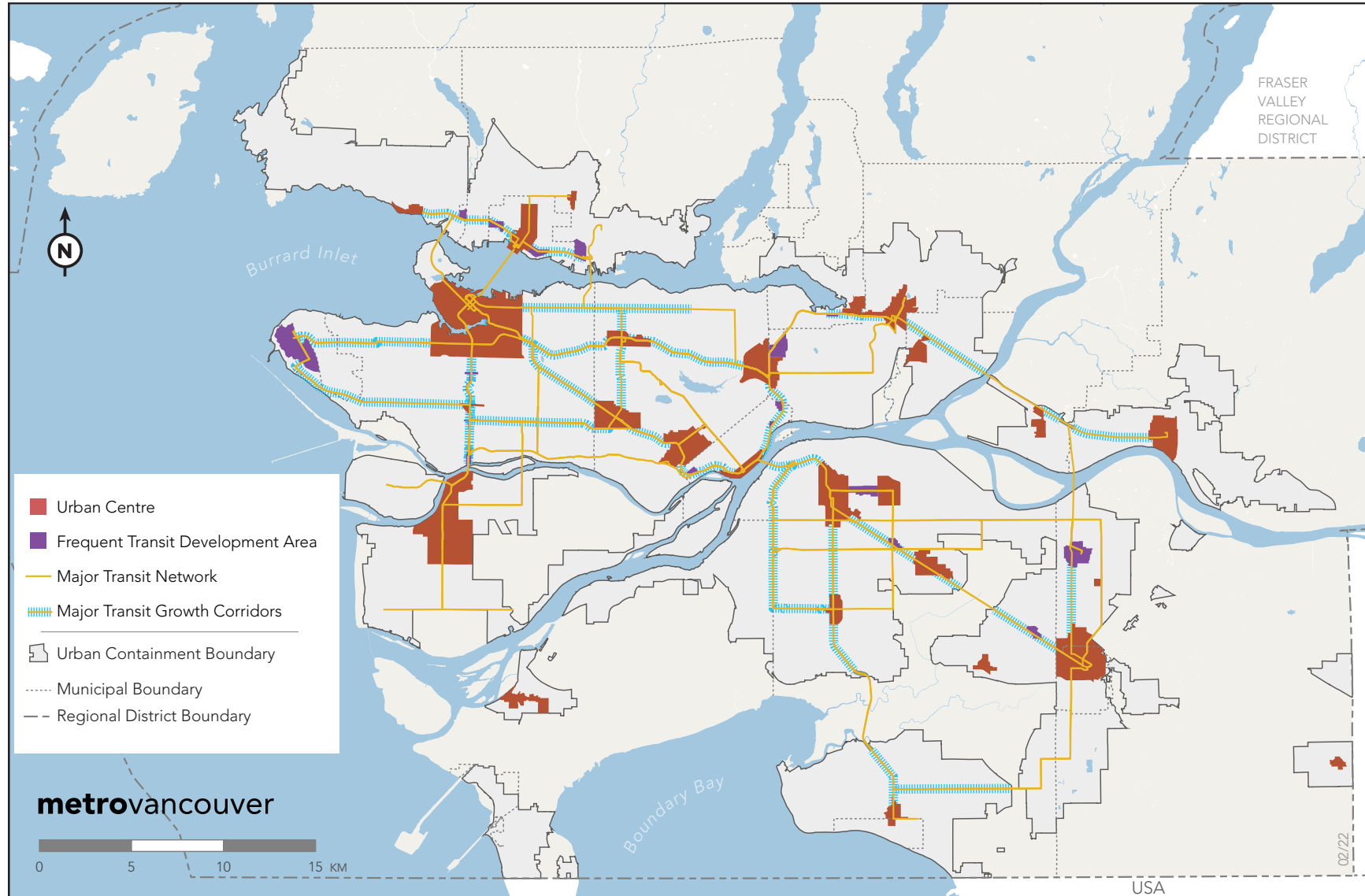


## MAP 4 Urban Centres and Frequent Transit Development Areas



Urban Centres and FTDAs are overlays for structuring residential and employment growth. The boundaries are identified by member jurisdictions. Where overlays cover areas other than General Urban or Employment, the intent and policies of the underlying regional land use designations still apply.

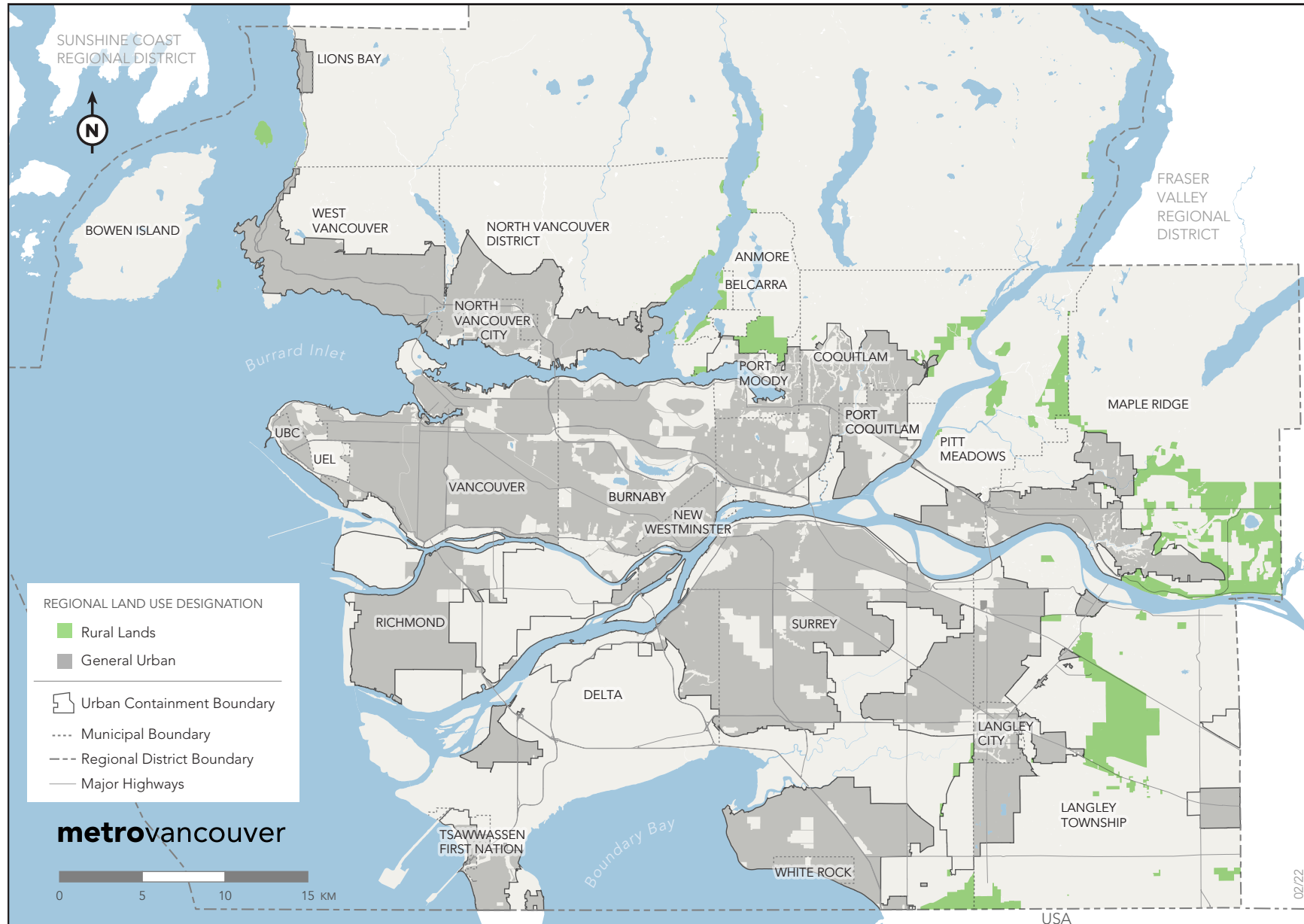
## MAP 5 Major Transit Growth Corridors and Major Transit Network



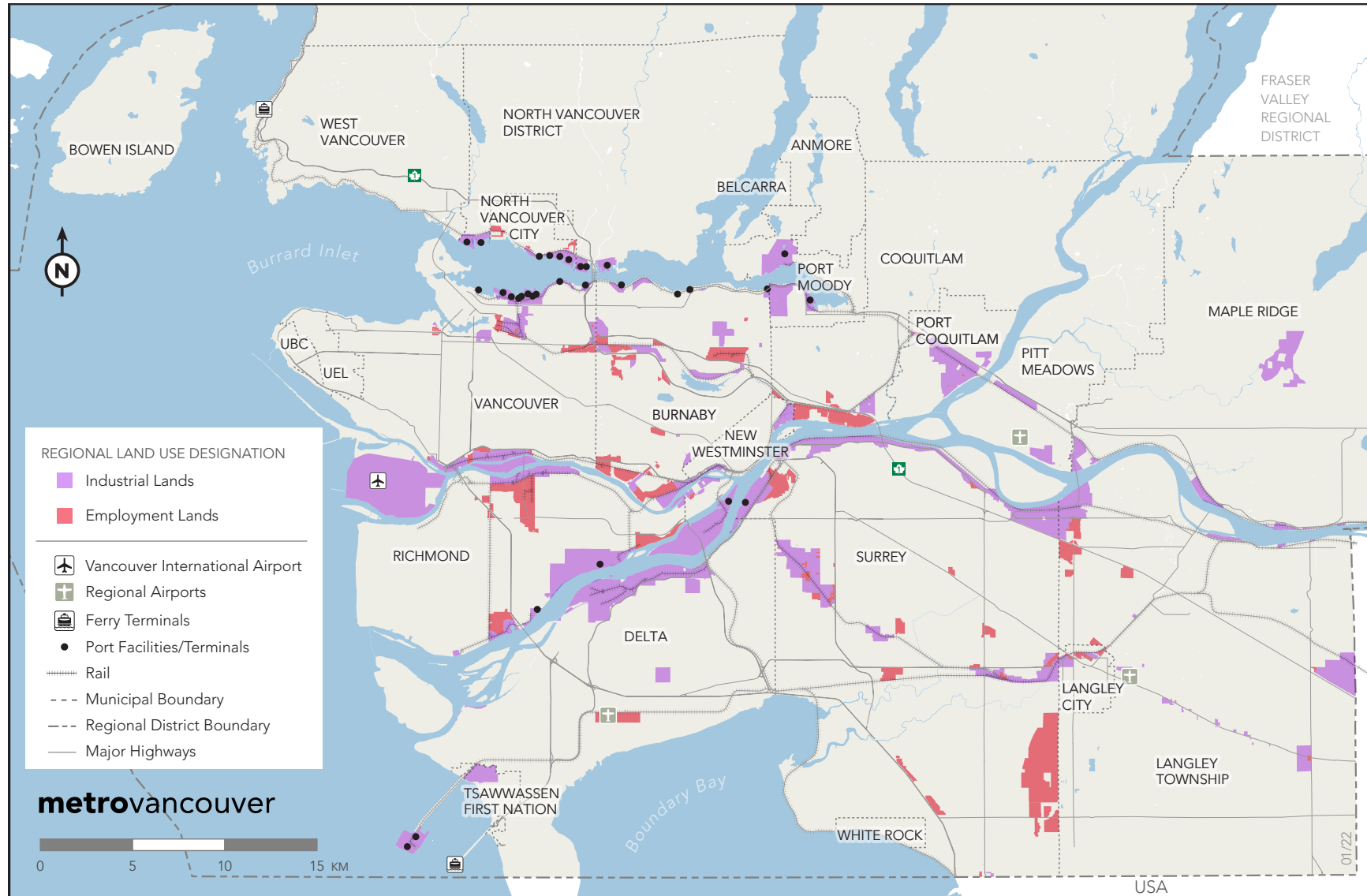
The Major Transit Growth Corridors include a buffer area of approximately 1km on either side of select segments of the Major Transit Network. Not all areas within MTGCs are appropriate for growth. The Major Transit Network is defined in Transport 2050 and is subject to periodic updates; it is shown for illustrative purposes only.



## MAP 6 Rural Lands

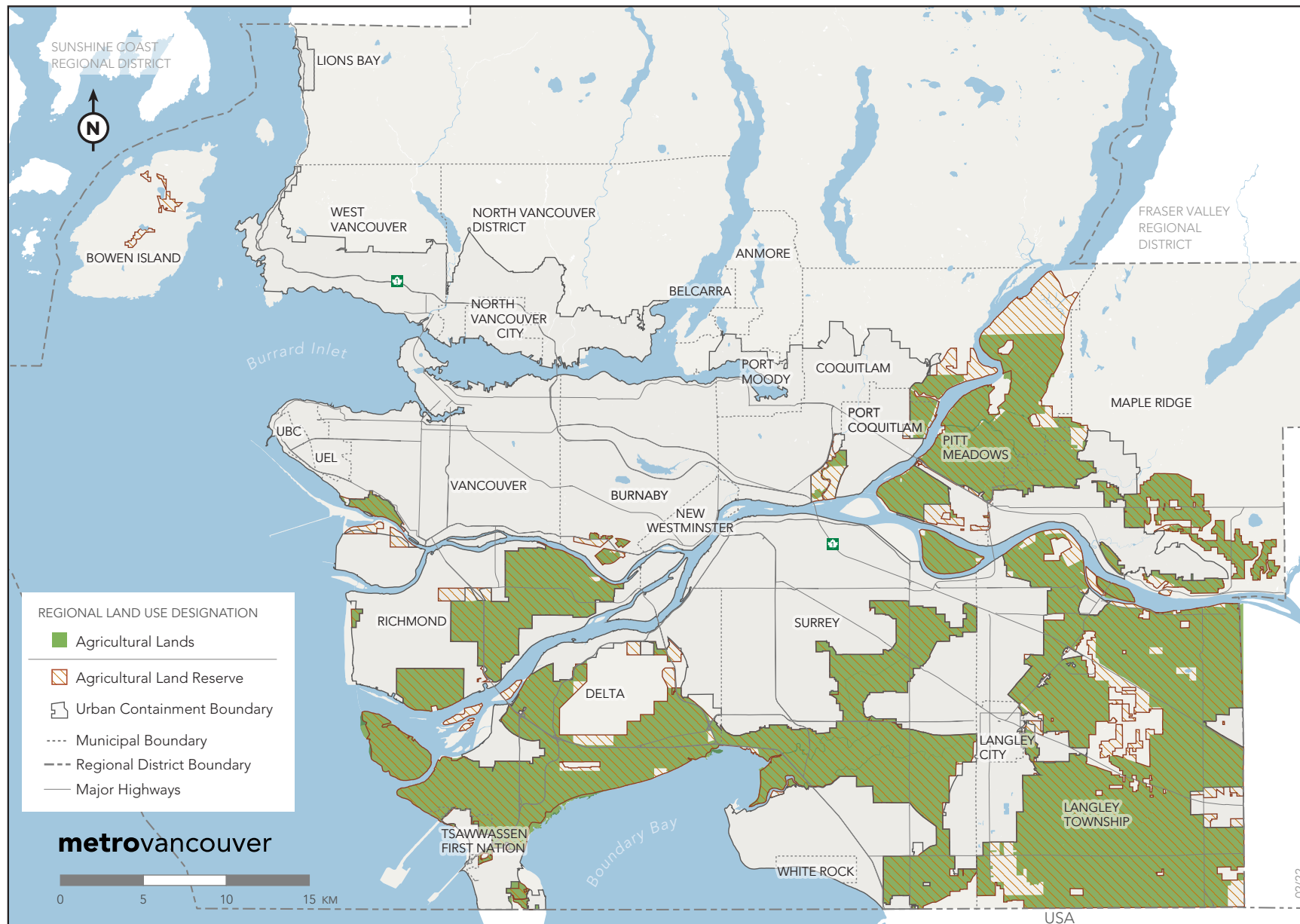


# MAP 7 Industrial and Employment Lands



The depicted highway network, rail lines, and port/airport transportation facilities are shown for reference only.

## MAP 8 Agricultural Lands

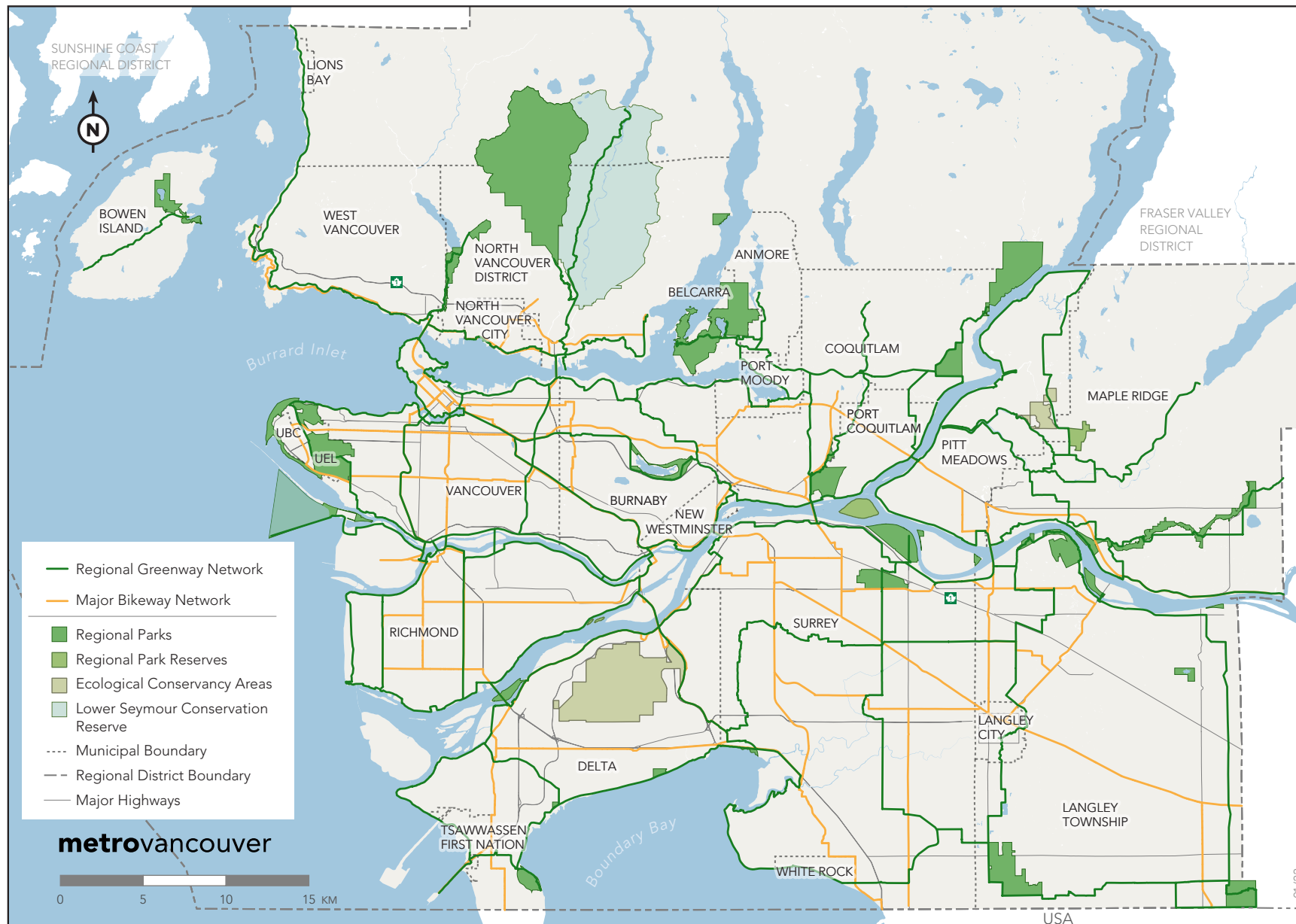


# MAP 9 Conservation and Recreation Lands



The Natural Resource Areas Overlay was collated by Metro Vancouver from several data sources including: Active managed forest tenure licenses, relevant OCPs, GVS&DD, and GVWD.

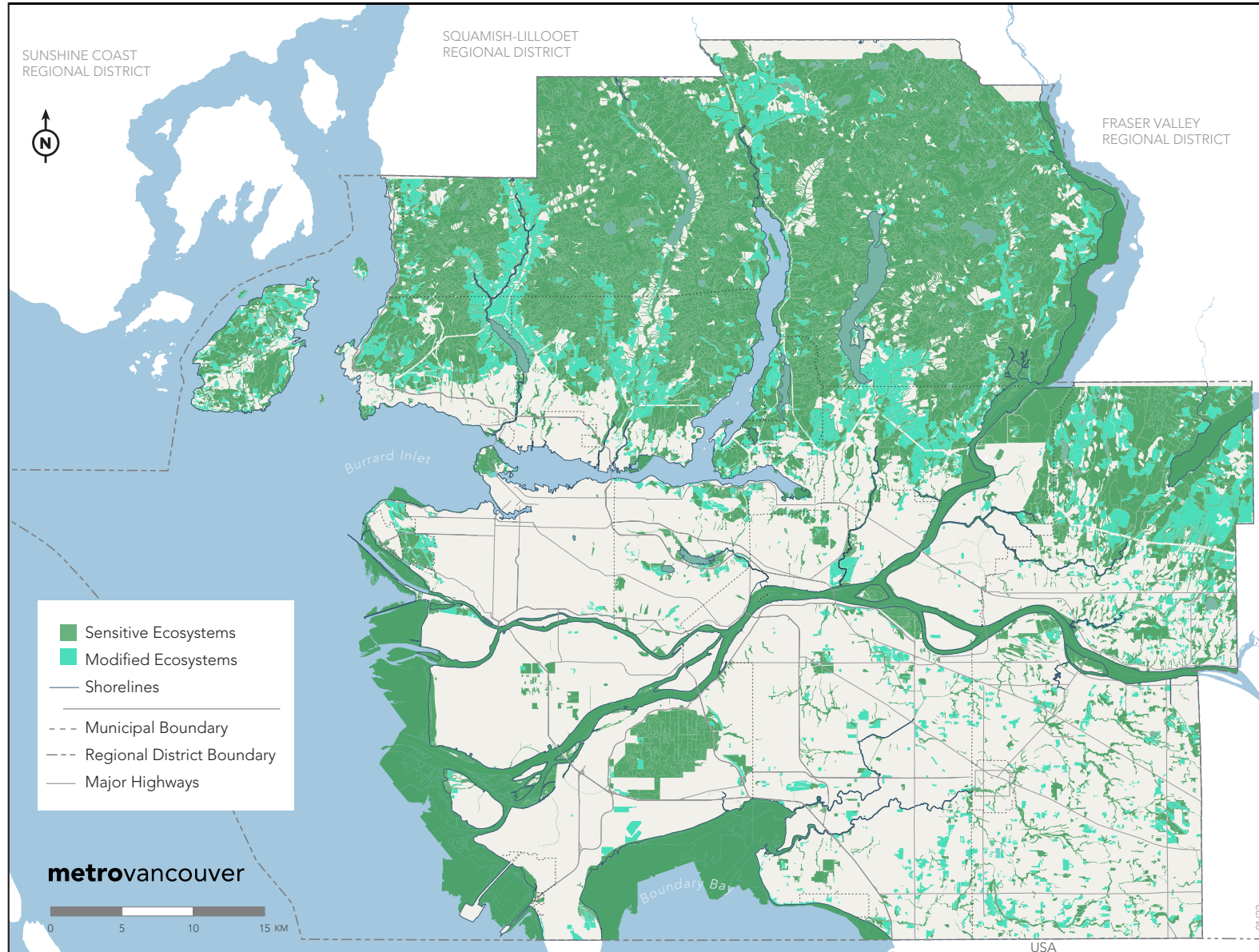
## MAP 10 Regional Greenway Network and Major Bikeway Network



The Regional Greenway Network and Major Bikeway Network (MBN) are concepts illustrating existing and planned active transportation corridors of regional significance. The MBN is being developed through TransLink's Transport 2050 process and will be updated following the identification of a preferred MBN concept.

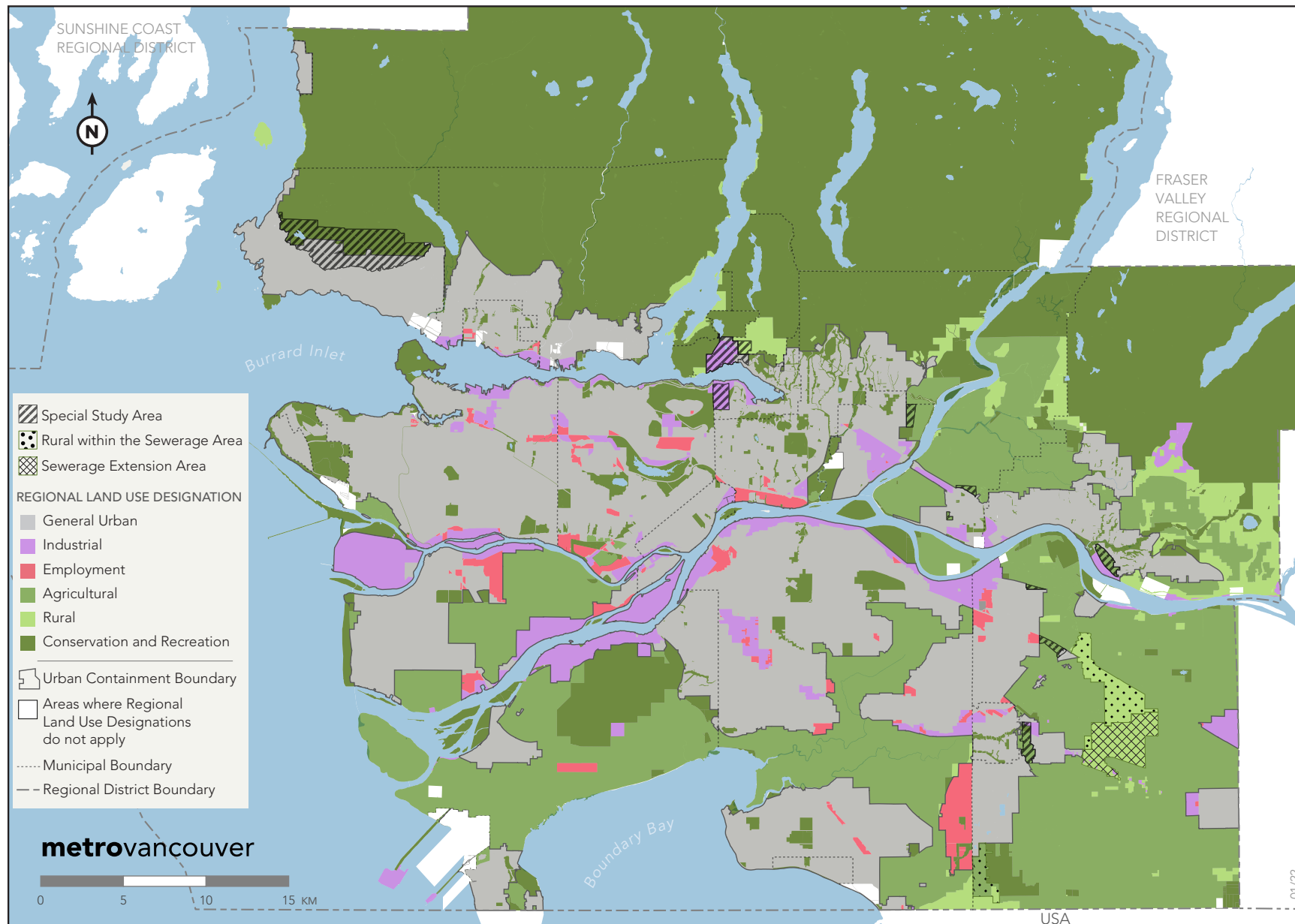


# MAP 11 Sensitive Ecosystem Inventory



Map for reference only and does not reflect Regional Land Use Designations. An online SEI Tool is available at [gis.metrovancouver.org/mvmaps/SEI](https://gis.metrovancouver.org/mvmaps/SEI) and downloadable from [metrovancouver.org/data](https://metrovancouver.org/data). The SEI data set is from 2014. Local ecological datasets may be more current and detailed.

## MAP 12 Special Study Areas and Sewerage Extension Areas



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**COMMITTEE INFORMATION ITEMS AND DELEGATION SUMMARIES**

Metro Vancouver Regional District

Board Meeting Date – Friday, March 25, 2022

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This information item, listing recent information received by committee, is provided for the MVRD Board's information. Please access a complete PDF package [here](#).

**Regional Planning Committee – March 4, 2022***Delegation Summaries:*

- 3.1 Alex Boston, Executive Director, Renewable Cities, Centre for Dialogue, Simon Fraser University

*Information Items:*

- 5.2 Metro 2050 Phase 2 Engagement Including Activities in Q4 2021

51095429