METRO VANCOUVER REGIONAL DISTRICT (MVRD)
BOARD OF DIRECTORS

BOARD MEETING
Friday, September 27, 2024
9:00 am
28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia
Webstream available at https://metrovancouver.org

Membership and Votes

A G E N D A[1]

A. ADOPTION OF THE AGENDA

1. Friday, September 27, 2024 Meeting Agenda
That the MVRD Board adopt the agenda for its meeting scheduled for September 27, 2024 as circulated.

B. ADOPTION OF THE MINUTES

1. July 26, 2024 Meeting Minutes *pg. 7*
That the MVRD Board adopt the minutes for its meeting held July 26, 2024 as circulated.

2. July 26, 2024 Special Meeting Minutes *pg. 18*
That the MVRD Board adopt the special minutes for its meeting held July 26, 2024 as circulated.

C. DELEGATIONS

D. INVITED PRESENTATIONS

E. CONSENT AGENDA
Note: Directors may adopt in one motion all recommendations appearing on the Consent Agenda or, prior to the vote, request that 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] *Note: Recommendation is shown under each item, where applicable. All Directors vote unless otherwise noted.*

1. REGIONAL PARKS COMMITTEE REPORTS

1.1 Metro Vancouver 10-Year Salmon Enhancement Action Plan Update *pg. 20*

That the MVRD Board receive for information the report dated July 30, 2024, titled "Metro Vancouver 10-Year Salmon Enhancement Action Plan Update."

1.2 Regional Greenway Network Status Update *pg. 25*

That the MVRD Board receive for information the report dated July 23, 2024, titled "Regional Greenway Network Status Update."

1.3 Natural Asset Management in Regional Parks – Project Update *pg. 33*

That the MVRD Board receive for information the report dated July 23, 2024, titled "Natural Asset Management in Regional Parks – Project Update."

1.4 Manager's Report – Regional Parks *pg. 50*

That the MVRD Board receive for information the report dated August 26, 2024, titled "Manager's Report – Regional Parks."

2. CLIMATE ACTION COMMITTEE REPORTS

2.1 Best Practices in Energy and Emissions Benchmarking and Reporting for Existing Large Buildings *pg. 57*

That the MVRD Board receive for information the report dated April 16, 2024, titled "Best Practices in Energy and Emissions Benchmarking and Reporting for Existing Large Buildings".

2.2 BC Hydro's "Distribution Extension Policy" and "2024 Rate Design" Applications to the BC Utilities Commission *pg. 67*

That the MVRD Board direct staff to:

a) participate as an intervener in the BC Utilities Commission proceedings for BC Hydro's applications for "Distribution Extension Policy" and "2024 Rate Design";

b) analyze and provide input to the proceedings to align with Board-adopted policies and targets including for regional air quality, clean and renewable energy and GHG reduction, including submitting comments, evidence, and a final argument; and

c) report back to the Climate Action Committee and Board on outcomes of the proceedings.

2.3 Appointment of Enforcement Officers *pg. 77*

That the MVRD Board:

a) pursuant to the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008* and the *Environmental Management Act:*
   i. rescind the appointment of Metro Vancouver employee Dave Ferguson as an officer; and
   ii. appoint Metro Vancouver employees Loretta Tang and Sean Hronsky as officers; and

b) pursuant to section 28 of the *Offence Act* for the purpose of serving summons for alleged violations under the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008:*
   i. rescind the appointment of Metro Vancouver employee Dave Ferguson; and
   ii. appoint Metro Vancouver employees Loretta Tang and Sean Hronsky.

3. REGIONAL PLANNING COMMITTEE REPORTS

3.1 Metro 2050 Climate Policy Enhancement Study – Revised Recommendations *pg. **79***

That the MVRD Board direct staff to prepare a bylaw to amend *Metro 2050* for consideration based on the revised recommendations as described in Tables 1 and 2 of the report dated August 9, 2024, titled "Metro 2050 Climate Policy Enhancement Study – Revised Recommendations" to:

a) support the protection and restoration of trees and other ecosystems on lands with a non-urban regional land use designations and lands outside the Urban Containment Boundary; and

b) encourage environmental and climate change related analysis as part of appropriate *Metro 2050* amendment applications.

3.2 Metro 2050 Regional Context Statement – Village of Belcarra *pg. 84*

That MVRD Board accept the Village of Belcarra Regional Context Statement as submitted to Metro Vancouver on June 12, 2024.

3.3 Invasive Species Best Management Practices – Bamboo, Cherry Laurel, and Common Periwinkle *pg. 127*

That the MVRD Board receive for information the report dated August 13, 2024, titled "Invasive Species Best Management Practices - Bamboo, Cherry Laurel, and Common Periwinkle".

4. MAYORS COMMITTEE REPORTS

4.1 Invited Presentation from Larry Thomas, President, Greater Vancouver Fire Chiefs Association *pg. 217*

That the MVRD Board approve a letter to be sent to the Provincial Government requesting: 1) that implementation of changes to the BC Building Code to allow single egress stair buildings be paused until safety considerations are reviewed as requested by the Greater Vancouver Fire Chiefs, and 2) that the Province commit to utilizing standard code change processes and incorporating the safeguards provided by the consultation.

5. INVEST VANCOUVER BOARD MANAGMENT REPORTS

5.1 Global Promotion at Web Summit Vancouver 2025 *pg. 226*

That the MVRD Board endorse Metro Vancouver's participation, through Invest Vancouver, in securing a regional presence for the Metro Vancouver region at Web Summit Vancouver 2025.

5.2 Impact of Foreign Direct Investment in British Columbia *pg. 231*

That the MVRD Board:

a) receive for information the report dated August 19, 2024, titled "Impact of Foreign Direct Investment in British Columbia" as findings to inform strategic investment attraction efforts to facilitate the creation of high-quality jobs in the Metro Vancouver region;

b) direct staff to forward the *Impact of Foreign Direct Investment in British Columbia* research report to member jurisdictions for information with an offer for Council presentations upon request; and

c) direct staff to forward a copy of the *Impact of Foreign Direct Investment in British Columbia* research report to the Province of BC's Ministry of Jobs, Economic Development and Innovation and to the federal Ministry of Innovation, Science and Economic Development, Global Affairs Canada, and PacifiCan.

5.3 Investment Attraction Update – Q2 2024 *pg. 270*

That the MVRD Board receive for information the report dated August 19, 2024, titled "Investment Attraction Update – Q2 2024".

5.4 Economic Reconciliation Update *pg.275*

That the MVRD Board receive for information the report dated August 14, 2024, titled "Economic Reconciliation Update".

6. CHIEF ADMINISTRATIVE OFFICER REPORTS

6.1 2025 Schedule of Board Meetings

pg. 279

That the MVRD Board receive for information the schedule of board meetings, as follows:

a) Regular Meeting Dates
- Friday, January 31, 2025
- Friday, February 28, 2025
- Friday, March 28, 2025
- Friday, April 25, 2025
- Friday, May 23, 2025
- Friday, June 27, 2025
- Friday, July 25, 2025
- Friday, October 3, 2025
- Friday, October 31, 2025
- Friday, November 28, 2025
- Friday, December 12, 2025

b) Special Meeting Dates
- Wednesday, April 9, 2025
- Wednesday, October 22, 2025

c) Time
All regular meetings are scheduled for 9:00 am, unless otherwise specified on the meeting notice.

d) Place
All regular meetings will take place in the Metro Vancouver Boardroom on the 28th Floor, 4515 Central Boulevard, Burnaby, BC and may include the simultaneous use of electronic facilities.

F. ITEMS REMOVED FROM THE CONSENT AGENDA

G. REPORTS NOT INCLUDED IN CONSENT AGENDA

1. REGIONAL PLANNING COMMITTEE REPORTS

1.1 Metro 2050 Type 3 Amendment – Regional Affordable Rental Housing Target Implementation Guideline

pg. 282

That the MVRD Board:

a) initiate the *Metro 2050* amendment process for the *Metro 2050* Type 3 amendment to align *Metro 2050* and the Regional Affordable Rental Housing Target Implementation Guideline;

b) give first, second, and third readings to "Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1398, 2024"; and

c) direct staff to notify affected local governments as per section 6.4.2 of *Metro 2050*.

H. MOTIONS FOR WHICH NOTICE HAS BEEN GIVEN

I. OTHER BUSINESS

1. MVRD Board Committee Information Items and Delegation Summaries *pg. 292*

J. 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 meeting scheduled for September 27, 2024 pursuant to section 226 (1) (a) of the *Local Government Act* and the *Community Charter* provisions as follows:

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

(e) the acquisition, disposition or expropriation of land or improvements, if the council considers that disclosure could reasonably be expected to harm the interests of the municipality; and

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

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

K. ADJOURNMENT

That the MVRD Board adjourn its meeting of September 27, 2024.

METRO VANCOUVER REGIONAL DISTRICT
BOARD OF DIRECTORS

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Board of Directors held at 9:00 am on Friday, July 26, 2024, in the 28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:

Burnaby, Chair, Director Mike Hurley
Anmore, Vice Chair, Director John McEwen
Belcarra, Alternate Director Carolina Clark for Director Jamie Ross
Bowen Island, Director Andrew Leonard
Burnaby, Director Pietro Calendino
Burnaby, Director Sav Dhaliwal
Coquitlam, Director Craig Hodge
Coquitlam, Director Teri Towner
Delta, Alternate Director Jennifer Johal* for Director Rod Binder
Delta, Director Dylan Kruger
Electoral Area A, Director Jen McCutcheon
Langley City, Director Paul Albrecht*
Langley Township, Alternate Director Tim Baillie for Director Steve Ferguson
Langley Township, Director Eric Woodward
Maple Ridge, Director Dan Ruimy
New Westminster, Director Patrick Johnstone
North Vancouver City, Director Linda Buchanan
North Vancouver District, Director Lisa Muri
Pitt Meadows, Director Nicole MacDonald
Port Coquitlam, Director Brad West*
Port Moody, Director Meghan Lahti
Richmond, Director Chak Au
Richmond, Director Malcolm Brodie
Richmond, Director Bill McNulty
Surrey, Director Harry Bains
Surrey, Director Doug Elford
Surrey, Director Gordon Hepner* (arrived at 9:25 am)
Surrey, Director Pardeep Kooner
Surrey, Director Brenda Locke
Surrey, Director Rob Stutt
Vancouver, Director Rebecca Bligh (arrived at 9:12 am)
Vancouver, Director Adriane Carr
Vancouver, Director Lisa Dominato
Vancouver, Director Sarah Kirby-Yung (arrived at 9:11 am)
Vancouver, Director Mike Klassen
Vancouver, Alternate Director Peter Meiszner for Director Ken Sim
Vancouver, Director Lenny Zhou
West Vancouver, Director Mark Sager
White Rock, Director Megan Knight*

* denotes electronic meeting participation as authorized by the *Procedure Bylaw*

MEMBERS ABSENT:

Lions Bay, Director Ken Berry
scəwaθən məsteyəxʷ (Tsawwassen First Nation), Director Laura Cassidy

STAFF PRESENT:

Jerry W. Dobrovolny, Chief Administrative Officer
Dorothy Shermer, Corporate Officer
Rapinder Khaira, Legislative Services Coordinator, Board and Information Services

A. ADOPTION OF THE AGENDA

1. July 26, 2024 Meeting Agenda

It was MOVED and SECONDED
That the MVRD Board amend the agenda for its meeting scheduled for July 26, 2024 by adding the following delegations:

- C1 – Shawn Low, Director of Development Planning, City of Surrey; and
- C2 – Roderick Louis.

CARRIED

It was MOVED and SECONDED
That the MVRD Board adopt the agenda for its meeting scheduled for July 26, 2024 as amended.

CARRIED

B. ADOPTION OF THE MINUTES

1. June 28, 2024 Meeting Minutes

It was MOVED and SECONDED
That the MVRD Board adopt the minutes for its meeting held June 28, 2024 as circulated.

CARRIED

2. June 28, 2024 Special Meeting Minutes

It was MOVED and SECONDED
That the MVRD Board adopt the special minutes for its meeting held June 28, 2024 as circulated.

CARRIED

C. DELEGATIONS

1. Shawn Low, Director of Development Planning, City of Surrey

Shawn Low, Director, Development Planning, City of Surrey, provided a presentation titled "Metro Vancouver 2050 Amendment", relating to item G1.2. He provided an overview of the Regional Growth Strategy amendment application submitted by the City of Surrey.

2. Roderick Louis

Roderick Louis provided a presentation titled "Metro Vancouver Regional Fund Expenditures Policies and Application Guide", relating to item E2.1. He requested that the report be referred to staff, and that the MVRD Board send a letter to TransLink requiring a detailed public report by TransLink on its debt and income, to be submitted with its Metro Vancouver Regional Fund applications.

9:11 am Director Kirby-Yung arrived at the meeting.
9:12 am Director Bligh arrived at the meeting.

D. INVITED PRESENTATIONS

No items presented.

E. CONSENT AGENDA

At the request of Directors, the following items were removed from the Consent Agenda for consideration under Section F:

1.4 Metro Vancouver Population Projections Update
3.2 BC Flood Strategy

It was MOVED and SECONDED

That the MVRD Board adopt the recommendations presented in the following items as presented in the July 26, 2024 MVRD Board Consent Agenda:

1.1 Request for Sanitary Service Connection at 1525 200 Street – Township of Langley
1.2 Metro 2050 Implementation Guideline – Regional Affordable Rental Housing Target
1.3 What Works: Local Government Measures for Sustaining and Expanding the Supply of Purpose-Built Rental Housing
2.1 Metro Vancouver Regional Fund Expenditures Policy and Application Guide
2.2 Award RFP 24-188 for External Audit Services and Appointment of External Auditors
3.1 Regional Flood Resiliency Initiatives Scan and Prioritization Matrix – Scope of Work
4.1 Contribution Agreement Request – Pacific Spirit Park Society
4.2 Contribution Agreement Request – Kanaka Education and Environmental Partnership Society
4.3 Manager's Report – Regional Parks

CARRIED

The items and recommendations referred to above are as follows:

1.1 Request for Sanitary Service Connection at 1525 200 Street – Township of Langley

Report dated June 3, 2024, from Victor Cheung, Regional Planner, Regional Planning and Housing Services, seeking MVRD Board concurrence that regional sewer service for the property located at 1525 200 Street is generally consistent with *Metro 2050.*

Recommendation

That the MVRD Board:

a) resolve that sewer service for the property at 1525 200 Street, Township of Langley is generally consistent with the provisions of *Metro 2050*; and
b) forward the requested Fraser Sewerage Area amendment application for property at 1525 200 Street in the Township of Langley to the GVS&DD Board for consideration.

Adopted on Consent

1.2 Metro 2050 Implementation Guideline – Regional Affordable Rental Housing Target

Report dated June 24, 2024, from Diana Jeliazkova, Regional Planner, Regional Planning and Housing Services, providing the MVRD Board with the opportunity to endorse the *Regional Affordable Rental Housing Target Implementation Guideline*.

Recommendation

That the MVRD Board endorse the *Metro 2050* Implementation Guideline – Regional Affordable Rental Housing Target as presented in the report dated June 3, 2024, titled "*Metro 2050* Implementation Guideline – Regional Affordable Rental Housing Target".

Adopted on Consent

1.3 What Works: Local Government Measures for Sustaining and Expanding the Supply of Purpose-Built Rental Housing

Report dated June 3, 2024, from Jessica Hayes, Program Manager, Housing Policy and Planning, Regional Planning and Housing Services, providing the MVRD Board with an overview of the new Metro Vancouver *What Works: Local Government Measures for Sustaining and Expanding the Supply of Purpose-Built Rental Housing* guide.

Recommendation

That the MVRD Board:

a) receive for information the report dated June 3, 2024, titled "What Works: Local Government Measures for Sustaining and Expanding the Supply of Purpose-Built Rental Housing"; and
b) forward "What Works: Local Government Measures for Sustaining and Expanding the Supply of Purpose-Built Rental Housing" and its attachment to member jurisdictions for information with an offer for staff or Council presentations upon request.

Adopted on Consent

2.1 Metro Vancouver Regional Fund Expenditures Policy and Application Guide

Report dated June 19, 2024, from Mark Seinen, Senior Planner, Regional Planning and Housing Services, providing the MVRD Board with the updated *Metro Vancouver Regional Fund Expenditures Policy and Application Guide* for consideration of approval.

Recommendation

That the MVRD Board:

a) adopt the *Metro Vancouver Regional Fund Expenditures Policy* (No. FN-035) and *Metro Vancouver Regional Fund Application Guide* as presented in the report dated June 19, 2024, titled "Metro Vancouver Regional Fund Expenditures Policy and Application Guide"; and
b) rescind the *Federal Gas Tax Fund Expenditures Policy* (No. FN-012).

Adopted on Consent

2.2 Award RFP 24-188 for External Audit Services and Appointment of External Auditors

Report dated July 2, 2024, from Harji Varn, Chief Financial Officer/General Manager, Financial Services, seeking MVRD Board approval for the award of RFP 24-188 for External Audit Services and the appointment of external auditors.

Recommendation

That the MVRD Board:

a) approve the award of RFP 24-188 for External Audit Services, in the amount of up to $1,188,800 (exclusive of taxes) to KPMG LLP, for a term of five (5) years, subject to final review by the Chief Administrative Officer;
b) appoint KPMG LLP, as external auditors for the fiscal years 2024 to 2028; and
c) authorize the General Manager, Procurement and Real Estate to execute the required documentation once the General Manager, Procurement and Real Estate is satisfied that the award should proceed.

Adopted on Consent

3.1 Regional Flood Resiliency Initiatives Scan and Prioritization Matrix – Scope of Work

Report dated June 18, 2024 from Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services, Regional Planning and Housing Services, providing the MVRD Board with the scope of work for two regional flood resiliency-related projects: a scan of initiatives in the region and the development of a prioritization matrix for information.

Recommendation

That the MVRD Board receive for information the Regional Flood Resiliency Initiatives Scan and Prioritization Matrix Scope of Work, as presented in the report dated June 18, 2024, titled "Regional Flood Resiliency Initiatives Scan and Prioritization Matrix – Scope of Work".

Adopted on Consent

4.1 Contribution Agreement Request – Pacific Spirit Park Society

Report dated June 24, 2024, from David Leavers, Division Manager, Visitor and Operations Services, Regional Parks, providing the MVRD Board with an opportunity to consider entering into a new three-year contribution agreement with the Pacific Park Society.

Recommendation

That the MVRD Board approve, substantially in the form attached, the contribution agreement between the Metro Vancouver Regional District and the Pacific Spirit Park Society for a three-year term in the aggregate amount of $45,000 ($15,000 in 2025, $15,000 in 2026 and $15,000 in 2027) commencing January 1, 2025 and ending December 31, 2027.

Adopted on Consent

4.2 Contribution Agreement Request – Kanaka Education and Environmental Partnership Society

Report dated June 24, 2024, from David Leavers, Division Manager, Visitor and Operations Services, Regional Parks, providing the MVRD Board with an opportunity to consider entering into a new three-year contribution agreement with Kanaka Education and Environmental Partnership Society.

Recommendation

That the MVRD Board approve, substantially in the form attached, the contribution agreement between the Metro Vancouver Regional District and the Kanaka Education and Environmental Partnership Society for a three-year term in the aggregate amount of $45,000 ($15,000 in 2025, $15,000 in 2026 and $15,000 in 2027) commencing January 1, 2025 and ending December 31, 2027.

Adopted on Consent

4.3 Manager's Report – Regional Parks

Report dated July 9, 2024, from Mike Redpath, Director, Regional Parks, providing the MVRD Board with an update on the 2024 Wildfire season, Alcohol Consumption in Regional Parks Pilot Program, Regional Parks Land Acquisition – West Creek Wetlands, and other Regional Parks Updates.

Recommendation

That the MVRD Board receive for information the report dated July 9, 2024, titled "Manager's Report – Regional Parks."

Adopted on Consent

F. ITEMS REMOVED FROM THE CONSENT AGENDA

Items removed from the Consent Agenda were considered in numerical order.

1.4 Metro Vancouver Population Projections Update

Report dated June 21, 2024, from Sinisa Vukicevic, Program Manager, Regional Planning Analytics, Regional Planning and Housing Services, providing the MVRD Board with an update on Metro Vancouver's growth projections.

It was MOVED and SECONDED

That the MVRD Board receive for information the report dated June 21, 2024, titled "Metro Vancouver Population Projections Update".

CARRIED

(Directors Baillie, Bains, Elford, Kooner, Locke, Stutt, and Woodward voted in the negative)

3.2 BC Flood Strategy

Report dated July 12, 2024, from the Flood Resiliency Committee, and report dated June 28, 2024, from Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services, Regional Planning and Housing Services, providing the MVRD Board with an opportunity to consider writing a letter to the BC Government related to the implementation of the BC Flood Strategy.

9:25 am Director Hepner arrived at the meeting.

It was MOVED and SECONDED

That the MVRD Board write letters to the Honourable Nathan Cullen, Minister of Water, Land and Resource Stewardship, and the Honourable Bowinn Ma, Minister of Emergency Management and Climate Readiness, requesting that the implementation of the BC Flood Strategy be prioritized, expedited, and adequately resourced as it relates to the Metro Vancouver region.

CARRIED

G. REPORTS NOT INCLUDED IN CONSENT AGENDA

1.1 Metro 2050 Type 2 Proposed Amendment – City of Surrey (Hazelmere)

Report dated June 24, 2024, from Marcin Pachcinski, Division Manager of Electoral Area and Implementation Services, and Mikayla Tinsley, Senior Policy and Planning Analyst, Regional Planning and Housing Services, providing the MVRD Board with the opportunity to consider the City of Surrey's request to amend Metro *2050* through a Type 2 amendment.

It was MOVED and SECONDED

That the MVRD Board refer the application back to the City of Surrey for additional information regarding:

a) implications of new provincial housing legislation on the allowable density of the subject site;
b) updated information on hydrology that takes into account new developments that have occurred in the area since 2018;
c) updated information on engagement with Semiahmoo First Nation and the public;
d) comments from the Agricultural Land Commission regarding the City's intended ALR inclusion, and non-farm use and subdivision of ALR land; and
e) the City's rationale for the General Urban (versus Agricultural) regional land use designation for the 1.6 hectare portion of the site intended for ALC inclusion.

CARRIED

1.2 Metro 2050 Type 3 Proposed Amendment – City of Surrey (7880 128 St)

Report dated June 3, 2024, from Marcin Pachcinski, Division Manager of Electoral Area and Implementation Services, and Mikayla Tinsley, Senior Policy and Planning Analyst, Regional Planning and Housing Services, providing the MVRD Board with an opportunity to consider the City of Surrey's request for a Metro 2050 Type 3 amendment, and first through third readings of *Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1392, 2024*.

It was MOVED and SECONDED

That the MVRD Board:

a) initiate the *Metro 2050* amendment process for the City of Surrey's requested regional land use designation amendment from Industrial to Employment for the lands located at 7880-128 Street;
b) give first, second, and third readings to *Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1392, 2024*; and
c) direct staff to notify affected local governments as per section 6.4.2 of *Metro 2050*.

CARRIED

2.1 MFA Fall 2024 Borrowing for the Township of Langley – MVRD Security Issuing Bylaw No. 1394, 2024

Report dated June 28, 2024, from Linda Sabatini, Director, Financial Operations, Financial Services, providing the MVRD Board with *Metro Vancouver Regional District Security Issuing Bylaw No. 1394, 2024* for three readings and adoption.

It was MOVED and SECONDED

That the MVRD Board:

a) give consent to the request for financing from the Township of Langley in the amount of $38,380,000 pursuant to Sections 182(1)(b) and 182(2)(a) of the *Community Charter*; and
b) give first, second and third reading to *Metro Vancouver Regional District Security Issuing Bylaw No. 1394, 2024*.

CARRIED

It was MOVED and SECONDED

That the MVRD Board adopt *Metro Vancouver Regional District Security Issuing Bylaw No. 1394, 2024* and forward it to the Inspector of Municipalities for Certificate of Approval.

CARRIED

2.2 MFA Fall 2024 Borrowing for the District of North Vancouver – MVRD Security Issuing Bylaw No. 1395, 2024

Report dated June 28, 2024, from Linda Sabatini, Director, Financial Operations, Financial Services, providing the MVRD Board with *Metro Vancouver Regional District Security Issuing Bylaw No. 1395, 2024* for three readings and adoption.

It was MOVED and SECONDED

That the MVRD Board:

a) give consent to the request for financing from the District of North Vancouver in the amount of $20,000,000 pursuant to Sections 182(1)(b) and 182(2)(a) of the *Community Charter*; and

b) give first, second and third reading to *Metro Vancouver Regional District Security Issuing Bylaw No. 1395, 2024*.

CARRIED

It was MOVED and SECONDED

That the MVRD Board adopt *Metro Vancouver Regional District Security Issuing Bylaw No. 1395, 2024* and forward it to the Inspector of Municipalities for Certificate of Approval.

CARRIED

2.3 MFA Fall 2024 Borrowing for the City of Langley – MVRD Security Issuing Bylaw No. 1391, 2024

Report dated June 28, 2024, from Linda Sabatini, Director, Financial Operations, Financial Services, providing the MVRD Board with *Metro Vancouver Regional District Security Issuing Bylaw No. 1391, 2024* for three readings and adoption.

It was MOVED and SECONDED

That the MVRD Board:

a) give consent to the request for financing from the City of Langley in the amount of $15,000,000 pursuant to Sections 182(1)(b) and 182(2)(a) of the *Community Charter*; and

b) give first, second and third reading to *Metro Vancouver Regional District Security Issuing Bylaw No. 1391, 2024*.

CARRIED

It was MOVED and SECONDED

That the MVRD Board adopt *Metro Vancouver Regional District Security Issuing Bylaw No. 1391, 2024* and forward it to the Inspector of Municipalities for Certificate of Approval.

CARRIED

3.1 Results of Alternative Approval Process for Metro Vancouver Regional District Loan Authorization Bylaw No. 1381, 2024

Report dated July 15, 2024, from Jacque Killawee, Division Manager, Board Secretariat, Deputy Corporate Officer, Board and Information Services, providing the MVRD Board with an opportunity to consider adoption of the *Metro Vancouver Regional District Loan Authorization Bylaw No. 1381, 2024*.

It was MOVED and SECONDED

That the MVRD Board adopt *Metro Vancouver Regional District Loan Authorization Bylaw No. 1381, 2024*.

CARRIED

H. MOTIONS FOR WHICH NOTICE HAS BEEN GIVEN

No items presented.

I. OTHER BUSINESS

1. MVRD Board Committee Information Items and Delegation Summaries

J. RESOLUTION TO CLOSE MEETING

It was MOVED and SECONDED

That the MVRD Board close its meeting scheduled for July 26, 2024 pursuant to section 226 (1) (a) of the *Local Government Act* and the *Community Charter* provisions as follows:

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

(b) personal information about an identifiable individual who is being considered for a municipal award or honour, or who has offered to provide a gift to the municipality on condition of anonymity;

(e) the acquisition, disposition or expropriation of land or improvements, if the council considers that disclosure could reasonably be expected to harm the interests of the municipality; and

(j) information that is prohibited, or information that if it were presented in a document would be prohibited, from disclosure under section 21 of the *Freedom of Information and Protection of Privacy Act*.

CARRIED

K. ADJOURNMENT

It was MOVED and SECONDED
That the MVRD Board adjourn its meeting of July 26, 2024.

CARRIED
(Time: 9:42 am)

CERTIFIED CORRECT

Dorothy Shermer, Corporate Officer

Mike Hurley, Chair

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METRO VANCOUVER REGIONAL DISTRICT
BOARD OF DIRECTORS

Minutes of the Special Meeting of the Metro Vancouver Regional District (MVRD) Board of Directors held at 12:45 pm on Friday, July 26, 2024, in the 28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:

Burnaby, Chair, Director Mike Hurley
Anmore, Vice Chair, Director John McEwen
Belcarra, Alternate Director Carolina Clark for Director Jamie Ross
Bowen Island, Director Andrew Leonard
Burnaby, Director Pietro Calendino
Burnaby, Director Sav Dhaliwal
Coquitlam, Director Craig Hodge
Coquitlam, Director Teri Towner
Delta, Director Dylan Kruger
Electoral Area A, Director Jen McCutcheon
Langley City, Director Paul Albrecht*
Langley Township, Alternate Director Tim Baillie for Director Steve Ferguson
Langley Township, Director Eric Woodward
Maple Ridge, Director Dan Ruimy
New Westminster, Director Patrick Johnstone
North Vancouver City, Director Linda Buchanan
North Vancouver District, Director Lisa Muri
Pitt Meadows, Director Nicole MacDonald
Port Coquitlam, Director Brad West*
Port Moody, Director Meghan Lahti
Richmond, Director Chak Au
Richmond, Director Malcolm Brodie
Richmond, Director Bill McNulty
Surrey, Director Harry Bains
Surrey, Director Doug Elford
Surrey, Director Gordon Hepner*
Surrey, Director Pardeep Kooner
Surrey, Director Brenda Locke
Surrey, Director Rob Stutt
Vancouver, Director Rebecca Bligh
Vancouver, Director Adriane Carr
Vancouver, Director Lisa Dominato
Vancouver, Director Sarah Kirby-Yung
Vancouver, Director Mike Klassen
Vancouver, Alternate Director Peter Meiszner for Director Ken Sim
Vancouver, Director Lenny Zhou
West Vancouver, Director Mark Sager
White Rock, Director Megan Knight*

* denotes electronic meeting participation as authorized by the *Procedure Bylaw*

MEMBERS ABSENT:

Delta, Director Rod Binder
Lions Bay, Director Ken Berry
scəwaθən məsteyəxʷ (Tsawwassen First Nation), Director Laura Cassidy

STAFF PRESENT:

Dorothy Shermer, Corporate Officer

A. ADOPTION OF THE AGENDA

1. July 26, 2024 Special Meeting Agenda

It was MOVED and SECONDED
That the MVRD Board adopt the agenda for its special meeting scheduled for July 26, 2024 as circulated.

CARRIED

B. REPORTS FROM COMMITTEE OR CHIEF ADMINISTRATIVE OFFICER

No items presented.

C. RESOLUTION TO CLOSE MEETING

It was MOVED and SECONDED
That the MVRD Board close its special meeting scheduled for July 26, 2024 pursuant to section 226 (1) (a) of the *Local Government Act* and the *Community Charter* provisions 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:
- (c) labour relations or other employee relations;
- (g) litigation or potential litigation affecting 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

D. ADJOURNMENT

It was MOVED and SECONDED
That the MVRD Board adjourn its special meeting of July 26, 2024.

CARRIED
(Time: 12:46 pm)

CERTIFIED CORRECT

Dorothy Shermer, Corporate Officer

Mike Hurley, Chair

69629290

To: Regional Parks Committee

From: Karin England, Landscape Architect, Design and Development, Regional Parks

Date: July 30, 2024 Meeting Date: September 4, 2024

Subject: **Metro Vancouver 10-Year Salmon Enhancement Action Plan Update**

RECOMMENDATION

That the MVRD Board receive for information the report dated July 30, 2024, titled "Metro Vancouver 10-Year Salmon Enhancement Action Plan Update."

EXECUTIVE SUMMARY

In 2022, Water Services received funding through the Sustainability Innovation Fund (SIF) program to create a Metro Vancouver 10-Year Salmon Enhancement Action Plan (SEAP). SEAP will create a prioritized list of salmon enhancement projects that integrate and coordinate Metro Vancouver's salmon enhancement activities on the land, facilities, and infrastructure that Metro Vancouver owns or manages.

Through engagement with First Nations, internal staff, member jurisdictions, external organizations, and experts involved in salmon enhancement, Metro Vancouver is gathering information about work already underway, mapping existing projects and activities, identifying opportunities for future collaboration, and building relationships. Early feedback from First Nations has been that the project is an example of positive collaboration between the Nations and Metro Vancouver.

Drafting of the Action Plan is now underway, with reviews taking place over the next six months. It will be brought to the MVRD Board for endorsement in spring of 2025.

PURPOSE

The purpose of this report is to provide a summary of the engagement results for the Metro Vancouver 10-Year Salmon Enhancement Action Plan (SEAP) and describe next steps in this corporate initiative.

BACKGROUND

The Metro Vancouver 10-Year Salmon Enhancement Action Plan is a SIF funded project which aims to provide corporate coordination on existing and future Metro Vancouver work on salmon enhancement activities.

ENGAGEMENT FEEDBACK

The SEAP project is led by a cross-department team including representatives from External Relations, Indigenous Relations, Liquid Waste, Regional Parks, Regional Planning, and Water Services. The project is supported by Kerr Wood Leidal consultants. Work to date has been focused on engagement and workshops to collect information and generate ideas about potential actions.

First Nations Early Conversations
Meetings were held with Nations in 2023 to learn how the project scope could incorporate their interests, and how they would like to be engaged. Metro Vancouver staff had conversations with staff from kʷikʷəƛ̓əm (Kwikwetlem First Nation), scəwaθən məsteyəxʷ (Tsawwassen First Nation), qʼʷaːn̓ƛ̕ʼən̓ (Kwantlen First Nation), Sḵwx̱wú7mesh Úxwumixw (Squamish Nation), and seʼmyaʼme (Semiahmoo First Nation). SEAP also received written comments from Sḵwx̱wú7mesh Úxwumixw.

Key messages were that:

- The Nations appreciated being involved early in the planning for the project.
- The Action Plan should continue longer than ten years.
- It is important to include hən̓q̓əmin̓əm̓ language in the Action Plan.
- There is need for a First Nations workshop to precede workshops with others.

First Nations Workshop
As recommended by Nations in early conversations, a First Nations workshop was held on April 5, 2024. The purpose of the workshop was to bring together First Nations to build connections, to share First Nations' priorities and current initiatives, and to identify potential actions and opportunities for collaboration. An elder from scəwaθən məsteyəxʷ provided both opening and closing comments. They highlighted the importance of sharing this project as a positive example of the collaborative work being done between the Nations and Metro Vancouver.

Highlights from what we heard are:

- First Nations, Metro Vancouver, and others can be a collective voice on water quality – "we are all in this together."
- There is a lack of general public understanding of impacts to salmon, climate change, the goals of restoration work, and the need for restoration work.
- Ecological conservation areas need to include restoring relationships between land and people and ensuring access to food and medicines.

Staff Workshops
Two workshops were held on February 29 and April 15, 2024 with Metro Vancouver staff from External Relations, Indigenous Relations, Liquid Waste, Project Delivery, Regional Parks, Regional Planning, and Water Services. The purpose of the first workshop was to collect examples of projects underway that support salmon success, and brainstorm actions that could be taken to improve salmon outcomes. The second workshop focused on the development of criteria that could be used to evaluate potential actions to decide which would be included and how they would be prioritized.

Collaborative Workshop
On May 24, 2024, a collaborative workshop was held with 73 workshop participants from First Nations, member jurisdictions, Federal and Provincial governments (Fisheries and Oceans Canada, Ministry of Water, Lands and Resource Stewardship), environmental non-governmental organizations, academics, and consultants. Participating First Nations included qʼʷaːn̓ƛ̕ʼən̓, kʷikʷəƛ̓əm, xʷməθkʷəy̓əm (Musqueam Indian Band), seʼmyaʼme, Sḵwx̱wú7mesh Úxwumixw, scəwaθən məsteyəxʷ, and səlilwətaɬ (Tsleil-Waututh Nation).

The workshop began with an opening prayer and welcome provided by a member of qʼʷaːn̓ƛʼən̓ and was closed by an elder of sc̓əw̓aθən məsteyəxʷ.

The purpose of the workshop was to identify specific priorities and interests relating to salmon, identify potential focal sites and projects, build relationships between organizations, identify opportunities for collaboration or build on existing collaborations, and understand criteria for evaluating potential actions.

An Indigenous Graphic Recorder attended the workshop and produced a graphic illustration to summarize some of the key themes that emerged (Attachment 1).

Opportunities for actions identified in the workshop centered on the themes of salmon habitat, water quality and quantity, and removal of fish barriers. The evaluation criteria which received the strongest support were achieving measurable salmon outcomes, contributing to First Nations priorities and initiatives, resilience to climate change, and providing multi-species co-benefits, cost relative to impact, and cost to maintain.

Next Steps
Drafting of the Action plan is now underway. Those who were invited to the SEAP workshops will have an opportunity to review and provide comments on the plan at 50% and 90% completion. This review will take place over the next six months with the goal to bring the plan to the MVRD Board in the spring of 2025.

ALTERNATIVES
This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS
This project is funded through the Sustainability Innovation Fund grant at $180,000 and is on budget. There are no additional financial implications.

CONCLUSION
In 2022, Water Services received Sustainability Innovation Fund program funding to create a Metro Vancouver 10-Year Salmon Enhancement Action Plan (SEAP). SEAP will create a prioritized list of salmon enhancement projects that integrate and coordinate Metro Vancouver's salmon enhancement activities on the land, facilities, and infrastructure that Metro Vancouver owns or manages.

In spring 2023, Metro Vancouver staff hosted early conversations with local First Nations to establish interest and gather input on the scope of SEAP. In 2024, this was followed by a workshop with First Nations, two workshops with Metro Vancouver staff, and a collaborative workshop bringing together Metro Vancouver staff, First Nations, member jurisdictions and organizations involved in salmon related initiatives. The information gathered is now being used to draft the Action Plan with reviews scheduled over the next six months. The plan will be brought to the MVRD Board for endorsement in spring 2025.

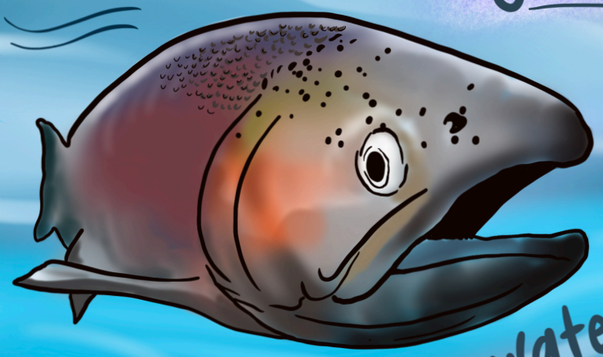
ATTACHMENTS

1. Collaborative Workshop Graphic Notes

68624129

10-YEAR SALMON ENHANCEMENT ACTION PLAN

Welcoming by Kwantlen Nation



Objectives

- Prioritized List of Projects
- Integrate & Coordinate MV's salmon enhancement activities
- Collaboration with First Nations

highlight INDIGENOUS KNOWLEDGE & prioritize it!!

Metro Vancouver manages infrastructure that IMPACTS SALMON

WATER quality

Water quantity

CELEBRATED:

- SEWER projects to mitigate storm water
- FISH HATCHERIES support Financially & operationally
- GUARDIANS program
- GREEN INFRASTRUCTURE project

LAND Stewards

SALMON HABITAT

FISH PASSAGE

WATER PROTECTION from COLLABORATIVE perspective

YOUTH & MENTORING

EDUCATION

PLANNING & POLICY · RELATIONSHIPS

EVALUATION CRITERIA

PRIORITIZE:

Impact, efficiency, Cost, Complexity/Risk, Collab. Co-benefits, Other

OPPORTUNITIES

GOVERNANCE connect Jurisdictions

DAM Maintenance
- Keep or REVERT

→ OPEN ESTUARIES for SALMON

OTHER ENTITIES
- Federal (DFO)
- BC Hydro

FOCUS on WATER Quality
- restoration needs good water

SHARE INFO & DATA across JURISDICTIONS

ADVOCATE for POLICY change

Agriculture Policy & Practices → Protect Riparian Areas

FLOOD Protection infrastructure

UTILIZE Research & DATA & SHARE

CHANGE OUR THINKING around ENVIRONMENT & OUR ACTIONS

SALMON Need HELP

Release SALMON into Lakes / Rivers

Monitor Watersheds

To: Regional Parks Committee

From: Jamie Vala, Division Manager, Planning and Resource Management, Regional Parks

Date: July 23, 2024 Meeting Date: September 4, 2024

Subject: **Regional Greenway Network Status Update**

RECOMMENDATION
That the MVRD Board receive for information the report dated July 23, 2024, titled "Regional Greenway Network Status Update."

EXECUTIVE SUMMARY
This report summarizes Metro Vancouver's work to measure the progress made by regional partners to collaboratively implement the Regional Greenway Network (RGN) since 2020. This project recorded a 13-kilometre increase in total RGN length, the reclassification of 22 km of greenways from operational to planned or identified gap classes, and the addition of approximately 39 km (13 km/year) of new operational regional greenway. If, collectively, the region can maintain this pace, it will be close to achieving its vision for a connected network of recreational greenways by 2050.

PURPOSE
The purpose of this report is to share the results of Metro Vancouver's work to measure the implementation of the Regional Greenway Network by regional partners. This update reflects the progress made in expanding the RGN across the region between 2020 and 2023.

BACKGROUND
In 2020, the MVRD Board adopted the *Regional Greenways 2050* plan, the region's vision for a network of connected recreational paths for cycling and walking. In 2023, Metro Vancouver initiated a project to track progress of RGN implementation.

The Regional Greenways 2050 plan contains a map of the network, with greenway segments color-coded to reflect their operational status. The three operational classes are:

- Green – Operational: Routes that are considered complete, interim, or currently under construction.
- Orange – Planned: Proposed future routes identified in the existing plans of greenway and active transportation service providers.
- Red – Identified Gap: New routes that were proposed through the *Regional Greenways 2050* development process to fill gaps in the network.

2023 REGIONAL GREENWAY NETWORK UPDATE
The RGN update project included the following actions:

- Improving the 2020 data set accuracy

- Gathering 2023 greenway status information from local governments and regional agencies (TransLink, MOTI, and the Vancouver Fraser Port Authority)
- Reviewing operational class attributes
- Creating an updated 2023 inventory and classification statistics

2020 Operational Status Reclassification
During the review, 22 km of greenway segments previously classified as operational in 2020 were reclassified as planned or identified gap in 2023. The impact of this work resulted in the establishment of a new baseline for the system.

2023 Operational Status Update
The review also included updating the route alignment where partner organizations greenway plans had evolved over the last three years. This resulted in an increase in total RGN length by 13 km (from 851 km to 864 km). Additionally, approximately 39 km (13 km/year) of regional greenway segments were completed and are now operational.

2023 Operational Status Sub-classification
Following the update of the alignment and operational class, it was noted that there was variation in the physical characteristics of operationally classified (green) greenway segments in some places. While the *Regional Greenways 2050* plan does not include a specific greenway design standard due to the complex topography, settlement patterns, and evolution of local planning and engineering approaches, regional greenways are generally defined as multi-use paths separated from vehicles. To better understand the proportion of the operationally classified segments that are consistent with the Plan's definition, an operational status validation (i.e., ground-truthing) step was added to the project.

Through this sub-classification process, operational class segments that were consistent with the regional greenway definition were identified as Operational Class 1 (minimum 3 meter-wide multi-use path separated from traffic) and the ones that were not consistent were identified as Operational Class 2 (considered operational by host municipality but are less than 3 m wide and/or not separated from traffic). Where quantifiable data on trail width was not available, the project team used professional judgement to categorize greenway segments as Class 1 or Class 2 based on a desktop review.

The validation process found that over 100 km of operationally classed greenway segments do not meet the spirit of the regional greenway definition contained in the Plan. These segments have now been classified as Operational Class 2.

ALTERNATIVES
This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS
This is an information report. The project described above was completed within the MVRD Board's approved annual budget for the respective years and cost $43,000.

CONCLUSION

This report summarizes the results of Metro Vancouver's work to measure the collaborative implementation of the Regional Greenway Network by regional partners. The project found that 39 km (13 km/year) of regional greenways were implemented across the region between 2020 and 2023. If the region can maintain this pace, it will be close to achieving its vision for a connected network of recreational greenways by 2050.

Staff will share the results of this work with regional partners as part of Metro Vancouver's ongoing support of the realization of the region's shared vision of a connected network of regional recreational trails.

ATTACHMENTS

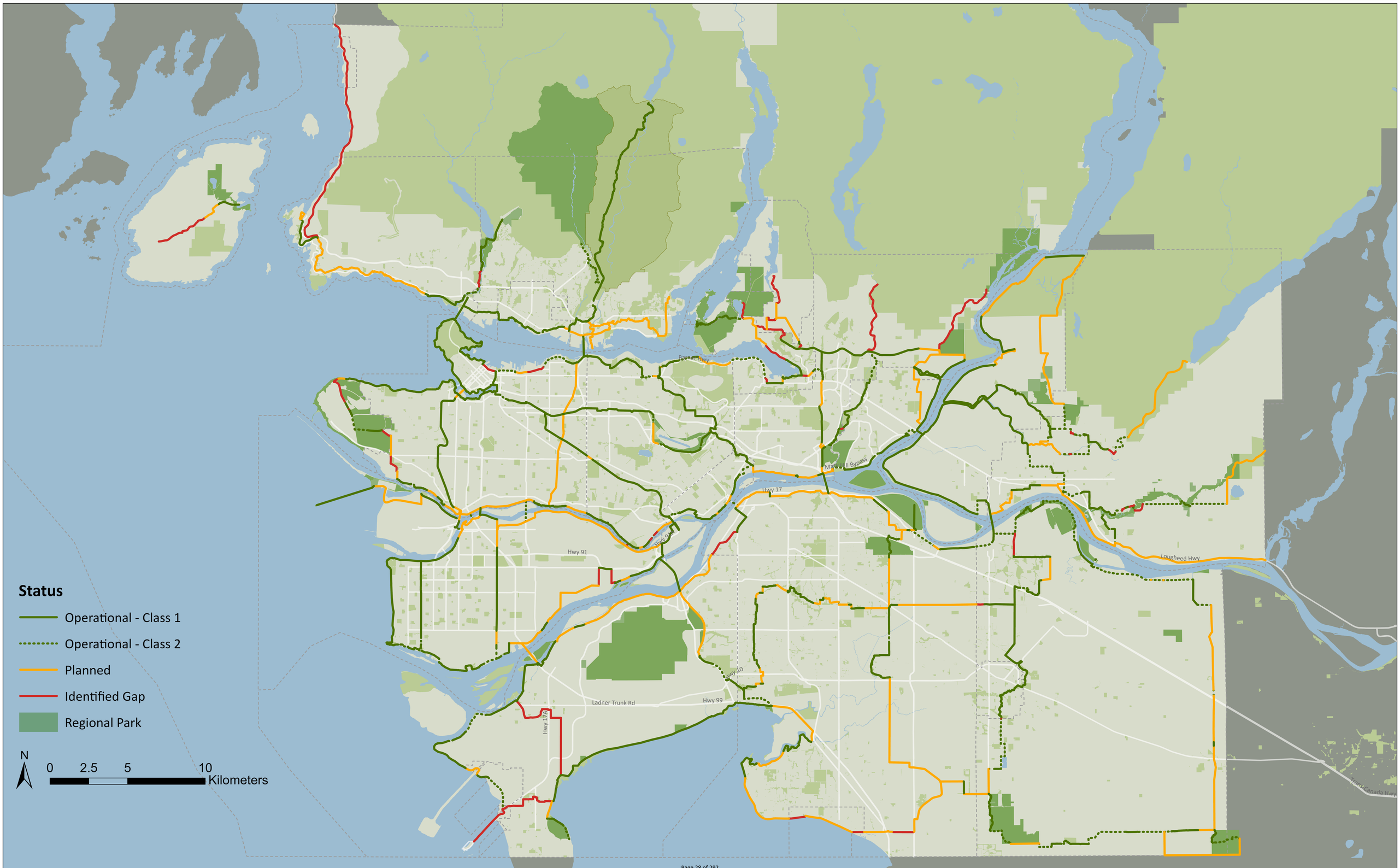
1. Map of 2023 Regional Greenway Network – Updated Operational Status, Sub-classified
2. Presentation re: Regional Greenway Network Status Update

REFERENCES

1. Regional Greenways 2050 Plan

66640483

Greenway Network Operational Status



Attachment 2

ƛéxətəm Regional Park

Regional Greenway Network

IMPLEMENTATION STATUS UPDATE PROJECT REPORT

Jamie Vala
Division Manager, Planning and Resource Management

September 4th, 2024 Regional Parks Committee Meeting
67778046

metrovancouver

PROJECT BACKGROUND

- Greenway plan adopted in 2020
- Collaboratively developed with regional partners
- Included operational status map
- Initiated status update project in 2023

Regional Greenway Network Operational Status 2020

CLASSIFICATION SYSTEM (2020)

- Three class system used
  - Green - Operational
  - Orange - Planned
  - Red - Identified Gap
- Data provided by partners & Metro Vancouver

Central Valley Greenway, Vancouver

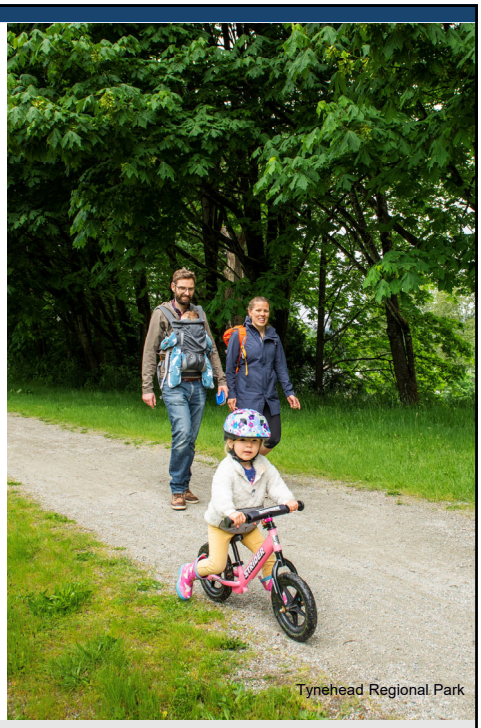
PROJECT OBJECTIVES

- Improved the accuracy of the 2020 data set
- Gathered current greenway network alignment and status information and update data set
- Reviewed operational class greenway attributes
- Created an updated 2023 data set and classification statistics

Pitt River Greenway, Pitt Meadows

KEY FINDINGS

- 864 km total network length
- 39 km operational class increase
- 13 km/yr increase in operational class greenways
- 58% of network is classed operational
- 46% of network is operational class 1 and 12% is operational class 2


Tynehead Regional Park

metrovancouver

OPERATIONAL STATUS 2023- DRAFT

metrovancouver 6

Tynehead Regional Park, Surrey

Questions?

metrovancouver

7

To: Regional Parks Committee

From: Jamie Vala, Division Manager, Planning and Resource Management, Regional Parks
Josephine Clark, Natural Resource Management Planner, Regional Parks

Date: July 23, 2024 Meeting Date: September 4, 2024

Subject: **Natural Asset Management in Regional Parks - Project Update**

RECOMMENDATION

That the MVRD Board receive for information the report dated July 23, 2024, titled "Natural Asset Management in Regional Parks – Project Update."

EXECUTIVE SUMMARY

This report provides an update on the Natural Asset Management in Regional Parks project. Natural assets are the natural resources and ecosystems (e.g., forests, wetlands, and streams) that provide benefits to people.

An ecosystem services valuation was completed to develop a shared understanding of the services provided by natural assets within regional parks. Eight ecosystem services were measured and found to provide services to people valued at $1.036 billion annually.

An inventory of natural assets has been created and a desktop condition assessment completed, which found 90% of regional parks' natural assets (by area) to be in good or very good condition. A pilot study has been initiated to test a natural asset management approach.

The goal of establishing a natural asset management program is to improve long-term work planning and prioritization by accounting for management activities and costs throughout the life cycle of natural assets in regional parks.

PURPOSE

The purpose of this report is to provide a progress update for the Natural Asset Management in Regional Parks project.

BACKGROUND

In 2021, the MVRD Board approved allocation from the Regional District Sustainability Innovation Fund (SIF) for the Natural Asset Management in Regional Parks project. This report provides an update on project progress to date.

The *Asset Management for Regional Parks* policy was approved by the MVRD Board in 2019 and sets an intention to incorporate natural assets within the asset management framework laid out in the Policy, as methodologies and tools for natural asset management evolve. The Natural Asset Management in Regional Parks project is a key step in the development of the Regional Parks Asset Management Plan, which will be brought forward for MVRD Board consideration in 2025.

The Natural Asset Management in Regional Parks project advances actions in multiple Metro Vancouver plans. The *Regional Parks Plan (2022)* includes actions to "develop and implement a coordinated natural asset management approach to maintain and enhance ecological health" and to "integrate natural assets into the asset management program." *Metro 2050*, the regional growth strategy, and *Climate 2050*, the *Nature & Ecosystems Roadmap*, both include actions for Metro Vancouver to integrate natural assets into Metro Vancouver's asset management systems and corporate planning, and to support member jurisdictions in advancing natural asset management.

Natural Asset Management

Natural assets are the stock of natural resources and ecosystems, including geology, soil, air, water, and all living things, that provide benefits to people. Examples of natural assets include forests, wetlands, and streams. The benefits people obtain from ecosystems are called ecosystem services and include flood control, carbon sequestration, shading, and human health and well-being. These benefits are important in mitigating climate change and supporting regional resilience.

Asset management refers to the systematic and coordinated practices used to manage assets to ensure sustainable service delivery while managing risks and lifecycle costs. Traditionally, asset management practices were only applied to managing built assets. In recent years, local governments across Canada are increasingly adopting asset management practices to manage natural assets. This is driven by the recognition that natural assets provide vital services to communities but these services often go un-noticed or are undervalued. If natural assets are destroyed or degraded, delivery of services diminishes. In some cases, the loss of these natural assets can trigger the need for costly built infrastructure to replace or maintain the service levels (e.g., flood control infrastructure). By identifying, monitoring, and managing natural assets as part of an asset management approach, local governments can make more informed decisions related to natural assets to ensure long-term ecosystem health and sustained cost-effective service delivery.

NATURAL ASSET MANAGEMENT IN REGIONAL PARKS

Natural assets are essential to the provision of Regional Parks' services and deliver a range of important benefits to visitors and communities across Metro Vancouver. Built assets within regional parks (e.g., buildings, trails, culverts) are developed to facilitate access to natural areas while ensuring the safety of both visitors and the environment. Built assets in regional parks are closely integrated with natural assets, making it practical to manage built and natural assets collectively within an asset management framework.

The purpose of the SIF project, Natural Asset Management in Regional Parks is to make significant advances in integrating natural assets into Metro Vancouver's asset management system. Key objectives in support of achieving this purpose are:

- Assess the current state of natural assets in regional parks
- Increase understanding of the importance of natural assets and regional parks through an assessment of ecosystem services
- Identify and assess risks to natural assets

- Develop and test the natural asset management approach at a pilot location, including prioritizing management actions and incorporating lifecycle costs
- Ensure methodologies and approaches developed can be scaled up to the regional parks system and are repeatable over time
- Progress natural asset management in the Metro Vancouver region

The long-term goal of establishing a natural asset management program for Regional Parks is to develop a technical and financial roadmap that accounts for management activities and costs throughout the life cycle of natural assets in regional parks. Management activities include restoration, habitat creation, environmental assessment and mitigation, invasive species management, and monitoring of species, ecosystems, and conditions. These are the same tasks currently undertaken in regional parks through the natural resource management program. However, using asset management approaches to establish plans with longer timeframes to prioritize necessary activities and identify associated costs will allow for improved long-term financial and work planning.

Valuing the Services Provided by Regional Parks' Ecosystems
A common early step in developing a natural asset management program is to conduct an ecosystem services assessment and valuation. This step aims to develop a shared understanding of the services provided, identify who receives the benefits (e.g., visitors, neighbouring residents, wider communities), and determine the value of the services.

An ecosystem services valuation is a process that quantifies the value humans derive from the benefits they receive from the biophysical structure and processes of nature. It is not intended to place a value on nature itself. Ecosystem services values were generated using accepted and commonly used methods in environmental economics. A lack of data prohibited the valuation of some important services that regional parks' ecosystems provide, including mental and physical health. Some ecosystem services cannot yet be measured or valued because they are not quantifiable or because methods do not exist, including cultural and spiritual benefits.

Summary results from the ecosystem services assessment and valuation are provided in Table 1 below, with additional detail in Attachment 1. Figure 1, below, provides a visual representation of the ecosystem services assessed. Eight ecosystem services were measured and found to provide services to people valued at $1.036 billion annually.

Table 1 – Ecosystem services and valuation summary results

Ecosystem service	Benefit to people	Valuation (CAD/year)
Provision of recreation opportunities	Enjoyment of recreational activities	$827 million
Carbon sequestration	Avoided atmospheric carbon concentrations	$19 million
Air quality regulation	Avoided costs associated with health issues from air pollution	$11 million

Regulation of extreme heat events	Avoided mortality associated with extreme heat provided by proximity to natural areas	$22 million
Regulation of stormwater	Avoided stormwater management infrastructure costs	$103 million
Habitat preservation	Value people place on knowing certain areas (and associated biodiversity) are protected from development	$38 million
Contribution to science, education, and research	Improved knowledge, understanding, and appreciation of natural assets	$5 million
Contribution of wild pollination to crop productivity	Improved crop productivity generated from wild pollination	$11 million
	TOTAL	**$1.036 billion**

Figure 1 – Visual representation of the ecosystem services assessed for regional parks (Source: Metro 2050, Regional Growth Strategy)

Undergoing an ecosystem services assessment and valuation deepens our understanding of how nature contributes to human well-being and facilitates recognition of natural assets as important contributors to regional services that help reduce risks related to climate change impacts and other hazards.

Creating a Natural Asset Inventory and Condition Assessment

Asset inventories are used to define and track the assets to be managed and provide the data to support asset management. In preparation for creating an inventory, ecosystem mapping for regional parks (Terrestrial Ecosystem Mapping and Sensitive Ecosystem Inventory (SEI) mapping) was updated. The Regional Parks natural assets inventory was developed to align with the recently released Canadian Standards Association (CSA) standard for natural asset inventories. The inventory contains information on location, quantity, type, land tenure, and condition of assets. Figures 2 and 3 below shows built and natural asset summaries.

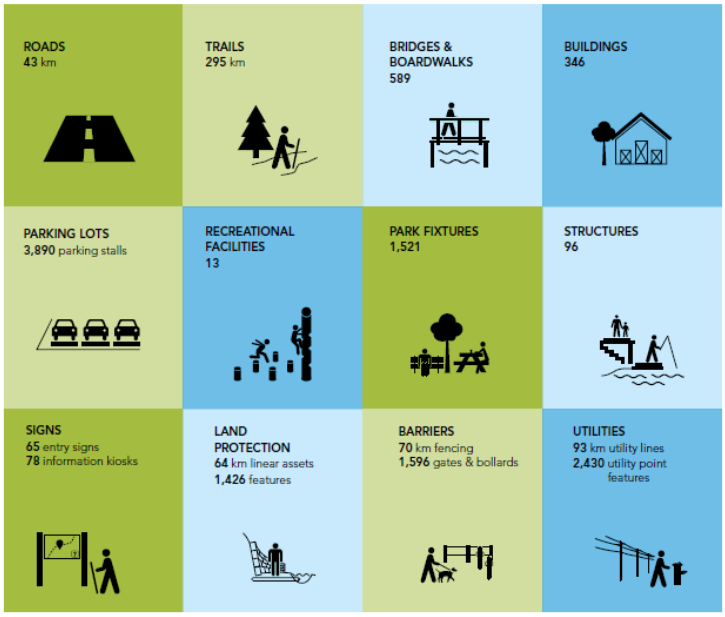


Figure 2 – Summary of regional parks' built assets

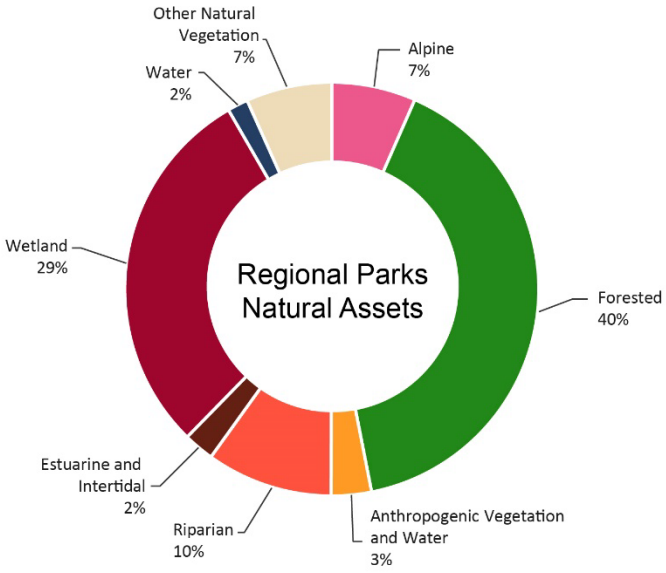


Figure 3 – Summary of regional parks' natural assets

A desktop condition assessment employed landscape ecology principles to establish a high-level understanding of each natural asset's health and ability to provide services. A similar five-point scale (very good, good, fair, poor, and very poor) used for built assets was applied to natural assets.

Results suggest that 90% of regional park ecosystems are in very good or good condition. Over time, this information will be refined with field-based inspections and used to inform and prioritize management and restoration actions.

Developing a Natural Asset Management Approach for a Pilot Regional Park

The purpose of the pilot is to develop the Regional Parks' natural asset management approach through a study focused on one regional park. Planning is underway and the pilot study will be completed in late 2024. Results will be reported to the Regional Parks Committee in early 2025.

The following scope is anticipated:

- Define levels of service for the pilot regional park
- Assess field conditions
- Explore management scenarios to understand trade-offs between costs and service levels

- Estimate costs of prioritized management actions – financial estimates will be based on the cost of undertaking management actions and are the equivalent of replacement costs used for financial estimates for built assets.

The pilot study will ascertain the process of developing a natural asset management approach for one park, along with the data requirements, resourcing needs, and timeline.

Coordinating a Natural Assets Technical Advisory Group
Metro Vancouver Regional Parks established a Natural Assets Technical Advisory Group for staff from other Metro Vancouver departments and member jurisdictions with the intent of maximizing knowledge transfer to others in the region. The purpose of the advisory group is to review project materials, provide input on the project, and share knowledge on natural asset management approaches. The advisory group will conclude once the pilot study is complete.

The advisory group has been well attended, with staff from ten member jurisdictions and four other Metro Vancouver departments.

Next Steps
After the pilot study is complete, the knowledge and information gained through the Natural Asset Management in Regional Parks project will be applied to the regional parks system and to advance the Regional Parks Asset Management Plan.

ALTERNATIVES
This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS
This project has been funded by $160,000 from SIF and $61,760 from the Regional Parks operating budget. This work will help to inform long-term financial planning with respect to maintenance costs for natural assets to ensure cost-effective service delivery.

CONCLUSION
The Natural Asset Management in Regional Parks project seeks to make significant advances in integrating natural assets into Metro Vancouver's asset management system. An ecosystem services valuation found regional parks' natural assets provide services to people valued at $1.036 billion annually.

A natural assets inventory has been created and a desktop condition assessment completed which found 90% of regional parks' natural assets (by area) to be in good or very good condition. A pilot study has been initiated to test a natural asset management approach. Learnings from the pilot will be used to scale up the approach to the regional parks system.

The goal of establishing a natural asset management program for Regional Parks is to improve long-term work planning and prioritization by accounting for management activities and costs throughout the life cycle of natural assets in regional parks.

ATTACHMENTS

1. Regional Parks Ecosystem Services Assessment and Valuation Summary Results
2. Presentation re: Natural Asset Management in Regional Parks – Project Update

REFERENCES

1. CSA W218:23 Specifications for natural asset inventories

67635187

Attachment 1

Regional Parks Ecosystem Services Assessment and Valuation Summary Results

Ecosystem service	Benefit to people (focus of valuation)	Primary Beneficiaries	Physical quantities	Valuation method[1]	Valuation (CAD/ year)
Provision of recreation opportunities	Enjoyment of recreation activities	Visitors, local economies	13,560,694 3-year average total visitation[2]	1	$827M
Carbon sequestration	Avoided atmospheric carbon concentrations	British Columbia	17,862 Total tonnes of carbon sequestered per year.	2	$19M
Air quality regulation	Avoided costs associated with health issues from air pollution	Residents living near regional parks	95.2 t NO2 950.7 t PM2.5 46.8 t O3 60.6 t SO2 removed	3	$11M
Regulation of extreme heat events	Avoided mortality associated with extreme heat provided by proximity to natural areas	Residents living near regional parks	2.5 individuals per year	4	$22M
Regulation of stormwater	Avoided stormwater management infrastructure costs	Residents, local governments	12 million m3 avoided runoff	5	$103M
Habitat preservation	Value people place on knowing certain areas (and associated biodiversity) are protected from development	Residents academics, educators	13,938 hectares	6	$38M
Contribution to science, education and research	Improved knowledge, understanding, and appreciation of natural assets	Academics, educators, students, Environment NGOs	An average of 92 research permits issued per year over the last 5 years	7	$5M

[1] See valuation method descriptions below

[2] Visitation data from 2019, 2022, and 2023 were used to remove the large increases recorded during the COVID-19 pandemic

Contribution of wild pollination to crop productivity	Improved crop productivity generated from wild pollination	Farmers, residents, local economies	1,066 ha of pollinator dependent crops within 500m regional park natural areas	8	$11M
TOTAL					$1.036B

Valuation methods

The valuation approach primarily focuses on the annual flow of benefits to people. The specific methods employed for valuation vary depending on the type of ecosystem service being assessed. Before presenting specific methods there are two key terms that should be defined:

- The values were estimated using the **value transfer** approach, which is a common environmental economics method used to estimate the value of ecosystem services. Value transfer is the process of taking the valuation results measured from one location and transferring them to another.
- **Willingness-to-pay** is an economic concept that measures an individual's maximum willingness to pay for a good or service and is considered a measure of total preference or total benefit of that good or service.

A concerted effort has been made to utilize as much local data from Metro Vancouver as possible. This approach ensures that the valuation is as accurate and relevant as possible to the specific socio-economic and ecological context of the Metro Vancouver region and Regional Parks.

The following approaches were used to determine ecosystem service values for natural assets in regional parks:

1. Recreation opportunities
   - Visitation statistics for regional parks were used to generate a 3-year average (2019, 2022, 2023) for annual visitation
   - The value of recreational opportunities was estimated by applying a willingness-to-pay per visitation. The willingness-to-pay estimate was sourced from Rosenberger's (2016) recreation use database and adjusted to 2023 Canadian dollars (CAD)

2. Carbon sequestration
   - The Carbon Budget Model of the Canadian Forest Service was used to determine sequestration rates for forest ecosystems. For non-forest ecosystems, empirical data from scientific literature was used to assign average carbon sequestration rates to land cover types.

- Carbon sequestration was valued using the Canadian Social Cost of Carbon (SCC) which is a monetary measure of the global impact attributable to increases in GHG emissions (Government of Canada, 2022). The Treasury Board of Canada recommends using the SCC when doing cost-benefit analysis.

3. Air Quality Regulation
   - The valuation of air quality regulation was based on estimating the avoided healthcare costs due to reduced exposure to air pollutants (NO2, O3, PM2.5, and SO2) provided by forested assets as compared to the absence of those assets.
   - A Metro Vancouver-specific value was determined drawing on the statistical relationship demonstrated by Nowak et al. (2014), which considers population density to scale the avoided healthcare costs according to the number of people influenced by the air quality surrounding each regional park. Pollution removal rates per area of tree cover were used to estimate the avoided air pollution provided by the regional parks.

4. Regulation of Extreme Heat Events
   - The value of regulating extreme summertime heat events through parks was based on estimating the reduction in mortality of residents adjacent to parks, associated with the anticipated reduction in maximum daily air temperature due to park proximity.
     - Data from Kroeger et al. (2018) was used to estimate the cooling influence of parks on summer air temperatures of park-adjacent residential neighbourhoods.
     - Data from Henderson et al. (2013) was used to relate the change in air temperature to changes in mortality.
     - The population of residential areas was estimated using census data.

5. Stormwater Regulation
   - Stormwater regulation was valued by estimating the volume of avoided runoff due to natural assets and then assigning a monetary value to the stormwater managed, based on the cost of built infrastructure to control that volume of runoff.
   - The value of avoided runoff was taken from Sahl et al. 2016.

6. Habitat Preservation
   - The approach to valuing biodiversity focused on people's willingness to pay for habitat preservation, rather than directly valuing biodiversity itself. Brander and Koetse (2011) estimated the value people place on parks, forests and other urban open spaces, considering variables such as area of open spaces and population density.

7. Contribution to Science, Education, and Research

- To value the educational and scientific contributions of Metro Vancouver's regional parks, data on volunteer hours and program participation from annual reports were analyzed. Using the average Canadian wage of $35 per hour as a proxy for the value of time, the monetary value of program participation and volunteer hours from 2019 to 2022 was estimated.
- The number of scientific studies in regional parks was calculated based on the number of research permits issued (5-year average) and valued based on an estimate of the value an average scientific study generates (Loomis and Richardson, 2000).

8. Contribution of wild pollination to crop productivity
    - To estimate the contribution of the regional parks system to crop productivity, the area of crop types within the pollinator foraging range of each asset was established. Crops were allocated a pollination impact rating based on their dependence on insect pollination (based on Aizen et al. (2019) and Klein et al. (2007)).
    - Agriculture statistics were then used to establish average BC crop production values.

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Attachment 2

Minnekhada Regional Park

Natural Asset Management in Regional Parks

PROJECT UPDATE

Jamie Vala
Division Manager, Planning and Resource Management

Josephine Clark
Natural Resource Management Planner

metrovancouver

NATURAL ASSET MANAGEMENT

Asset management provides a framework for making informed decisions related to **natural assets** to ensure long-term ecological health and sustained service delivery

Ǻéxətəm Regional Park

metrovancouver

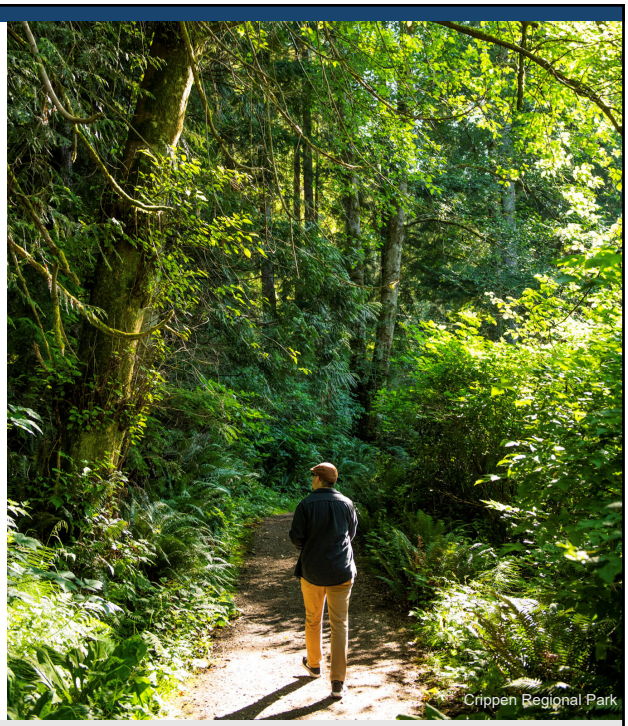
NATURAL ASSET MANAGEMENT IN REGIONAL PARKS

- Asset Management for Regional Parks Policy (2019)
- Integrated management of built and natural assets
- Improved long-term work planning and prioritization


Tynehead Regional Park

PROJECT OBJECTIVES

- Assess current state
- Increase understanding of natural asset importance
- Assess risks
- Test an approach
- Ensure scalability of approach
- Share the knowledge


Crippen Regional Park

VALUING ECOSYSTEM SERVICES

Regional Parks' natural assets provide services valued at $1.036 billion annually

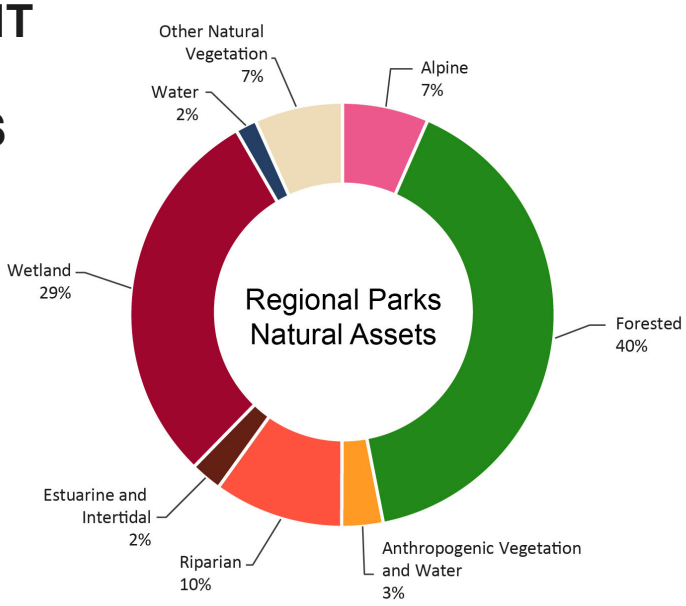
NATURAL ASSET MANAGEMENT TIMELINE

2021	2022	2023	2024	2025
Supporting Activities			*Key Project Phases*	
Project Scoping			Assess Current State	Pilot Project
	Update Ecological Mapping Data		- Inventory - Condition - Ecosystem services valuation	- Levels of service - Scenarios - Maintenance costs
			Technical Advisory Group	

Next Steps
- Asset Management Plan integration - Scale-up approach

ASSESSING THE CURRENT STATE OF REGIONAL PARKS NATURAL ASSETS

- Natural assets inventory
- Desktop condition assessment
  - 90% by area of natural assets are in very good or good condition



PILOT PROJECT

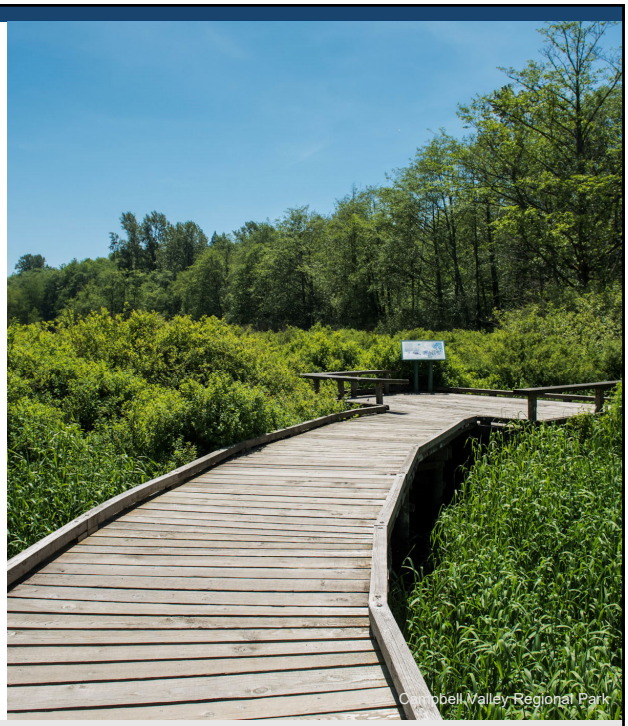
Campbell Valley Regional Park

Testing the approach:

- Define levels of service
- Field-based condition information
- Management scenarios
- Financial assessment of management actions (e.g. restoration)

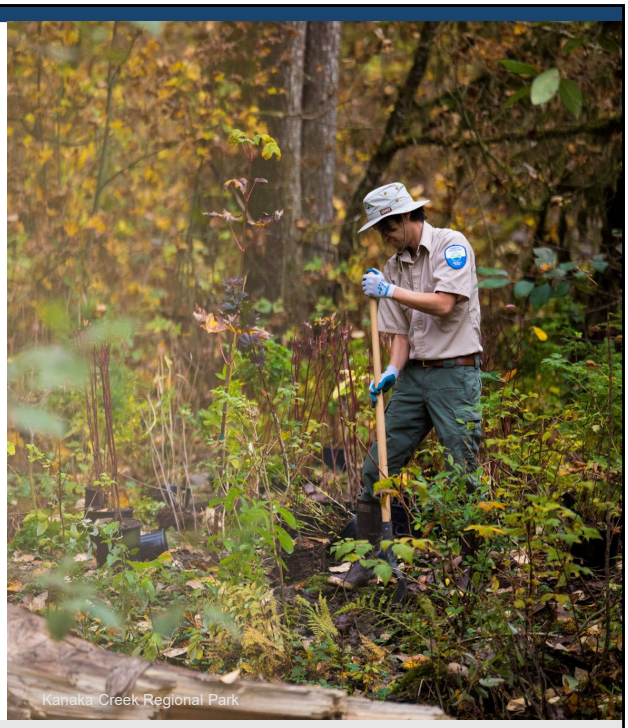
Outcomes:

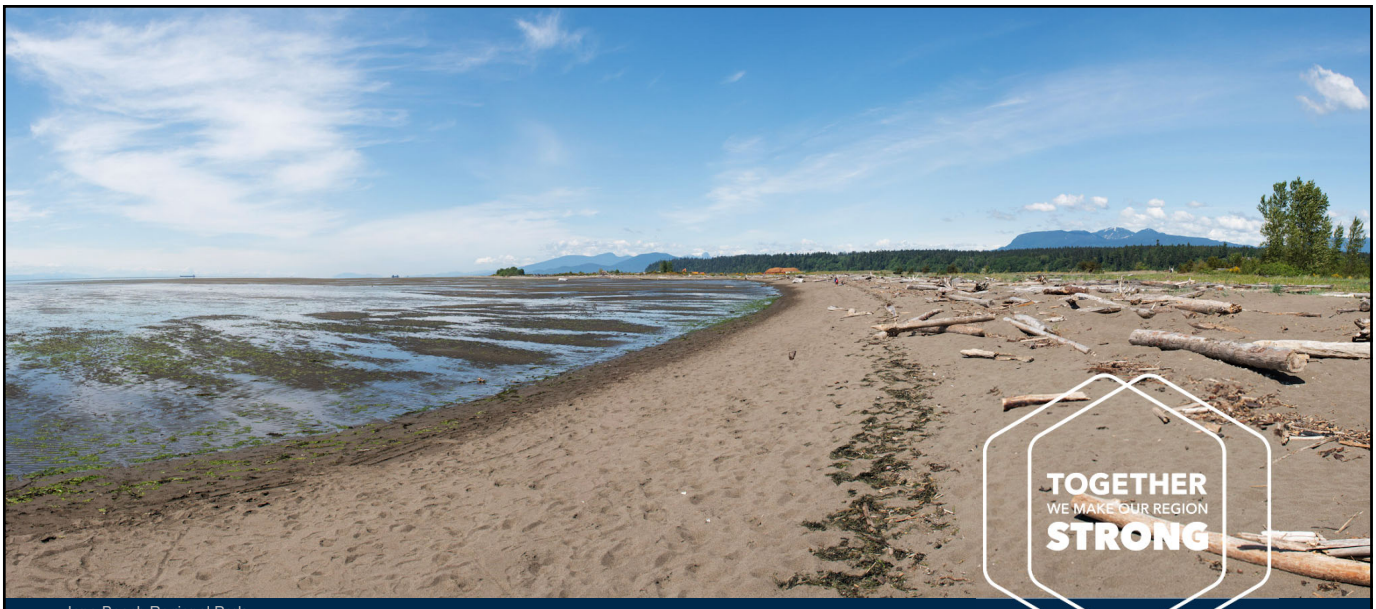
- A long-term, priortized work plan for natural assets at Campbell Valley Regional Park



NEXT STEPS

- Integrating natural assets into the Regional Parks Asset Management Plan
- Scaling up to the regional parks system


Kanaka Creek Regional Park



Iona Beach Regional Park

Questions

metrovancouver

To: Regional Parks Committee

From: Mike Redpath, Director, Regional Parks

Date: August 26, 2024 Meeting Date: September 4, 2024

Subject: **Manager's Report – Regional Parks**

RECOMMENDATION

That the Regional Parks Committee/MVRD Board receive for information the report dated August 26, 2024, titled "Manager's Report – Regional Parks."

EXECUTIVE SUMMARY

Attachment 1 to this report sets out the Regional Parks Committee Work Plan for 2024. The status of work program elements is indicated as pending, in progress, or complete. The listing is updated as needed to include new issues that arrive, items requested by the Committee, and changes in the schedule.

REGIONAL PARKS STAFF RECOGNIZED WITH VITAL LINK AWARD

Three Regional Parks staff were recently awarded the Vital Link Award from the BC Emergency Health Services for their life-saving actions. The Vital Link Award is presented to citizens who are "involved in saving a life through successful cardio-pulmonary resuscitation (CPR) efforts."

Parks staff receiving the Vital Link Award

While driving in to Lynn Headwaters Regional Park, one of the park operators found an individual lying face down on the road, unresponsive and without a pulse. He began CPR and called 911, and contacted his colleagues for first aid equipment. Another park operator provided assisted breathing while one of the park workers managed the entrance road for emergency services to arrive. With their quick action and teamwork, the individual survived and is on the road to recovery. Remarkably, he turned out to be the uncle of another Metro Vancouver employee!

METRO VANCOUVER REGIONAL PARKS FOUNDATION – EXECUTIVE DIRECTOR

The Metro Vancouver Regional Parks Foundation has appointed a new Executive Director, Mark Mahl. Mark is a former teacher, high-performance volleyball coach, and University Athletic Director. Fifteen years ago, he transitioned into the charitable non-profit sector, working with organizations like the MS Society, the Rick Hansen Foundation, and Habitat for Humanity. Mark has founded two charities for vulnerable youth and has served as a Director for Prostate Cancer Canada and the Terry Fox Cancer Research Institute. Currently, as the Executive Director of Metro Vancouver Regional Parks Foundation, Mark is dedicated to enhancing our iconic parks system.

CANADIAN PROTECTED AND CONSERVED AREAS DATABASE (CPCAD)

The Canadian Protected and Conserved Areas Database (CPCAD) is a federal database that contains information on protected and conserved areas across the country. Initially this database focused on capturing federal and provincial protected areas. However, as local and regional parks, along with other protected and conserved areas, play an important role in Canada's conservation network and help Canadians connect with nature, the Government of Canada is working with partners to recognize more of these important spaces. These collective efforts are supporting Canada's goal to conserve 30 percent of land and water by 2030.

In 2023, the Capital Regional District and the Regional District of Central Okanagan included their regional parks in the CPCAD database. Funding has been provided through BC Nature to help local and regional governments undertake the necessary assessment to identify which of their parks and protected areas meet the criteria for inclusion into this database. Metro Vancouver is participating in this opportunity to review and submit Metro Vancouver's regional park land inventory into this database. Inclusion in the database helps to recognize the importance of regional parks lands in the conservation network in Canada and contributes to Canada's conservation targets.

REGIONAL PARKS UPDATES

Wildfires in Regional Parks

Higher temperatures and reduced rainfall in summer increases the risk of wildfires. In the past few months, there have been three small fires in regional parks.

The first fire occurred on June 28 in Camosun Bog at Pacific Spirit Regional Park. Vancouver Fire and Rescue Services (VFRS) received reports of the smell of smoke in the area. With the assistance of Regional Parks staff, VFRS quickly located and extinguished the smouldering fire. Regional Parks staff conducted a fire watch into the evening and checked the area the next day.

Three weeks later, a fire started along the cliffs at Kanaka Creek Regional Park. Maple Ridge Fire and Rescue Services contained the fire. The Metro Vancouver emergency management team, along with Water Services and Regional Parks staff, remained on-site to ensure the fire stayed out.

One week later, the smell of smoke was reported at Grouse Mountain Regional Park. District of North Vancouver (DNV) Fire crews found a small stump smouldering near the BCMC Trailhead at the base of the mountain. DNV Fire, Regional Parks, and Metro Vancouver Protection staff worked together to suppress, contain, and put out the fire. Thankfully, the region received 15 to 20

millimetres of rain the day of the fire, which helped containment efforts. Regional Parks staff continued monitoring the area the following week to check for hot spots.

The quick action from Regional Parks staff and collaboration with other agencies and departments helped put these wildfires out quickly and prevented their spread.

Campbell Valley Regional Park – McLean Pond ALC Application

The development and opening of the McLean Pond area of Campbell Valley Regional Park is progressing. On July 29, 2024, the Provincial Agricultural Land Commission (ALC) approved the McLean Pond Development Application. Regional Parks staff worked with ALC representatives to develop a concept that provides opportunities to connect with nature and restore ecologically sensitive areas while minimizing impacts on agricultural lands.

A new park entrance and staging area will be established along with new trails, picnic areas, group campsites, and boardwalks to facilitate interpretation and programming in McLean Pond. Interpretative signage on past and current agricultural practices will be added as requested by the ALC. New wetlands will be established along with enhanced ecological corridors throughout the site. Staff are working closely with ḳʷɑ:ṅƛ̓əṅ (Kwantlen First Nation) on the project to identify opportunities for cultural recognition in that area of the park.

McLean Pond area at Campbell Valley Regional Park

Detailed design of the site will commence in Fall 2024, with construction planned to begin in summer 2025 pending municipal and environmental approvals.

Campbell Valley Regional Park – Canada Day Car Show

On July 1 by 10 am, the Little River Bowl Heritage Area in Campbell Valley Regional Park was packed full of classic cars and hot rods. The Annual Canada d'Eh Celebration and Car Show, organized by brothers Ewald and Kurt Penner from JellyBean Autocrafters, was held this year at the former Langley Speedway in Campbell Valley Regional Park.

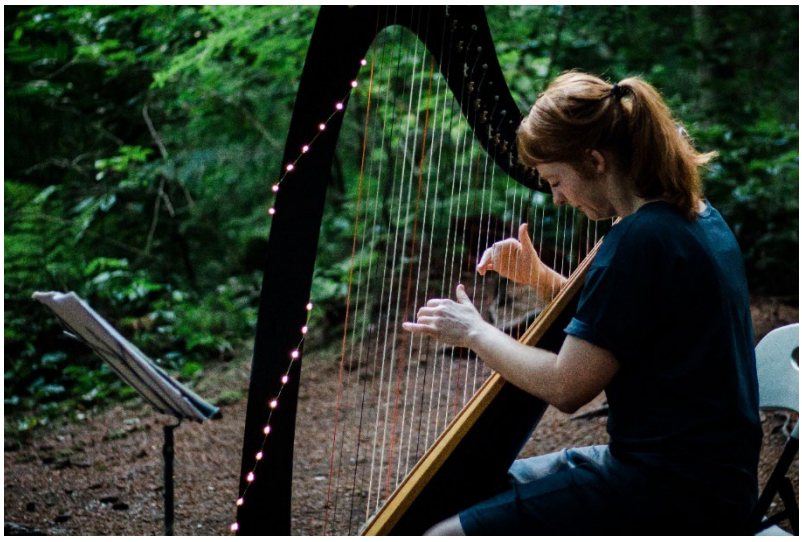
The Canada d'Eh Celebration and Car Show at Campbell Valley Regional Park

Over 800 cars were present for the car show, with over 2,500 participants. Every parking lot and roadside spot around the park was packed with cars full of people coming to listen to the live band, enjoy the various food trucks, and admire the beautiful cars on show.

Pacific Spirit Regional Park – Forest Harmonies

Over 500 people strolled through the Pacific Spirit Regional Park rainforest at dusk during the Forest Harmonies event on Saturday, July 21. Visitors were enchanted by beautiful music that resonated through the forest and interpretative displays that shared stories of connections between nature and music.

Local musicians included a harpist, fiddler, cellist and a lively choir that sang delightful forest tunes. The event also featured music lyric scrolls posted along the trail, a mindfulness walk, a picturesque wind chime walk, and animal sound melodies emitting from the trees.



Harpist at Forest Harmonies in Pacific Spirit Regional Park

The event was delivered in partnership with the Pacific Spirit Park Society whose members helped plan the event, design stations, recruit musicians and volunteers, and engage visitors to try their own hand at a musical instrument. When asked to write "nature" and/or "music" on a whiteboard in their first language, over 20 different languages were recorded by visitors.

Grouse Mountain Regional Park – Installation of AEDs on the Grouse Grind Trail

With 800 metres of elevation gain spanning a stretch of 2.5 kilometres, the Grouse Grind Trail is a steep and challenging alpine trail located in Grouse Mountain Regional Park. Medical response and extraction is sometimes required for hikers suffering from overexertion, injuries, or cardiac emergencies. Medical response is coordinated closely with first responders and partner agencies including the District of North Vancouver Fire and Rescue Services, North Shore Rescue, BC Ambulance Service, and Grouse Mountain Resort.

One of the AEDs installed along the Grouse Grind

As a proactive measure to support emergency medical response, three publicly accessible automated external defibrillators (AEDs) have been installed on the Grouse Grind Trail at the one-quarter, one-half, and three-quarters markers. An AED is a device that can automatically analyze the heart rhythm in people who are experiencing cardiac arrest and can deliver an electrical shock to the heart to restore its normal rhythm. Research has shown that using an AED, combined with CPR, offers the best chance of saving a life in the event of cardiac arrest. The placement of AEDs on the popular Grouse Grind Trail offers the public access to potentially life-saving resources in the event of an unexpected medical emergency.

təmtəmíxʷtən/Belcarra Regional Park – Road Recreation Site

The West Road Recreation Site at təmtəmíxʷtən/Belcarra Regional Park is under a long-term licence agreement with the Village of Belcarra. The site primarily consists of deteriorated tennis courts that have not been playable for a number of years. Metro Vancouver has received calls from the general public about the condition of the area. Metro Vancouver sent the Village of Belcarra a letter on January 16, 2023, expressing concerns about the condition of the site. A response was received on August 13, 2023, explaining that some vegetation and debris removal had occurred. Metro Vancouver was advised in the January 16, 2023 letter that the Village plans to refurbish the area. Metro Vancouver and Village of Belcarra staff met in January 2024 to discuss options, and Metro Vancouver followed up with a letter in June 2024. Metro Vancouver's most recent letter dated July 26, 2024 will be included the Village of Belcarra's September 9 Council agenda. Staff will report back to the Regional Parks Committee once a response from the Village of Belcarra has been received.

ATTACHMENTS

1. Regional Parks Committee 2024 Work Plan

68625235

Regional Parks Committee 2024 Work Plan

Report Date: August 26, 2024

Priorities

1st Quarter	**Status**
Regional Parks Committee Priorities and 2024 Work Plan	Completed
Regional Parks Land Dedication Bylaw	Completed
Cape Roger Curtis Engagement Process and Rezoning – Update	Completed
Pilot Program to Permit Alcohol Consumption in Regional Parks	Completed
Regional Parks Real-Time Parking Availability Program	Completed
Mobile Vending Pilot Project	Completed
Belcarra South Picnic Area Revised Plan	Completed
2nd Quarter	
Regional Greenways Plan Implementation Updates	Completed
Pacific Spirit Regional Park - Wreck Beach Update	Completed
Regional Parks Community Involvement Update	Completed
Cultural Planning and Cooperation Agreement Update	Completed
Regional Parks Annual Report 2023	Completed
Kiosk Information Panels Review	Completed
Metro Vancouver Regional District Filming Update	Completed
Metro Vancouver Regional District Consumption of Liquor in Regional Parks Bylaw	Completed
Metro Vancouver Regional District Regional Parks Regulation Amendment Bylaw	Completed
Cape Roger Curtis Update	Completed
Regional Parks Committee Tour of Regional Parks	Completed
3rd Quarter	
Draft 2025 - 2029 Capital Plan Overview	Completed
Natural Resource Management Program Stewardship Program Update	Completed
Metro Vancouver Regional Parks Foundation Update	Pending
Natural Asset Management Update	Pending
Metro Vancouver 10 Year Salmon Enhancement Action Plan Update	Pending
Kanaka Education and Environmental Partnership Society (KEEPS) Contribution Agreement and Presentation	Completed
Pacific Spirit Park Society Contribution Agreement and Presentation	Completed
4th Quarter	
2025 - 2029 Five Year Financial Plan and 2025 Budget and Annual Rates	Pending
MVRD Fees and Charges Amendment Bylaw	Pending
Regional Parks Asset Management Plan	Pending

Regional Parks Building Strategy	Pending
Regional Parks Nature Access Program	Pending
Repeal and Replace Regional Parks Regulation Bylaw	Pending
Centennial Beach Concession Building / Services Review	Pending
Metro Vancouver Regional Parks Foundation Update	Pending

Status = Pending, In Progress or Completed

To: MVRD Board of Directors

From: MVRD Board

Date: May 31, 2024 Meeting Date: September 27, 2024

Subject: **Best Practices in Energy and Emissions Benchmarking and Reporting for Existing Large Buildings**

RECOMMENDATION

That the MVRD Board receive for information the report dated April 16, 2024, titled "Best Practices in Energy and Emissions Benchmarking and Reporting for Existing Large Buildings".

At its May 31, 2024 meeting, the MVRD Board considered the attached report titled "Best Practices in Energy and Emissions Benchmarking and Reporting for Existing Large Buildings", dated April 16, 2024. The Board referred the report to its September meeting with the following resolution:

> *That the MVRD Board refer the report titled "Best Practices in Energy and Emissions Benchmarking and Reporting for Existing Large Buildings" to the September MVRD Board meeting.*

This matter is now before the Board for its consideration.

ATTACHMENTS

1. Report titled "Best Practices in Energy and Emissions Benchmarking and Reporting for Existing Large Buildings", dated April 16, 2024

70554508

To: Climate Action Committee

From: Morgan Braglewicz, Air Quality Planner, and
Erik Blair, Senior Planner, Air Quality and Climate Action Services

Date: April 16, 2024 Meeting Date: May 9, 2024

Subject: **Best Practices in Energy and Emissions Benchmarking and Reporting for Existing Large Buildings**

RECOMMENDATION

That the MVRD Board receive for information the report dated April 16, 2024, titled "Best Practices in Energy and Emissions Benchmarking and Reporting for Existing Large Buildings".

EXECUTIVE SUMMARY

At its January 2024 meeting, the MVRD Board chose not to proceed with engagement on a potential regulatory approach to phase in emissions limits for existing large buildings. In response to the Board's expressed concerns about the approach, including impacts on affordability, staff have been exploring alternative means to supporting large buildings in the energy transition with an aim to protecting human health and reducing energy waste and associated costs. With the rise in extreme heat events and cold snaps in the region in recent years, every building needs a plan to improve energy efficiency, safeguard occupant health and comfort, and reduce emissions.

Experience in over 60 North American jurisdictions demonstrates that building *benchmarking* and *reporting requirements* are a well-accepted practice that can enable these benefits. Benchmarking consists of tracking a building's energy and emissions performance over time and comparing it with other similar buildings so that owners have more information about their building's performance. Benchmarking and reporting requirements have become a common approach for jurisdictions seeking to support building owners to retrofit their buildings. Staff will use feedback on this report to seek future direction from the MVRD Board on exploring options for energy and emissions benchmarking and reporting requirements in existing large buildings.

PURPOSE

To inform the MVRD Board, and provide an opportunity for feedback on an alternative approach to supporting existing large buildings via energy and emissions benchmarking and reporting programs, an approach being used in other jurisdictions to support building owners' decisions about energy use, emissions, and retrofits.

BACKGROUND

In various venues, member jurisdictions have expressed interest in the MVRD Board considering the implementation of regional benchmarking and reporting requirements. Metro Vancouver's *Climate 2050 Buildings Roadmap* identifies the importance of reducing emissions from existing large buildings by establishing an energy benchmarking and reporting program and introducing mandatory building performance standards. In January 2024, the MVRD Board did not endorse

continued engagement on a proposed approach to develop a regulation involving mandatory building performance standards to reduce greenhouse gas emissions from existing large buildings.

The City of Vancouver now requires energy and carbon reporting, and other municipalities, such as the City of Richmond, are considering similar requirements. In addition, there is a voluntary benchmarking program in place in BC that a small proportion of buildings in the region currently participate in. This report provides information about best practices for benchmarking and reporting programs from other jurisdictions, and describes the benefits of taking a regional approach.

BEST PRACTICES IN ENERGY AND EMISSIONS BENCHMARKING AND REPORTING

Benchmarking is the process of measuring a building's energy use and emissions and comparing performance over time and to other similar buildings. Benchmarking programs include a reporting component in which building owners provide building energy and emissions data to a program authority. Data can then be anonymized or aggregated by the authority to allow building owners to compare their energy use and emissions to other buildings. This information can take different forms such as databases, maps, and reports. Benchmarking and reporting can be undertaken as a stand-alone program, and it has proven to be a foundational program element in other jurisdictions that have implemented regulatory policies for reducing GHG emissions from existing large buildings.

Providing Building Owners with Information and Supports for Retrofits

The primary objective of benchmarking and reporting programs is to increase building owner awareness of building energy and emissions performance, with the ultimate goal of identifying opportunities to cut energy waste, reduce costs, and improve occupant health and comfort. Many building owners are unaware of how their building performs, especially in comparison to similar buildings. Effective benchmarking programs can help building owners identify energy and cost reduction opportunities, promoting data-driven decisions on retrofits and efficiency measures.

Data from benchmarking and reporting programs can also inform the design of support programs and other policies. Supportive programs connecting building owners to information and incentives for building retrofits can be tailored to local needs based on information from reporting. Benchmarking and reporting programs are sometimes implemented prior to building performance requirements, and data from these programs may be used as a basis for data-informed policy-making by the regulating authority.

Benchmarking and reporting can be voluntary or mandatory. The potential benefits of benchmarking are greatest in mandatory programs where all similar buildings are required to report on their performance, leading to more comprehensive data for performance comparison. This enables a broader group of building owners to participate and access the benefits that benchmarking can offer, creating a level playing field for all owners with similar building types. Additionally, program authorities can more effectively design programs and connect building owners to resources that support upgrades and cost-saving energy reduction measures.

Benchmarking Outcomes and Benefits

Building benchmarking and reporting programs have demonstrated measurable benefits of reduced energy use and costs, and improved health outcomes:

- **Reduced energy use and costs**: Data from the Institute for Market Transformation (Reference 1) shows that buildings across the U.S. that benchmarked over a three-year time span reduced their energy consumption by an average of 2.4% annually, which for a 500,000-square-foot office building could result in estimated cumulative energy cost savings of $120,000 USD over three years.
- **Improvements in health**: Information from benchmarking in New York City (Reference 2) has shown a strong linkage between average building energy use intensity and incidence of asthma-related emergency room visits.

To realize these benefits, building owners first need to understand their building energy and emissions performance. Information from benchmarking buildings is the foundation for making data-informed decisions about energy retrofits and efficiency measures that reduce energy use and costs. Experience in other jurisdictions has shown that buildings that undertake benchmarking and understand their buildings' energy and emissions are more likely to take energy reduction actions such as retrofits.

Experience in Other Jurisdictions

Building energy and emissions benchmarking and reporting have become common practice internationally and within Canada and BC, with over 60 jurisdictions in North American having implemented such programs. Often, the programs are implemented at a local government level where large buildings are located. Mandatory benchmarking and reporting programs are in place for public, commercial, and multi-unit residential buildings in Ontario, Montreal, and Vancouver. There are voluntary programs in place in BC, Nova Scotia, Winnipeg, Edmonton, and Calgary.

Building Benchmark BC is the largest voluntary benchmarking and reporting program in North America, and is entering its fifth reporting year. In 2023, over 1,300 buildings in BC voluntarily participated in the program, including over 350 buildings in the Metro Vancouver region. Metro Vancouver Housing participates in this program, reporting on the performance of 15 buildings. The program has been successful in supporting building owners that recognize the benefits of benchmarking with a platform that allows them to report their performance and compare it to other buildings. However, the voluntary nature of the program means that its reach within Metro Vancouver has been limited to a small percentage of all large buildings. Many building owners in the region that could benefit from participation in such a program are unaware of the free services offered by Building Benchmark BC.

Several member jurisdictions have expressed interest in the use of benchmarking and reporting to achieve the objectives of their climate action plans. To date, the BC Government has signaled that it does not intend to establish a mandatory provincial benchmarking and reporting program. Within BC, there are several local governments exploring or implementing benchmarking and reporting programs:

- In March 2024, the **City of Vancouver** launched Energize Vancouver (Reference 3), a resource and information hub helping owners and managers of large existing commercial

and multi-unit residential buildings understand and comply with the City's new energy and greenhouse gas emissions requirements. Large commercial buildings will submit their first annual energy usage and carbon emissions reports by June 2024. Beginning in 2026, building performance standards will also be phased in**.**

- The **City of Richmond** is advancing proposed energy and emissions reporting requirements for large existing buildings.
- The **City of Victoria, District of Saanich,** and **Capital Regional District** are currently engaging on a proposed program to require large building owners to submit annual energy and carbon emissions reports, providing a regionally consistent approach to benchmarking and reporting.

Benefits of Regional Benchmarking and Reporting

Regional scale requirements for large building owners to benchmark and report their energy and emissions can achieve broad and consistent benefits for building owners and occupants. Based on the experience of other jurisdictions, benchmarking and reporting is most effective when it is mandatory for all buildings of similar types and sizes. This allows all building owners of similar buildings to effectively compare their building's performance to inform decisions on energy use and retrofits to reduce costs and improve health outcomes, reaching a broader group of owners and occupants. A regional requirement creates a consistent approach for owners of buildings across the region, and it would provide data to guide regional support programs and inform future policy discussions. The data collected could also inform utility energy planning as it allows for more detailed analysis of regional energy demand, a key emerging need.

Benchmarking and reporting programs generate the data needed to provide building owners with effective retrofit supports and incentives. Various support programs are in place and under development in BC, including the BC Retrofit Accelerator (BCRA). The BCRA was established at the regional scale by the Zero Emissions Innovation Centre using seed funding from Metro Vancouver's Sustainability Innovation Fund, and in 2023 was expanded to the provincial level. It is currently developing a suite of support programs that will guide building owners to plan and undertake deep emissions retrofits in buildings, and has secured $15.6M in funding to support these initiatives. Services include support for measuring building energy use and emissions, building assessments, contractor referrals, advice on incentives and financing, and training of building staff.

Next Steps

The information in this report is presented to provide background on the outcomes and benefits of energy and emissions benchmarking and reporting for existing large buildings, as well as the status of benchmarking programs in other jurisdictions. To ensure building owners across Metro Vancouver's member jurisdictions have consistent access to information and supports for building retrofits, staff are exploring options for a potential region-wide approach to benchmarking and reporting requirements for existing large buildings, which would be advanced for the MVRD Board's consideration in a future report.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

There are no financial implications arising from this report. Staff resources and consulting costs for the work described in this report were part of the Board-approved budgets for Air Quality and Climate Action Services in current and past years. Metro Vancouver conducted a consulting study on building energy and emissions benchmarking programs in partnership with the City of Surrey and with BC Hydro funding support. Metro Vancouver contributed $37,500 with an additional contribution of $37,500 from the City of Surrey and $75,000 from BC Hydro.

CONCLUSION

Building benchmarking and reporting requirements for existing large buildings has emerged as an effective foundational tool that can lead to reduced energy waste and costs while improving health outcomes for occupants. Several jurisdictions within Metro Vancouver, BC, and Canada are among over 60 jurisdictions across North America that have advanced voluntary or mandatory benchmarking programs. Experience in other jurisdictions has demonstrated that benefits of benchmarking and reporting are greatest when programs are mandatory and accessible to a broad spectrum of building owners and occupants, and are connected to support programs providing access to information and incentives for retrofits. Some Metro Vancouver member municipalities are advancing such programs, however a regional approach would provide more consistency and benefits at scale. Staff will use feedback to this report to shape a future report to the MVRD Board seeking direction on exploring potential options for regional benchmarking and reporting requirements on energy and emissions in existing large buildings.

ATTACHMENT

1. Presentation re: Best Practices in Energy and Emissions Benchmarking and Reporting for Existing Large Buildings.

REFERENCES

1. Energy Benchmarking and Transparency Benefits - Institute for Market Transformation
2. The Benefits of Benchmarking Building Performance - Pacific Coast Collaborative, December 2015
3. Energize Vancouver – City of Vancouver

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Best Practices in Energy and Emissions Benchmarking and Reporting for Existing Large Buildings

Morgan Braglewicz
Air Quality Planner, Air Quality and Climate Action Services

Erik Blair
Senior Planner, Air Quality and Climate Action Services

Climate Action Committee Regular Meeting, May 9, 2024
67305761

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BUILDING BENCHMARKING AND REPORTING

- **Measuring a building's energy and emissions performance** over time; comparing it with other similar buildings
- Allows building owners to better **understand building performance**, make informed plans and decisions on retrofits
- Can **reduce energy waste and associated costs**, **improve health and comfort** for building occupants
- **Common practice** in over 60 jurisdictions in North America

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OUTCOMES AND BENEFITS

Benchmarking and reporting → Building retrofits

Building Owners
- Data-informed asset management
- Guide and justify energy efficiency investments
- Reduce energy use and costs

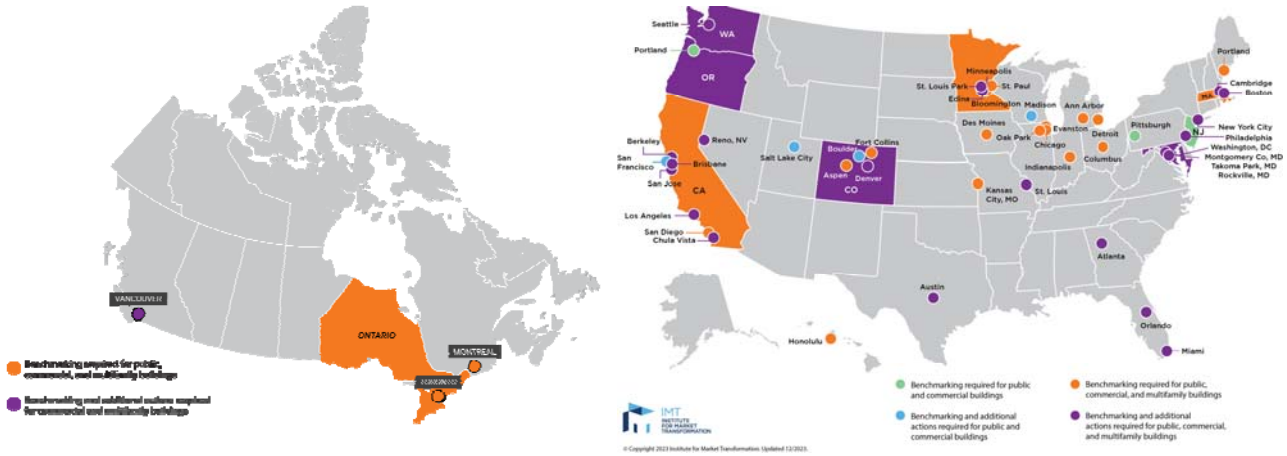
Owners, Occupants, Tenants
- Protect health and safety (extreme heat, smoke)
- Reduce energy costs
- Improve comfort and productivity

Government
- Data-informed policies and programs

Community
- Protected air quality
- Reduced GHG emissions

BENCHMARKING AND REPORTING IN NORTH AMERICA

Requirements in over 60 jurisdictions

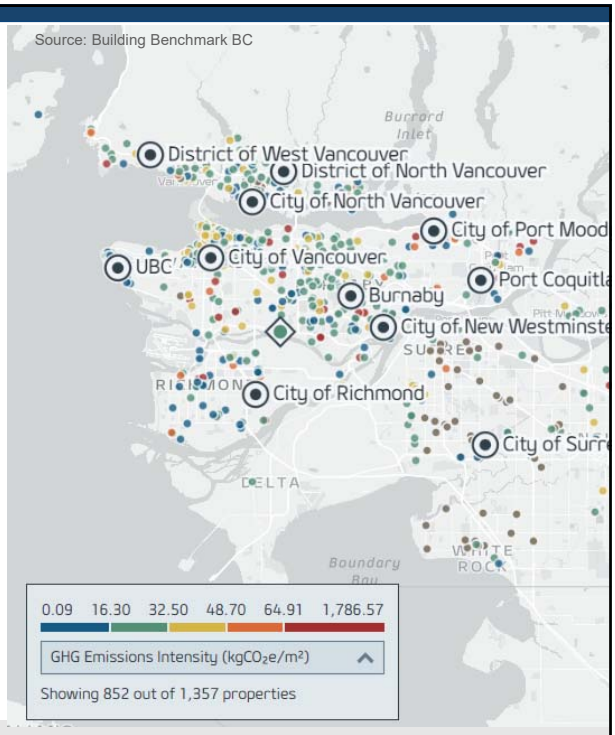


BENCHMARKING IN BC

Key organizations active in benchmarking and support programs:

- Building Benchmark BC
- BC Retrofit Accelerator

Several member municipalities are pursuing benchmarking and reporting requirements



NEXT STEPS

Staff are seeking feedback to inform options for regional benchmarking and reporting on energy and emissions in existing large buildings

Thank you

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To: Climate Action Committee

From: Lise Townsend, Division Manager, Air Quality and Climate Action Policy

Date: August 22, 2024 Meeting Date: September 5, 2024

Subject: **BC Hydro's "Distribution Extension Policy" and "2024 Rate Design" Applications to the BC Utilities Commission**

RECOMMENDATION

That the MVRD Board direct staff to:

a) participate as an intervener in the BC Utilities Commission proceedings for BC Hydro's applications for "Distribution Extension Policy" and "2024 Rate Design";
b) analyze and provide input to the proceedings to align with Board-adopted policies and targets including for regional air quality, clean and renewable energy and GHG reduction, including submitting comments, evidence, and a final argument; and
c) report back to the Climate Action Committee and Board on outcomes of the proceedings.

EXECUTIVE SUMMARY

Consistent with the MVRD Board's prior direction, this report seeks the Board's direction for Metro Vancouver to participate as an intervener in two BC Utilities Commission (BCUC) proceedings for BC Hydro's recently filed applications: "Distribution Extension Policy", which proposes to modernize the approach to paying for new and upgraded electrical distribution infrastructure; and "2024 Rate Design", which proposes a revised rate structure that, among other objectives, aims to reduce barriers to electrification. Based on staff's preliminary review, BC Hydro's proposals are generally aligned with Metro Vancouver's policies. Participating as an intervener can elevate regional interests such as affordability and infrastructure to support housing development. To meet BCUC deadlines, staff have registered Metro Vancouver as an intervener in both proceedings. With the Board's direction, staff will continue to participate and will report back on outcomes.

The input of interveners carries more weight in BCUC proceedings compared to submitting letters of comment. By participating as an intervener, Metro Vancouver has greater opportunity to influence the proceeding and advocate to the Province to protect the interests of the regional district, member jurisdictions, and local governments generally. Collaborating with other local governments in the proceeding is consistent with Metro Vancouver's role as a regional federation.

PURPOSE

To seek the MVRD Board's direction to participate as an intervener in the BCUC proceedings on BC Hydro's "Distribution Extension Policy" and "2024 Rate Design" to support Metro Vancouver's interests in the energy transition.

BACKGROUND

Metro Vancouver has previously participated in BCUC proceedings. Most recently, the Board directed staff to intervene in proceedings related to applications from FortisBC and BC Hydro, in

collaboration with other local governments. The outcomes of these proceedings are summarized in a report received by the MVRD Board on May 31, 2024, titled "BC Utilities Commission Decisions and Local Government Interests in the Energy Transition" (Reference 1). Points and evidence brought forward by the local government interveners were cited in the panel's decisions on these proceedings, which were generally aligned with the positions taken by the local government interveners. Metro Vancouver's participation in BCUC proceedings is supported by Board-adopted policies, including actions in the *Clean Air Plan* and *Climate 2050 Energy Roadmap*[1].

Metro Vancouver and member jurisdiction staff participated in BC Hydro consultation workshops on these proposals in late 2023. On June 27, 2024, BC Hydro filed applications to the BCUC for each proceeding. To meet the BCUC intervener registration deadlines, staff have registered Metro Vancouver as an intervener, and are working closely with member jurisdiction staff in preparation to collaboratively participate, as in prior proceedings.

BC HYDRO DISTRIBUTION EXTENSION POLICY APPLICATION

BC Hydro's Distribution Extension Policy (Reference 2) is intended to modernize the approach to paying for new and upgraded electrical distribution infrastructure. Distribution infrastructure refers to the network of wires, poles, transformers, and substations that delivers electricity from high-voltage transmission lines to individual homes, businesses, and other end users at a lower, usable voltage. The Distribution Extension Policy would address concerns related to the current policy including: unfair costs and "free-riders" (currently new or upgraded connections that require system upgrades must be completely paid for upfront by the initial customer, while subsequent customers in the same area can connect without paying the upgrade costs); unpredictability (upgrade costs can range widely, from thousands to millions of dollars); and delays that can impede much-needed housing development. All of these issues can also skew decisions in favour of gas-based systems, which can impact regional progress toward climate targets.

Under the proposed updates, BC Hydro would eliminate system improvement costs for all new customers, except in extraordinary circumstances, and increase BC Hydro's contribution to offsetting extension costs. These costs would be shifted to rate payers and are anticipated to be modest, in the order of 0.6%, subject to BCUC approval. BC Hydro states that these improvements will lower the cost of connections for many customers, speed up connection timelines, better balance cost sharing, provide greater cost certainty for developers, and help to support investments in affordable housing. Separately, BC Hydro has stated their commitment to speed up delivery of distribution system expansion and connection timelines, and has requested local governments' cooperation. Based on preliminary review, the policy appears to make positive changes to address known issues, while staff are interested in evaluating how it would impact infill development for smaller scale multi-unit residential buildings.

BC HYDRO 2024 RATE DESIGN APPLICATION

BC Hydro's 2024 Rate Design proposal (Reference 3) would update electricity rates for residential services, net metering, and non-integrated areas, to better meet contemporary energy needs and support affordability.

[1] For example: Energy Roadmap actions "1.5. Regional Climate Action in Energy Utility Regulatory Processes", and "2.1. Electrification Rates"; Clean Air Plan Action "2.1.5. Building Electrification Mandate for BC Hydro".

- For residential customers, BC Hydro would introduce an optional flat rate, and phase out the current "residential inclining block" rate (which applies higher rates above a threshold of energy consumption), merging it with the flat rate by 2028. BC Hydro would subsequently explore additional residential rate options in a future phase of work.
- For customers who generate their own electricity, such as with solar panels, new self-generation service rates would be introduced for individual and community systems. These rates would complement rebates for solar and battery systems, announced on June 27, 2024, to encourage distributed energy generation.
- For customers in non-integrated areas (not connected to BC Hydro's grid, often served by diesel generators), new rates would align with those in integrated areas to lower costs.
- BC Hydro also proposes to streamline the electric tariff terms and conditions for improved clarity and efficiency throughout.

Metro Vancouver and member jurisdiction staff have participated in BC Hydro consultation sessions on the proposed rates. Based on preliminary review, staff have noted that the changes appear to positively address known issues, such as disincentives to electrification resulting from the current residential inclining block rate, and improving the financial case for self-generation of solar power. However, advocacy to the Province may be warranted for legislative changes to allow BC Hydro to propose rates that are more responsive to the needs of low-income customers.

RELEVANCE OF PROCEEDINGS FOR METRO VANCOUVER

As outlined in the *Climate 2050 Energy Roadmap*, grid-supplied electricity is expected to be central to the transition to clean and renewable energy in the region and the province. BC Hydro's rates and policies are critical for encouraging energy conservation, promoting the use of zero-carbon equipment and vehicles, and ensuring affordability. Electrification of transportation, building heating systems, and industry also reduces air contaminants from fossil fuel combustion and enables efficient building cooling via heat pumps, protecting human health.

BC Hydro's proposals appear aligned with Metro Vancouver's Board-adopted policies, and consistent with approaches to protect affordability and enable low-carbon technologies and distributed energy generation. Pending more detailed analysis, staff may provide input to address considerations such as:

- the impact of the proposals on interacting objectives in the region, including for affordability, housing, infrastructure, air quality and GHG reduction;
- interaction of BC Hydro's proposals with municipal, regional and provincial climate policy including Metro Vancouver's *Clean Air Plan*, *Climate 2050 Roadmaps*, *Metro 2050; CleanBC, the BC Clean Energy Strategy* and recently enacted provincial housing bills;
- considerations to support distributed energy generation and demand reduction (e.g. district energy), including from Metro Vancouver facilities;
- considerations related to buildings, transportation (i.e., EV charging), infrastructure and industry based on Metro Vancouver's experience in these sectors;
- modernization of BCUC regulations to align with current policies and practices; and

- other perspectives, including in response to input and evidence filed by other interveners and the BCUC, to improve alignment with regional and provincial policies for air quality, GHG reduction, land use and energy.

The input of interveners carries more weight in BCUC proceedings compared to submitting letters of comment. By participating as an intervener, Metro Vancouver has greater opportunity to influence the proceeding and advocate to the Province to protect the interests of the regional district, member jurisdictions, and local governments generally. Collaborating with other local governments in the proceeding is consistent with Metro Vancouver's role as a regional federation.

PROCESS AND NEXT STEPS

The Regulatory Timetables for the proceedings, as outlined by the BCUC, are included in Attachment 1. Following the process established for other recent BCUC proceedings, staff have registered Metro Vancouver as an intervener to meet the BCUC intervener registration deadlines. Metro Vancouver staff are working closely with staff from other local governments to coordinate participation, including sharing information and resources. These local government interveners include the City of Vancouver, City of Richmond and Lulu Island Energy Company, and District of North Vancouver.

If the Board approves Metro Vancouver's participation as an intervener, staff will analyze BC Hydro's applications and submissions to the Proceedings, collaborate with other local government interveners to submit information requests, comments, evidence, and a final argument as appropriate. Staff will report back to the Committee and Board with updates during the process, and regarding decisions on the two proceedings once issued (expected in early 2025). If the Board does not support participation, Metro Vancouver can withdraw from the process without impact.

ALTERNATIVES

1. That the MVRD Board direct staff to:
    a. participate as an intervener in the BC Utilities Commission proceedings for BC Hydro's applications for "Distribution Extension Policy" and "2024 Rate Design";
    b. analyze and provide input to the proceedings to align with Board-adopted policies and targets including for regional air quality, clean and renewable energy and GHG reduction, including submitting comments, evidence, and a final argument; and
    c. report back to the Climate Action Committee and Board on outcomes of the proceedings.
2. That the MVRD Board receive for information the report dated August 22, 2024, titled "BC Hydro's '2024 Rate Design' and 'Distribution Extension Policy' Applications to the BC Utilities Commission".

FINANCIAL IMPLICATIONS

As a part of staff's participation in the BC Hydro proceedings, financial implications of the policy and rates proposals would be considered related to affordability and housing needs. The costs of participating in the proceedings is anticipated to be modest and is accounted for in the 2024 and 2025 departmental operating budget, including legal review and consultant support, if needed, which would be shared with other participating local governments.

CONCLUSION

Staff are proposing that Metro Vancouver engage with relevant BC Utilities Commission processes, in a manner consistent with the MVRD Board's prior direction on similar proceedings, and adopted policies in the *Clean Air Plan* and *Climate 2050 Roadmaps*. The Board's approval is sought for Metro Vancouver to act as an intervener in two BC Hydro applications regarding its Distribution Extension Policy and electrical rates. Participating in these processes offers the opportunity to advocate for regional interests in the energy transition. As such, staff recommend Alternative 1.

ATTACHMENT

1. "Regulatory Timetables for the BCUC Proceedings: 'Distribution Extension Policy' and '2024 Rate Design'", dated August 22, 2024.
2. Presentation re: "BC Hydro's 'Distribution Extension Policy' and '2024 Rate Design' Applications to the BC Utilities Commission", dated September 5, 2024.

REFERENCES

1. "BC Utilities Commission Decisions and Local Government Interests in the Energy Transition", dated, April 15, 2024.
2. BC Hydro Distribution Extension Policy, BC Utilities Commission
3. BC Hydro 2024 Rate Design, BC Utilities Commission

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Regulatory Timetables for the BCUC Proceedings: "Distribution Extension Policy" and "2024 Rate Design"

The Regulatory Timetables for the two proceedings described in this report, as outlined by the BCUC on the proceeding websites, are shown below.

Figure 1. Regulatory Timetable for the BC Hydro 2024 Distribution Extension Policy Proceeding

Action	Date (2024)
BC Hydro Provides Notice of Application	Tuesday, July 30
BC Hydro provides confirmation to the BCUC regarding Notice of Application	Thursday, August 1
Intervener registration deadline	Thursday, August 15
BCUC Information Request (IR) No. 1 to BC Hydro	Friday, September 6
Intervener IR No. 1 to BC Hydro	Thursday, September 19
BC Hydro responses to BCUC and Intervener IR No. 1	Thursday, October 17
BC Hydro final argument	Thursday, October 31
Intervener final argument	Thursday, November 14
BC Hydro reply argument	Thursday, November 28

Figure 2. Regulatory Timetable for the BC Hydro 2024 Rate Design Proceeding

Action	Date (2024)
BC Hydro provides Notice of Application	Tuesday, July 23
BC Hydro provides confirmation to the BCUC regarding Notice of Application	Thursday, July 25
Intervener registration deadline	Thursday, August 22
BCUC Information Request (IR) No. 1 to BC Hydro	Thursday, September 5
Intervener IR No. 1 to BC Hydro	Thursday, September 12
BC Hydro responses to IR No. 1	Tuesday, October 22
BC Hydro final argument excluding net metering proposals	Thursday, November 7
Intervener final argument excluding net metering proposals	Thursday, November 28
BC Hydro reply argument excluding net metering proposals	Thursday, December 19
BC Hydro to file evidentiary update on net metering	Friday, December 20
Further process regarding net metering	To be determined

BC Hydro's Applications to the BC Utilities Commission

Distribution Extension Policy; 2024 Rate Design

Lise Townsend
Division Manager, Air Quality and Climate Action Policy

Climate Action Committee Meeting - September 5, 2024
69990561

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ABOUT THE BC UTILITIES COMMISSION (BCUC)

- Independent Provincial agency
- Regulates BC's energy utilities
- Open, transparent public proceedings
- Intervener
  - someone directly affected or that has relevant experience or information
  - Can file evidence, ask questions, file final arguments, etc.
- Transcripts and documents posted on BCUC website

WHY INTERVENE?

- BC Hydro policies & rates can support or delay progress toward regional goals (affordability, climate, growth, etc.)
- Opportunity for detailed evaluation & advocacy
- Aligns with our convening role – collaborating with others
- Consistent with previous MVRD Board direction for utility policy and planning

PREVIOUS BCUC PROCEEDINGS

FortisBC Long-Term Gas Resource Plan (LTGRP)

✓ **Broadly accepted** LTGRP
x **Rejected** minor elements

BC Hydro Integrated Resource Plan (IRP)

✓ **Accepted** IRP

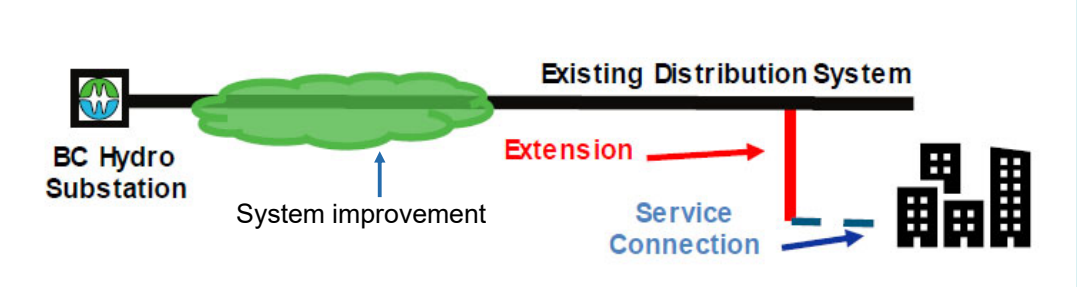
FortisBC RNG Rates

x **Denied** mandatory RNG Svc
✓ **Accepted** voluntary RNG Svc

Local Government Interveners: MVRD; Vancouver; Richmond & Lulu Is. Energy Co.; District of N. Van; District of Saanich; City of Victoria (RNG only)

Local Government Interveners had a noticeable impact on these BCUC decisions, which were generally aligned with Metro Vancouver's interests.

BC HYDRO DISTRIBUTION EXTENSION POLICY



- Objectives: improve predictability and fairness for system extensions
- Issues of interest: treatment of multiplexes; system improvement vs. extension definitions; utility system extension policy consistency

BC HYDRO 2024 RATE DESIGN

BC Hydro Proposal Addresses:

1. Residential Service Rates;
2. Net Metering Rates;
3. Non-Integrated Area Rates;
4. Electric Tariff Terms and Conditions

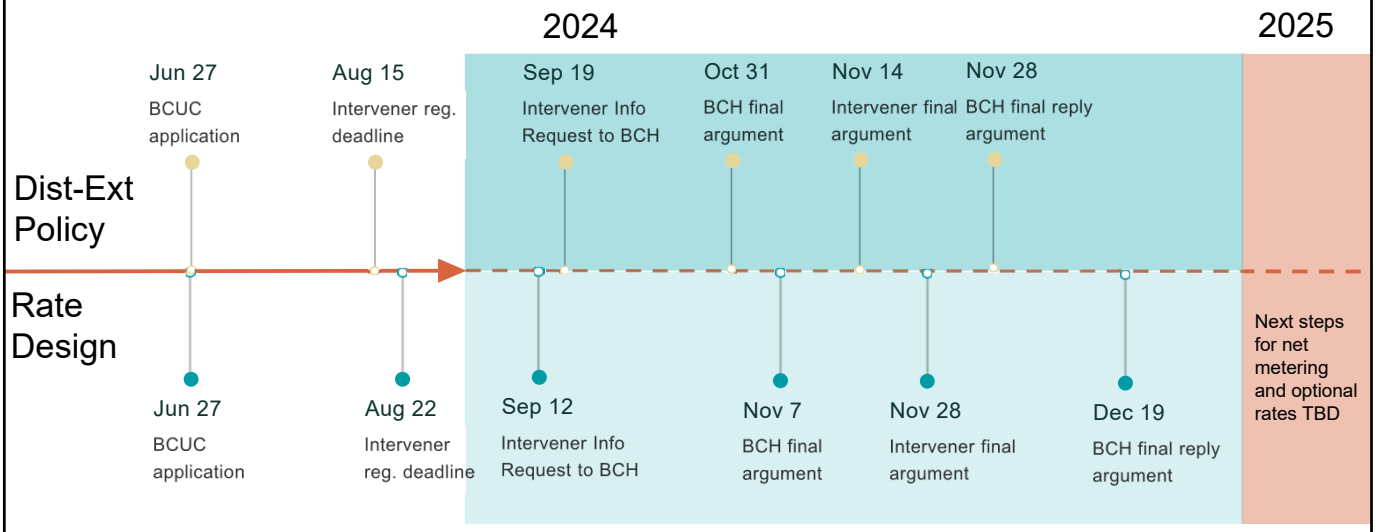
Key Proposals:

- Phase out RIB (2-tier) rate and introduce flat rate
- Eliminate MURB-specific rate
- New self-generation rates
- Optional rates TBD in future phase

- Objectives: modernize, reduce barriers to electrification, affordability
- Issues of interest: accommodation for low-income households; design of future optional rates

For both proceedings, as an intervener we will analyze and advocate for alignment with regional and members' policies (affordability, housing, climate, equity, etc.)

PROCEEDINGS TIMELINE



BCUC decisions anticipated in early 2025

QUESTIONS?

To: Climate Action Committee

From: Julie Saxton, Program Manager, Enforcement and Regulation Air Quality, Environmental Regulation and Enforcement

Date: July 12, 2024 Meeting Date: September 5, 2024

Subject: **Appointment of Enforcement Officers**

RECOMMENDATION

That the MVRD Board:

a) pursuant to the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008* and the *Environmental Management Act:*
   i. rescind the appointment of Metro Vancouver employee Dave Ferguson as an officer; and
   ii. appoint Metro Vancouver employees Loretta Tang and Sean Hronsky as officers; and

b) pursuant to section 28 of the *Offence Act* for the purpose of serving summons for alleged violations under the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008*
   i. rescind the appointment of Metro Vancouver employee Dave Ferguson; and
   ii. appoint Metro Vancouver employees Loretta Tang and Sean Hronsky.

EXECUTIVE SUMMARY

Recent changes in staffing have resulted in a need to update staff appointments as Metro Vancouver Regional District (MVRD) Board-designated officers under the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008*, the *Environmental Management Act*, and the *Offence Act*. Staffing changes are a result of recruitments for vacant positions and a retirement. Staff recommend that the MVRD Board rescind and appoint staff accordingly.

PURPOSE

To rescind and appoint Metro Vancouver employees as Board-designated officers.

BACKGROUND

Metro Vancouver's Air Quality Regulatory Program supports the goals of the *Clean Air Plan* by promoting compliance with air quality management bylaws and regulating the discharge of air contaminants.

Employment status changes for Metro Vancouver environmental regulatory staff have resulted in a need to update staff appointments to ensure appropriate authority to advance air quality management goals. Staffing changes are a result of recruitments for vacant positions and a retirement. Section 31 of the *Environmental Management Act* and the *Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008* grant authority to Board-designated officers.

ROLE OF ENFORCEMENT OFFICERS

Officers may enter property, inspect works, and obtain records and other information to promote compliance with the *Environmental Management Act* and MVRD air quality management bylaws.

The *Offence Act* allows regional districts to appoint enforcement officers for the purpose of serving summons for bylaw violations. Officers, if appointed for that purpose, may serve a summons in respect of alleged offences under MVRD air quality management bylaws.

ALTERNATIVES

1. That the MVRD Board:
   a) pursuant to the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008* and the *Environmental Management Act:*
      i. rescind the appointment of Metro Vancouver employee Dave Ferguson as an officer; and
      ii. appoint Metro Vancouver employees Loretta Tang and Sean Hronsky as officers; and
   b) pursuant to section 28 of the *Offence Act* for the purpose of serving summons for alleged violations under the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008*
      i. rescind the appointment of Metro Vancouver employee Dave Ferguson; and
      ii. appoint Metro Vancouver employees Loretta Tang and Sean Hronsky.

2. That the MVRD Board receive for information the report dated July 12, 2024, titled "Appointment of Enforcement Officers".

FINANCIAL IMPLICATIONS

There are no financial implications as the MVRD appointees are already on staff, and there are no costs associated with rescindments.

CONCLUSION

Recent changes in staffing have resulted in a need to update staff appointments as MVRD Board-designated officers under the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008*, the *Environmental Management Act*, and the *Offence Act*. Staff recommend that the MVRD Board adopt Alternative 1.

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To: Regional Planning Committee

From: Edward Nichol, Senior Planner, Regional Planning and Housing Services

Date: August 9, 2024 Meeting Date: September 6, 2024

Subject: **Metro 2050 Climate Policy Enhancement Study – Revised Recommendations**

RECOMMENDATION

That the MVRD Board direct staff to prepare a bylaw to amend *Metro 2050* for consideration based on the revised recommendations as described in Tables 1 and 2 of the report dated August 9, 2024, titled "Metro 2050 Climate Policy Enhancement Study – Revised Recommendations" to:

a) support the protection and restoration of trees and other ecosystems on lands with a non-urban regional land use designations and lands outside the Urban Containment Boundary; and
b) encourage environmental and climate change related analysis as part of appropriate *Metro 2050* amendment applications.

EXECUTIVE SUMMARY

At the May 10, 2024 Regional Planning Committee meeting, staff, as per MVRD Board direction received in early 2023, provided a report with recommendations to enhance and strengthen climate change policy in *Metro 2050*. The Regional Planning Committee and MVRD Board supported four out of the six recommended policy areas, but the Committee recommended to the Board that two of the six recommendations be referred to staff to refine the language, citing concerns of overly prescriptive requirements. The Board supported the Committee's recommendation. In response to this direction, this report provides alternative wording for the two recommended policy areas based on the feedback received from the Regional Planning Committee. If the amended wording is supported, staff will bring forward an amendment bylaw for *Metro 2050* for the six recommended policy areas for Regional Planning Committee and Board consideration.

PURPOSE

To provide the Regional Planning Committee and MVRD Board with alternative wording on two referred policy enhancement recommendations to strengthen climate change policies in *Metro 2050* for consideration and staff direction.

BACKGROUND

At its May 10, 2024 meeting, the Regional Planning Committee received a report dated March 13, 2024, titled "Metro 2050 Climate Policy Enhancement Study – Recommendations" (Reference 1), and considered the following recommendation:

> *That the MVRD Board direct staff to prepare a bylaw to amend Metro 2050 for consideration based on the following recommendations and as described in Table 2 of the report dated March 13, 2024, titled "Metro 2050 Climate Policy Enhancement Study – Recommendations" to:*
> *a) develop a revised definition for the regional Rural land use designation;*

b) encourage the protection and restoration of trees and other ecosystems on lands with a non-urban regional land use designations and lands outside the Urban Containment Boundary;
c) require environmental and climate change-related analyses as part of all Metro 2050 amendment applications;
d) encourage the development of local hazard and risk data that meets key requirements;
e) add new climate-related performance monitoring metrics; and
f) increase intersection density and permeability of the urban street grid.

The Committee passed the resolution as presented above in underline style, and referred recommendations b) and c) back to staff to consider adjustments to language, with some committee members citing concerns of overly prescriptive requirements. The matter was forwarded to the MVRD Board for consideration, and at its May 31, 2024 meeting the Board adopted the following resolution:

That the MVRD Board direct staff to prepare a bylaw to amend Metro 2050 for consideration based on the following recommendations and as described in Table 2 of the report dated March 13, 2024, titled "Metro 2050 Climate Policy Enhancement Study – Recommendations" to:
a) develop a revised definition for the regional Rural land use designation;
b) encourage the development of local hazard and risk data that meets key requirements;
c) add new climate-related performance monitoring metrics; and
d) increase intersection density and permeability of the urban street grid.

Prior to providing the Committee and Board with an amendment bylaw for *Metro 2050*, this report endeavours to respond to Committee and Board concerns for the two policy areas referred back to staff. Depending on the Board's response to this report, staff will either prepare an amendment bylaw covering four or six policy recommendations for consideration.

REVISED RECOMMENDATIONS

Based on the direction given, and the feedback received, by members of the Regional Planning Committee and MVRD Board, staff have revised the two referred recommendations to address concerns. The original and revised recommendation options are included in Tables 1 and 2 below.

Table 1: Revised Recommendation #1

Original Recommendation
Add new policies to Strategies 1.4, 2.3, and 3.1 of Metro 2050 for Metro Vancouver to work with key partners to encourage the protection and restoration of trees and other natural ecosystems on lands with a non-urban regional land use designation (i.e., Rural, Agricultural, Conservation and Recreation), and on lands outside the Urban Containment Boundary.
Revised Recommendation
*Add a new policy to **Strategy 3.2** for Metro Vancouver to work with key partners to **support** the protection and restoration of trees and other natural ecosystems on lands with a non-urban regional land use designation (i.e., Rural, Agricultural, Conservation and Recreation), and on lands*

outside the Urban Containment Boundary ***while recognizing both the need and policy intent to preserve the agricultural capability of lands with a regional Agricultural land use designation and preserve or enhance the natural ecosystems and features in these areas.***

Edits Applied to Revised Recommendation:

- *Direct the policy to Metro 2050 Strategy 3.2 (Protect, enhance, restore, and connect ecosystems);*
- *Re-frame the recommendation as a "support" action; and*
- *Recognize the need to preserve agricultural capability of lands with a regional Agricultural land use designation.*

Rationale for Recommendation:

- *Trees and other ecosystems provide important climate-related ecosystem services by storing carbon, providing shading and cooling, and absorbing stormwater runoff;*
- *Metro 2050 contains a target for tree canopy cover within the Urban Containment Boundary but not for lands outside the UCB;*
- *Metro 2050 includes an ecosystem protection target for 50% of the region's total land base;*
- *Agricultural, Rural, and Conservation and Recreation designated lands provide opportunities to protect natural ecosystems and increase tree canopy cover - this will be essential to supporting Metro 2050's 50% protected areas target;*
- *70% of Sensitive and Modified Ecosystem loss between 2014 and 2020 occurred within the Agricultural, Conservation and Recreation, and Rural regional land use designations; and 71% of Sensitive and Modified Ecosystem loss between 2014 and 2020 occurred on lands outside the Urban Containment Boundary.*

Table 2: Revised Recommendation #2

Original Recommendation
Add a new policy to Section F of Metro 2050 requiring Metro Vancouver and member jurisdictions to include additional climate-focused analysis in Metro 2050 amendment applications. This would be implemented by a) requiring Metro Vancouver to work with member jurisdictions to provide relevant environmental and climate change data and analysis, and b) requiring member jurisdictions to demonstrate that the proposed amendment does not conflict with applicable commitments in OCPs / accepted Regional Context Statements pertaining to the following topic areas: • *Carbon storage levels in natural areas;* • *Tree canopy cover;* • *Impervious surfaces;* • *Ecosystem protection, including Sensitive and Modified Ecosystems;* • *Agricultural land; and* • *Green infrastructure and ecosystem connectivity.*

Revised Recommendation
*Add a new policy to Section F of Metro 2050 for member jurisdictions and Metro Vancouver to **include / consider** climate-focused issues in Metro 2050 amendment applications, **where applicable**. This would be implemented collaboratively by a) **~~requiring~~** Metro Vancouver providing relevant **and up-to-date** environmental and climate change data and analysis and, **b) the member jurisdiction proposing the amendment including information / commentary that demonstrates how the amendment aligns with applicable policies in their accepted Regional Context Statements pertaining to topic areas such as**:* • *Carbon storage levels in natural areas;* • *Tree canopy cover;* • *Impervious surfaces;* • *Ecosystem protection, including Sensitive and Modified Ecosystems;* • *Agricultural land; and/or* • *Green infrastructure and ecosystem connectivity.*
Edits Applied to Revised Recommendation: • *Re-frame to consider climate-focused issues, where applicable (rather than require);* • *Revise to reference Regional Context Statements only; and* • *Revise to suggest climate-focused topic areas for consideration (rather than including the topic areas as an exhaustive/prescriptive list).* *Rationale for Recommendation:* • *Metro 2050 Policy action 3.2.2 a) establishes Metro Vancouver's role to collect and report on the gains and losses for relevant environmental data;* • *Metro 2050 Policy action 3.2.7 requires member jurisdictions to report on tree canopy cover, protected areas, and sensitive ecosystems in Regional Context Statements;* • *Will provide consistent messaging for member jurisdictions, landowners / developers, First Nations, and agency partners to improve transparency for amendment requests and reinforce the connection between local planning and regional climate action targets;* • *Would contribute towards Action 3.3 of the MVRD Board-endorsed Climate 2050 Nature and Ecosystems Roadmap and Action 1.7 of the MVRD Board-endorsed Climate 2050 Agriculture Roadmap;* • *Would contribute towards Strategy 2.2 of the MVRD Board-adopted Ecological Health Framework; and* • *Would support Metro 2050 performance monitoring.*

NEXT STEPS

If the Board chooses Alternative 1, staff will add the two revised recommendations to the four policy recommendations previously supported by the Regional Planning Committee and MVRD Board (at the May 10 and May 30, 2024 meetings, respectively), and prepare a *Metro 2050* amendment bylaw for Regional Planning Committee and MVRD Board consideration.

If the Board chooses Alternative 2, staff will prepare a *Metro 2050* amendment bylaw responding to the four policy areas endorsed in May 2024, and will not include the two policy areas considered in this report.

ALTERNATIVES

1. That the MVRD Board direct staff to prepare a bylaw to amend *Metro 2050* for consideration based on the revised recommendations as described in Tables 1 and 2 of the report dated August 9, 2024, titled "Metro 2050 Climate Policy Enhancement Study – Revised Recommendations" to:
   a) support the protection and restoration of trees and other ecosystems on lands with a non-urban regional land use designations and lands outside the Urban Containment Boundary; and
   b) encourage environmental and climate change related analysis as part of appropriate *Metro 2050* amendment applications.

2. That the MVRD Board receive for information the report dated August 9, 2024 titled "Metro 2050 Climate Policy Enhancement Study – Revised Recommendations" and direct staff to prepare a bylaw to amend *Metro 2050* for consideration based only on the four previously endorsed recommendations received during the May 31, 2024 MVRD Board meeting.

3. That the MVRD Board receive for information the report dated August 9, 2024 titled "Metro 2050 Climate Policy Enhancement Study – Revised Recommendations".

FINANCIAL IMPLICATIONS

There are no financial implications associated with this report. All work was developed internally within the Regional Planning 2023 and 2024 work program.

CONCLUSION

The Regional Planning Committee considered a report at its May 10, 2024 meeting with recommendations to enhance and strengthen climate change policies in *Metro 2050*, as per MVRD Board direction given in early 2023. Two of the six recommended policy areas were referred back to staff to consider alternative language. In response to this direction, this report provides alternative wording for the two recommendations for Regional Planning Committee and MVRD Board consideration, and seeks direction to prepare a bylaw to amend *Metro 2050* accordingly for future consideration by the Board.

REFERENCES

1. *Metro 2050* Climate Policy Enhancement Study - Recommendations

68584382

To: Regional Planning Committee

From: Victor Cheung, Regional Planner, Regional Planning and Housing Services

Date: August 13, 2024 Meeting Date: September 6, 2024

Subject: **Metro 2050 Regional Context Statement – Village of Belcarra**

RECOMMENDATION

That MVRD Board accept the Village of Belcarra Regional Context Statement as submitted to Metro Vancouver on June 12, 2024.

EXECUTIVE SUMMARY

The Village of Belcarra has completed an update to its Official Community Plan (OCP) and submitted a revised Regional Context Statement that shows how the new OCP is generally consistent with the regional federation's goals, strategies and actions as laid out in *Metro 2050.* The MVRD Board considers acceptance of Regional Context Statements to ensure that local aspirations, as expressed in OCPs, align with the regional growth strategy.

Staff have reviewed the Village of Belcarra's Regional Context Statement relative to *Metro 2050*'s goals, strategies and policy actions, and have assessed it to be generally consistent. Village staff have submitted a revised regional land use designation map that forms part of the Regional Context Statement that address regional land use designation discrepancies identified during staff's review. With this revised map, it is recommended that the Board accept the Village of Belcarra's Regional Context Statement.

PURPOSE

To provide the Regional Planning Committee and MVRD Board with the opportunity to consider acceptance of the Village of Belcarra's Regional Context Statement.

BACKGROUND

On February 24, 2023, the MVRD Board adopted *Metro 2050*. Pursuant to section 446(2) of the *Local Government Act* (Reference 1), each member jurisdictions must submit a Regional Context Statement within two years of the adoption of the new regional growth strategy.

The Village of Belcarra's Regional Context Statement (Attachment 1) was received by Metro Vancouver on June 12, 2024, for consideration of acceptance by the MVRD Board. As per section 448 of the *Local Government Act*, Metro Vancouver must either accept or not accept the Regional Context Statement within 120 days of receipt or it is deemed to have accepted the Regional Context Statement as submitted. Following acceptance by the Board, the member jurisdiction can then give final reading to adopt the Official Community Plan (OCP) bylaw, which includes the Regional Context Statement. The Village of Belcarra's OCP is provided in Reference 2.

REGIONAL CONTEXT STATEMENT ANALYSIS

As per the *Local Government Act*, a Regional Context Statement identifies the alignment between the municipality's OCP and the regional growth strategy and, if applicable, explains how the OCP is consistent or will be made consistent with the regional growth strategy over time. Staff have undertaken a review of the Village of Belcarra's proposed Regional Context Statement relative to *Metro 2050*'s goals, strategies, and policy actions. A summary of the analysis organized by *Metro 2050* targets and goal areas is provided below.

Metro 2050 Targets

The Village of Belcarra's Regional Context Statement outlines relevant OCP policies and supplementary information that demonstrate how the Regional Context Statement will meet the regional targets set out in *Metro 2050*. Specifically:

- *Metro 2050* Policy 3.2.7 a) establishes a regional target for increasing the area of lands protected for nature from 40% to 50% by the year 2050, understanding that each member jurisdiction's individual contribution toward this overall regional target will be different based on local context. 69% of the Village of Belcarra's land base is regional or provincial park and conservation lands. The Village's Regional Context Statement also notes that the current tree canopy coverage is 94% and will continue to be maintained through buffer policies between Rural and protected areas.

- *Metro 2050* Policy 3.3.7 a) targets greenhouse gas emissions reductions of 45% below 2010 levels by the year 2030 and achieving a carbon neutral region by the year 2050. The Village of Belcarra's OCP includes equivalent policies that aim to reduce community-wide emissions by 45% below 2010 levels by 2030 and to zero net emissions by 2050.

Not all *Metro 2050* targets will be relevant to the Village, given that the total land area is 5.5 square kilometres, of which only 30% is developable. The Village has also seen minimal population growth over the last 10 years, with an overall population increase of 44 residents between 2016 and 2021, and a total population of 670 residents in 2020. The only regional land use designations present in the Village are Rural and Conservation and Recreation, limiting the applicability of targets related to other *Metro 2050* policies.

Goal 1: Create a Compact Urban Area

Goal 1 is intended to contain growth within the Urban Containment Boundary and to direct that growth to Urban Centres, and along transit corridors, within which are a variety of complete communities with access to a range of housing choices, employment opportunities, amenities and services.

The Village of Belcarra's OCP supports this goal through the following:

- The Village is designated "Rural" in *Metro 2050*, is outside of the Urban Containment Boundary, and has no commercial or multi-unit land to develop a village centre. It is almost exclusively developed as single-detached homes surrounded by provincial and regional park land.

- The Village is not located in the regional sewage network and its inclusion is not anticipated to be within the timeframe of the OCP, limiting future development. This is consistent with the Rural regional land use designation.
- The OCP contains policies to improve local trails and recreation facilities, pursue net ecosystem gains (instead of no net loss) when developing infrastructure, and review zoning and subdivision requirements to provide additional rental housing opportunities. Among others, these policies support *Metro 2050 Strategy 1.3: Develop resilient, healthy, connected, and complete communities with a range of services and amenities.*
- The OCP supports *Metro 2050 Strategy 1.4: Protect Rural lands from urban development* by including policies that maintain the semi-rural nature of the community while considering gentle density in the central part of the Village where water and transit services exist. The stated intent is for the Village to remain a primarily low-density residential community.

Goal 2: Support a Sustainable Economy
Goal 2 is intended to protect and optimize the land use and transportation systems required to ensure the viability of business sectors by supporting regional employment and economic growth. In this context, *Metro 2050* is committed to the long-term protection of Industrial, Employment, and Agricultural lands. Goal 2 is generally not applicable to the Village of Belcarra given the Village's small population and rural nature.

Goal 3: Protect the Environment, Address Climate Change, and Respond to Natural Hazards
Goal 3 recognizes that the region's vital ecosystems provide essential services. Goal 3 includes strategies to protect Conservation and Recreation lands, and to promote a connected network of ecosystems and other green spaces to enhance physical and mental health, supports biodiversity, and increases community resilience.

The Village of Belcarra's OCP supports this goal through the following:
- Advocates for the preservation of Conservation and Recreation lands, which are mostly regional, provincial parks, and Crown Land;
- Includes policies that would maintain the existing high (94%) tree canopy cover within the Village; and
- Promotes the use of multi-modal transportation and the conversion to low emission fleet vehicles, and by exploring zoning bylaw amendments to promote more local trips through a greater diversity of local uses.

Goal 4: Provide Diverse and Affordable Housing Choices
Goal 4 envisions a region 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, with a focus on increasing the supply of purpose-built rental housing in proximity to transit.

The Village of Belcarra's OCP supports this goal through the following:
- Includes a policy to review the zoning bylaw and subdivision requirements to create a greater diversity of housing;

- Includes policies that allow for additional secondary suites and coach houses on larger lots, duplex, triplex or fourplex development, and some consolidation of smaller lots and higher density developments under specific conditions; and
- Includes a policy to initiate negotiations between various regional, provincial, and First Nation authorities with the goal of identifying suitable Crown lands for future residential development.

Goal 5: Support Sustainable Transportation Choices
Goal 5 promotes compact, transit-oriented urban forms supported by a range of sustainable transportation choices. This pattern of development expands the opportunities for active transportation, facilitates GHG emissions reduction, and leads to improved air quality.

The Village of Belcarra's OCP supports this goal through the following:

- Includes policies that encourage a greater share of trips by transit, shared mobility options, cycling, walking, and rolling.

Regional Land Use Designation Map in the Regional Context Statement
In reviewing the *Figure 6 Metro Vancouver 2050 Land Use Designation* map that forms part of the Regional Context Statement, Metro Vancouver and Village staff identified some inconsistencies in the designations for some parcels. In most cases, these inconsistencies date back to 2011 when the Board adopted *Metro Vancouver 2040: Shaping our Future*, the previous regional growth strategy, and accepted the Village of Belcarra's Regional Context Statement at that time (see Reference 2). To resolve these inconsistencies, Village staff have submitted a revised *Figure 6 Metro Vancouver 2050 Land Use Designation* map (Attachment 2) that is in line with *Metro 2050* regional land use designations.

In the case of eight parcels, Metro Vancouver staff have identified the need to do a future housekeeping amendment to *Metro 2050* to reflect the appropriate regional land use designations, specifically:

- Five parcels that are currently designated Conservation and Recreation in *Metro 2050* should be designated Rural based on the Board-accepted 2011 Belcarra Regional Context Statement. These parcels are designated Residential in the Village of Belcarra OCP;
- Two parcels currently designated as Rural in *Metro 2050* should be designated as Conservation and Recreation as they are part of the Say Nuth Khaw Yum [aka Indian Arm] Provincial Park; and
- One parcel that has no regional land use designation should be designated Rural.

A list and map of these parcels is provided in Attachment 3.

Village of Belcarra staff confirmed they will adopt the revised Figure 6 map (Attachment 2) as part of their OCP. The Village's revised map and the future *Metro 2050* housekeeping amendment will ensure the Village's OCP and *Metro 2050* maps are fully consistent. These amendments are consistent with *Metro 2050*'s goals and strategies, and do not alter the intent of *Metro 2050*.

ALTERNATIVES

1. That MVRD Board accept the Village of Belcarra's Regional Context Statement as submitted to Metro Vancouver on June 12, 2024.

2. That the MVRD Board not accept the Village of Belcarra's Regional Context Statement as submitted to Metro Vancouver on June 12, 2024, indicating the provisions to which the Board objects and the reasons for objection, and request the Village of Belcarra amend its Regional Context Statement and resubmit the revised Regional Context Statement to the Board for consideration.

FINANCIAL IMPLICATIONS

If the Board chooses Alternative 1, Metro Vancouver would accept the Village's Regional Context Statement as submitted. If the Board chooses Alternative 2, as per section 448 of the *Local Government Act*, the Board would need to indicate the provisions to which it objects and the reasons for objection, and request that the Village amend its Regional Context Statement and resubmit it to the Board for consideration. This course of action may lead to a dispute resolution process. The cost for this dispute resolution would depend on the process and is prescribed based on the proportion of assessed land values. Metro Vancouver would be responsible for most of the costs.

CONCLUSION

The Village of Belcarra has updated its Regional Context Statement and submitted it to Metro Vancouver for consideration. Metro Vancouver has conducted a review of the Regional Context Statement and recommends acceptance based on it being consistent with *Metro 2050*. Staff recommend Alternative 1.

ATTACHMENTS

1. Regional Context Statement (Appendix B) – Village of Belcarra Official Community Plan Bylaw No. 621, 2024
2. Revised Figure 6 Metro Vancouver 2050 Land Use Designation map – Village of Belcarra OCP Regional Context Statement
3. Table and map showing current and proposed Metro 2050 Regional Land Use Designations

REFERENCES

1. *Local Government Act* – Regional Context Statements
2. Village of Belcarra Official Community Plan Bylaw No. 621, 2024
3. Village of Belcarra Regional Context Statement (Accepted July 29, 2011)

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Appendix B

Metro 2050
Regional Context Statement

METRO 2050 REGIONAL CONTEXT STATEMENT

Metro 2050 Targets

In the following section please outline the Official Community Plan policies (or equivalent) that demonstrate your member jurisdiction's contribution to reaching the regional federation's regional growth strategy targets. Please also provide supplementary information on how these policies, along with any other applicable plans or strategies, will work together to contribute to meeting these regional targets. For the environmental and housing targets, Metro 2050 recognizes that the targets are regional in scale and long term to the year 2050; member jurisdiction local context is expected.

Metro 2050 Regional Targets		
Goal 1 Create a Compact Urban Area Targets		
Policy with Target	**Applicable OCP Policies**	**Supplementary Information**
1.1.9 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**	N/A Belcarra is designated RURAL and has only residential, Civic Institutional and Conservation/Recreation land uses. See OCP Figure 9- OCP Land Use Designation Map.	*Without securing additional land for residential development from the Crown or through resident initiatives to subdivide existing lots it is unlikely the Village will be able to meet its projected 1% per year growth rate of 86 net new dwelling units through to 2050.*
1.2.24 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) Regional Targets for Residential Growth by Location: • **All Urban Centre Types: 40%** • **Frequent Transit Development Areas: 28%** Regional Targets for Employment Growth by Location: • **All Urban Centre Types: 50%** • **Frequent Transit Development Areas: 27%**	*See Tables 1 and 2 of OCP*	*Population targets may be met or exceeded as older population age out of community and larger household families move in.* *Any employment projection is based on expansion of home-based businesses, continuing work from home employment opportunities and the aspiration to have a neighbourhood café/corner convenience store*
1.2.24 b) ii) include policies and actions for Urban Centres and	*N/A*	

Frequent Transit Development Areas that: **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 *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****.*	*See above*	*Population growth in Belcarra is not expected to be a significant portion of the 2% growth projected for the Rural areas. The HNA projected the need for 87 units over the next 27 years*

Goal 3 Protect the Environment, Address Climate Change, and Respond to Natural Hazards Targets

Policy with Target	Applicable OCP Policies	Supplementary Information
3.2.7 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: • increase the area of lands protected for nature **from 40% to 50% of the region's land base by the year 2050**; and • increase the total regional tree canopy cover within the Urban Containment Boundary **from 32% to 40% by the year 2050.**	*Belcarra is 69% regional and provincial park and conservation lands. The tree canopy is 94%.* ***Policy NE5 + 6*** *will protect and enhance these areas by buffering them from adjacent Rural uses (housing + civic uses)* *N/A*	.
3.3.7 a) identify how local land use and transportation policies will contribute to meeting the **regional greenhouse gas**	***Policy CC3 NE32+33*** *Promote non-vehicular uses and advocates for additional transit service.* ***Policy NE***	

emission reduction target of 45% below 2010 levels by the year 2030 and **achieving a carbon neutral region by the year 2050**;	***34*** *will reduce municipal emissions.* ***Policies CC1 to 12***	

Goal 4 Provide Diverse and Affordable Housing Choices Target

Policy with Target	Applicable OCP Policies	Supplementary Information
4.2.7 a) indicate how you will, within the 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)	**N/A**. Belcarra is in neither of these areas however **it** will review its Zoning Bylaw with the intention of making changes to allow more secondary suites, coach houses and low-density multi-unit development where septic and water provisions are available to meet rental, affordability and other community housing needs**.**	Zoning Bylaw reviewed in 2018 Housing Needs Report completed in 2021

Metro 2050 Goal 1: Create a Compact Urban Area

Describe how the OCP and other supporting plans and policies contribute to this Goal:

Village of Belcarra is designated "Rural" in Metro 2050 and has no commercial or multi-unit land to develop a village centre. It is almost exclusively developed as single-family homes on large lots and is surrounded by provincial and regional park land. Development is limited by absence of sewer service and limited volumes of fresh water. The OCP seeks to reduce residents' need to travel by vehicles out of the community for all goods and services by proposing to allow home based retail sales and to provide a broader range of housing types by adjusting the Zoning and Subdivision requirements to provide more secondary suites, coach houses, duplex, triplex and fourplex where servicing requirements can be met. Future residential development will require resolution of entitlements with respect to identified Crown Lands and the establishment of legal road access to Farrer Cove. Some subdivision of larger lots in other parts of Belcarra may also occur in order to support meeting goals to increase affordable, rental and seniors housing opportunities while still maintaining the rural character of the Village.

Goal 1 Targets

Policy with Target	Applicable OCP Policies	Supplementary Information
1.1.9 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**	*See response above*	*The figures provided for population, dwelling unit and employment are based on a projection of a 1% annual growth rate. Population may increase more rapidly as empty nesters age out of the community and families with children replace those 1 and 2 person households*

1.2.24 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) Regional Targets for Residential Growth by Location: • **All Urban Centre Types: 40%** • **Frequent Transit Development Areas: 28%** Regional Targets for Employment Growth by Location: • **All Urban Centre Types: 50%** • **Frequent Transit Development Areas: 27%**	*N/A*	*Population growth in Belcarra is not expected to be a significant portion of the 2% growth projected for the Rural areas. Total population growth expected is 213 in next 30 years* *The HNA projected the need for 87 units over the next 30 years*
1.2.24 b) ii) include policies and actions for Urban Centres and Frequent Transit Development Areas that: **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 *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*	*N/A*	*Population growth in Belcarra is not expected to be a significant portion of the 2% growth projected for the Rural*

c) ***focus 28% of the region's dwelling unit growth and 27% of the region's employment growth to Frequent Transit Development Areas***.		*areas. Total growth expected is 213 in next 30 years* *The HNA projected the need for 87 units over the next 30 years*

Strategy 1.1: Contain urban development within the Urban Containment Boundary

	Section	Policy	Applicable OCP Policies
Policy 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)	Village of Belcarra is not within the Urban Containment Boundary
	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	*See response in Targets section*
	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	The Village is not on the regional sewage network and is not scheduled to be within the timeframe of this OCP. The Village has its own water service with capacity to accommodate future growth projected. Other residential growth will be dependant on private wells and watercourses. Any new development will require approval by Fraser Health Authority for septic service.
	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	N/A

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

	Section	Policy	Applicable OCP Policies
Policy 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)	*See response in Targets section*

	b)	include policies and actions for Urban Centres and Frequent Transit Development Areas that:	N/A
	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	N/A
	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	*See response in Targets section*
	iii)	encourage office development to locate in Urban Centres through policies, economic development programs, or other financial incentives	N/A
	iv)	support modal shift by establishing or maintaining reduced residential and commercial parking requirements in Urban Centres and FTDAs and consider the use of parking maximums	N/A
	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)	N/A
	vi)	consider support for the provision of child care spaces in Urban Centres and Frequent Transit Development Areas	N/A
	vii)	consider the implementation of green infrastructure	N/A
	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	N/A
	ix)	support the provision of community services and spaces for non-profit organizations	N/A
	x)	consider, where Urban Centres and Frequent Transit Development Areas overlap with Employment lands, higher density forms and intensification of commercial and light industrial	N/A
	xi)	take appropriate steps to avoid or mitigate the negative health impacts of busy roadways on new or redeveloped residential areas	N/A
	c)	Include policies for General Urban lands that:	N/A

	i)	identify General Urban lands and their boundaries on a map generally consistent with Map 2	N/A
	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	N/A
	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;	N/A
	iv)	encourage neighbourhood-serving commercial uses	N/A
	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	N/A
	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	N/A
	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	N/A

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

	Section	Policy	Applicable OCP Policies
Policy 1.3.7	**Adopt Regional Context Statements that:**		
	a)	support compact, mixed use, transit, walking, cycling and rolling-oriented communities	**Policies M1-7** and **NE12** speak to efforts to map, expand, maintain and improve local trails and to encourage others to improve end-of-trip facilities for park users. **Policy HCLU 21** connect these local trails to the Regional Park Plan(2022) and the Regional Greenways 2050 network and. **Policies M9, 10, 22 + 23** direct improvements to be made on local streets to improve pedestrian and rolling uses safety

	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	**Policies HCLU 16-20** support a study to identify viable retail opportunities to reduce local travel and better serve regional park visitors. They also recommend reviewing the Zoning Bylaw to consider allowing home-based retail businesses.
	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	**Policy HCLU 26** provides for the renovation of the existing sports court and **Policy HCLU 11 +24** would provide for a new park area and equipment if a subdivision master plan for Farrer Cove is undertaken by local owners in the future.
	d)	respond to health and climate change-related risks by providing equitable access to:	**Policy HCLU 26** see above
	i)	recreation facilities	**Policy HCLU 26** Restores sports court in disrepair.
	ii)	green spaces and public spaces (e.g., parks, trails, urban forests, public squares, etc.)	**Policy NE7** direct actions to pursue net ecosystem gains (instead of no net loss) when developing infrastructure in regional conservation and recreation area, **Polices NE19-22** direct the partnership and development of an Invasive Species Management Plan. **Policies NE24+25** express support of programs and initiatives to become a "Bear Smart" community while **Policies NE26-28** an**d NE29** express support for protecting the rough-skinned newt and improving water quality and shorelines of Bedwell Bay. **Policies HCLU 8, 13, 14 and 23** provide Council the option to determine whether to accept land or payment-in-lieu as a means to obtain a new park space if a subdivision master plan is created to guide future development of Farrer Cove should legal road access be created by the residents.
	iii)	safe and inviting walking, cycling, and rolling environments, including resting spaces with tree canopy coverage, for all ages and abilities	**Policies M 1- 7** speak to efforts to map, expand, maintain and improve local trails while

			Policies M 9-10 incorporate universal access design and trail integration considerations in road works. **Policies M 39 + 40** support others to improve activities and food options in the regional park. **Policy HCLU 22**directs efforts to connect local pathways and trails to the regional network.
	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	**Policy HCLU 26** Refresh sports courts and consider adding seating, community gardening boxes and new sport activities such as a horseshoe pitch or bocce court.
	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	**Policies HCLU 2-7** direct the review of zoning and subdivision requirements to provide additional rental stock in secondary suites and coach houses, smaller lot sizes and house sizes, to consider multi-units on larger serviced lots and to develop new low density multi-dwelling design guidelines that preserve the Village's semi-rural character. **Policies HCLU 13, 14 + 24** are designed to work together to provide a new park space in Farrer Cove if residents work together to develop a Subdivision Master Plan if legal road access is established.
	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	**Policies HCLU 11 and HCLU 3 + M 9** provide opportunities to improve accessibility and social connections through subdivision master planning and incorporation of universal design principles in housing and mobility developments..
	h)	consider where appropriate, opportunities to incorporate recognition of Indigenous and other cultures into the planning of Urban Centres, FTDAs, and other local centres	**Policies NE 3, 8, 15 + 28** and **HCLU 29** identify opportunities to collaborate with or support Tsleil-Waututh stewardship initiatives. **Policy HCLU 21** recognizes the Tsleil-Waututh rights to the Crown Lands that form the Village's residential land bank. **Policies CCR1-4**

			reflect Council's commitment to strengthen relationships, develop protocols to improve communications (especially in relation to land use and the inclusion of way-finding projects and recognition of places of cultural and historical significance) and to refer OCP and major land use and development proposals for consultation and review by the Tsleil-Waututh.

Strategy 1.4: Protect Rural lands from urban development

	Section	Policy	Applicable OCP Policies
Policy 1.4.3	**Adopt Regional Context Statements that:**		
	a)	identify Rural lands and their boundaries on a map generally consistent with Map 2	See Figure 6: Metro Vancouver 2050 Land Use Designations
	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	**Policies FS 16-19** recognizes that all development requires sewage disposal permits and approval of an adequate source of fresh water from the health authorities. **Policies HCLU 1-7** set out housing policies that are in keeping with the semi-rural nature of the community while at the same time addressing current housing needs
	c)	specify the allowable density and form, consistent with Action 1.4.1, for land uses within the Rural regional land use designation	**Policies HCLU 4 to 7** make provisions for the review of the Zoning Bylaw and the consideration of additional secondary suites and coach houses and some limited opportunities for multi-unit developments where community housing needs are met and the designs fit with the character of the community.
	d)	prioritize and support agricultural uses within the Agricultural Land Reserve, and where appropriate, support agricultural uses outside of the Agricultural Land Reserve	N/A
	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	The parts of Belcarra identified on this map of Environmentally Sensitive Areas are either regional or provincial parks. OCP **Policies HCLU 21, and 29**

			to 37 propose to collaborate with the Tsleil-Waututh, Port Authority, regional and provincial park authorities in the management and development of these places.

Metro 2050 Goal 2: Support a Sustainable Economy

Describe how the OCP and other supporting plans and policies contribute to this Goal:

Belcarra's OCP recognizes that creating even one viable commercial stand-alone business may not be possible given the Village's small population. It also recognizes that the all employment (other than self -employment), social, educational and retail service needs require local residents to travel by vehicle (primarily) outside of the community to get them. Policies HCLU 16 to 18 provide for a commercial viability assessment to determine what, if any retail service might be financially viable, to update the Zoning Bylaw to establish a commercial zoning schedule and to review and amend the definition of "home based business" to consider allowing retail uses, more employees and larger spaces for employment activities within the single-family residential unit.

Strategy 2.1 Promote land development patterns that support a diverse regional economy and employment opportunities close to where people live

	Section	Policy	Applicable OCP Policies
Policy 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	N/A
	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	N/A
	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	N/A

Strategy 2.2 Protect the supply and enhance the efficient use of industrial land

	Section	Policy Text	Applicable OCP Policies
Policy 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	N/A. There are no Industrial or Employment Lands designated in Belcarra.

	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	N/A
	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	N/A
	ii)	support appropriate and related accessory uses, such as limited-scale ancillary commercial spaces, and caretaker units	N/A
	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	N/A
	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	N/A
	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	N/A
	vi)	explore municipal industrial strategies or initiatives that support economic growth objectives with linkages to land use planning	N/A
	vii)	provide infrastructure and services in support of existing and expanding industrial activities	N/A
	viii)	support the unique locational and infrastructure needs of rail-oriented, waterfront, and trade-oriented industrial uses	N/A
	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	N/A
	x)	do not permit strata and/or small lot subdivisions on identified Trade-Oriented lands	N/A

	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	N/A
	ii)	allow large and medium format retail, where appropriate, provided that such development will not undermine the broad objectives of the regional growth strategy	N/A
	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	N/A
	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	N/A
	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 m 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.	N/A
	e)	include policies to assist existing and new businesses in reducing their greenhouse gas emissions, maximizing energy efficiency, and mitigating impacts on ecosystems	NA
	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)	N/A
Strategy 2.3 Protect the supply of agricultural land and strengthen agricultural viability			
Polic	**Section**	**Policy**	**Applicable OCP Policies**
	Adopt Regional Context Statements that:		

	a)	specify the Agricultural lands within their juris- diction, denoting those within the Agricultural Land Reserve, on a map generally consistent with Map 8	N/A. There are no Agricultural lands in Belcarra
	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	N/A
	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	N/A
	ii)	encourage the consolidation of small parcels and discourage the subdivision and fragmentation of agricultural land	N/A
	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 collabo- ration with other governments and agencies	N/A
	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	N/A
	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*	N/A
	vi)	align policies and regulations, where applicable, with the Minister's Bylaw Standards and Agricultural Land Commission legislation and regulations	N/A
Po	**Section**	**Policy**	**Supplementary Information**

		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	N/A

Metro 2050 Goal 3: Protect the Environment, Address Climate Change, and Respond to Natural Hazards

Describe how the OCP and other supporting plans and policies contribute to this Goal:

It should be noted that all lands designated Conservation/Recreation in the Metro 2050 RGS are either in the regional or provincial parks or are Crown Lands. Village policies will not apply directly to those lands. Belcarra has about 95% tree coverage overall. Additional residential development is limited and should not affect the future tree canopy significantly with careful siting of new development and replanting of landscaping..

Goal 3 Targets

Policy with Target	Applicable OCP Policies	Supplementary Information
3.2.7 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: • increase the area of lands protected for nature **from 40% to 50% of the region's land base by the year 2050**; and • increase the total regional tree canopy cover within the Urban Containment Boundary **from 32% to 40% by the year 2050.**	***Policies NE 1-7*** *supports VFPA and Tsleil-Waututh Nation's efforts to protect local eelgrass beds and riparian, marine and estuarine environments..* ***Policies NE 10 + 11*** *supports other jurisdictions' efforts to increase regional park land while* ***Policies NE17 +18*** *outline Village policy on municipal and private property regarding tree retention.* *Policy HL 4 considers development of an Interface Wildfire DPA to protect the community from wildfires* ***Policies HL 11 -17*** *outline protective measures to be taken or recommended to protect both residential and park areas from forest fires, slope stability, soil erosion and other natural hazards.*	

3.3.7 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;	***Policies NE 7 + 13*** *reflect a philosophical change in approach to the relationship between the environment and development. These policy statements direct new development to strive to improve the environment not just mitigate so there is no net loss to the environment.* ***Policies NE 32-34*** *direct Council to promote active transportation measures, advocate for additional public transit service to regional and provincial parks and to reduce vehicle emissions from municipal vehicles and equipment.* ***Policies CC 1-12*** *direct Council to uphold their commitment to the BC Climate Action Charter and to develop a Climate Action Plan, to require GHG reductions new buildings and those undergoing significant renovation, to continue requiring demolition waste to be diverted from landfill.* ***Policies CC 14*** *directs work to connect Belcarra with the Regional Greenway 2050 Plan while* ***Policies CC 17, 19 and 22*** *encourages bike parking and charging points in parks and at Village Hall, new development to include low impact alternative/renewable energy sources and adopts a "Green Procurement" policy for civic purchases.* **Policies M 1- 7** speak to efforts to map, expand, maintain and improve local trails while **Policies M 9-10** incorporate universal access design and trail integration considerations in road works. **Policies M31 -35 and M37** advocate MV develop a "Visitor Use Management Strategy" to better manage parking and traffic issues at the regional park and collaborate with stakeholders to do the same at the provincial park. They also continue to restrict by regional park	*By far the largest source of GHG emissions from transportation sources is from visitors to the regional and provincial parks.* *However, the 700 local residents are also major contributors as they must leave the community for almost all goods and services they require.* *The third source of GHG's in the community is from the preponderance of very large single-family homes. Current Zoning allows for single family homes of between 5400 square feet and 9200 square feet plus any part of the basement more than 4 feet below ground.*

	visitors to outside the residential areas of the Village. **Policies M41 -43** provides support for prioritizing rideshare, transit and bicycle access to the regional park. **Policies HCLU 4, 5,6** make provisions for the review of the Zoning Bylaw and the consideration of additional secondary suites and coach houses, smaller lots and some limited opportunities for multi-unit developments where community housing needs are met and the designs fit with the character of the community.	

Strategy 3.1: Protect and enhance Conservation and Recreation lands

	Section	Policy	Applicable OCP Policies
Policy 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	See OCP Figure 6- Metro Vancouver 2050 Land Use Designations Map
	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	**Policy HCLU22** advocates preservation of Conservation and Recreation lands known as Parcel 48 subject to the resolution of uses permitted as noted in the Village-GVRD Agreement (1983). This is Crown land and negotiations will involve the Province, MV, and the Tsleil-Waututh.
	ii)	environmental conservation areas	
	iii)	wildlife management areas and ecological reserves	**Policy M15** designates Tum-Tunay-Whueton Drive as the only vehicle access to the regional park picnic and staging area while protecting the migration of the Rough-skinned Newt from road traffic. **Policy NE 26** supports MV's conservation efforts.
	iv)	forests	**Policy NE22** supports MV and provincial efforts to manage invasive species in C/R areas. **Policy HL 8** encourages boat access only owners to purchase portable fire pumps to reduce the risk of fires spreading

			while **Policy HL 12** directs staff to continue exploring ways to increase water storage capacity for fire fighting. **Policy HL 11** encourages MV and Port Moody to install fire hydrants along Tum-Tumay-Whueton Drive. **Policies HL 22 to 25** advocates BC Wildfire Service develop a strategy to prioritize aerial fire response for MV parks and Crown lands, continue to support the FireSmart program and develop a Wildfire Assessment and update the Community Wildfire Resilience Plan every 5 years. **Policy HL 2**8 advocates the development of a Fire and Fuel Management Plan for Crown and regional lands near Belcarra while HL4 supports the development of a Wildfire DPA permit requirement for new development..
	v)	wetlands (e.g. freshwater lakes, ponds, bogs, fens, estuarine, marine, freshwater, and intertidal ecosystems)	**Policies NE30 + 31** support local initiatives to clean up local beaches and shorelines. **Policies HCLU 29-37** provide direction to collaborate with the Tsleil-Waututh to design and install signage around Bedwell Bay, maintain the invasive species control program, prioritize planting native species and support VFPA efforts to enhance habitat and establish no-go and no-anchoring zones in Bedwell Bay.
	vi)	riparian areas (i.e. the areas and vegetation surrounding wetlands, lakes, streams, and rivers)	**Policy NE3** direct collaboration with VFPA and TWN to monitor, protect and enhance riparian, marine and estuarine environments
	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	**Policy NE2** supports protection of local eelgrass beds while **Policy NE9** supports development of "Dark Sky" policies so wildlife can retain their normal life-cycles.
	viii)	uses within those lands that are appropriately located, scaled, and consistent with the intent of the designation, including: o major parks and outdoor recreation areas; o education, research and training facilities, and associated uses that serve conservation and/or recreation users; o commercial uses, tourism activities, and public, cultural, or community amenities;	**Policy NE6** supports uses consistent with the intent of MV conservation and recreation designation while **Policy NE7** directs efforts to achieve net ecosystem gains when developing in regional conservation and recreation areas.

		o limited agricultural use, primarily soil-based; and • land management activities needed to minimize vulnerability / risk to climate change impacts	
	c)	Include policies that:	
	i)	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	**Policy NE5** protects conservation and recreation areas by buffering them from adjacent uses while **Policy NE7** directs efforts to achieve net ecosystem gains when developing in regional conservation and recreation areas. Also see **Policy NE 13 & 14**.
	ii)	encourage the consolidation of small parcels, and discourage subdivision and fragmentation of lands with a Conservation and Recreation regional land use designation.	N/A
Policy 3.2.7	**Section**	**Policy Text**	**Applicable OCP Policies**
	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	*See response in Targets section*
	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	**Policy NE 13&14** requires ecosystem restoration and improvement where possible as DP condition. **Policies NE19,20, 21,22** outline partnership and actions to manage invasive species. **Policies HCLU 12 & 15** incentivizes development of SD master plan for Farrer Cove while **Policy HCLU 24** requires the inclusion of a new neighbourhood park space in the SD master plan. **Policy HCLU 23** advocates preservation of lands designated Conservation and Recreation within the regional park subject to the resolution of uses permitted in Parcel 48 as noted in the Village-GVRD Agreement (1983)

	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	***Policies NE15 + 16*** *support research and work of MV and others to identify, protect and enhance ESA's and to update local ESA maps.*
	iii)	discourage or minimize the fragmentation of ecosystems through low impact development practices that enable ecosystem connectivity	N/A
	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.	**Policies NE23-26** outline efforts to become a "Bear Smart" community and to protect the Rough-skinned Newt. **Policy HL 1-10** outline efforts to support the FireSmart initiative, bolster local fire fighting abilities and develop a coordinated Emergency Response Plan with neighbouring municipalities. **Policy HL 11** encourages MV and Pt. Moody to install fire hydrants on Tum-Tumay-Whueton Drive **Policies HL13-21** outline requirements for development on steep slopes **Policies HL22-28** outline efforts to support development of an aerial fire response strategy and a Fire and Ruel Management Plan for MV parks and Provincial lands , undertake a Wildfire Hazard Assessment and update the Community Wildfire Resilience Plan **Policy FS 15** directs adoption of an Integrated Stormwater Management Plan
	c)	Include policies that:	
	i)	support the consideration of natural assets and ecosystem services in land use decision-making and land management practices	**Policy NE 17 -** Support the management of trees on municipal property through the Managing Trees, Views, and Landscapes Bylaw.
	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	**Policy HL 17** requires new construction to be sited to maximize retention of existing trees and groundcover

		reforestation or restoration policies, with consideration of resilience	**Policies NE 13 + 14** strive for net ecosystem gains when development occurs and **Policy NE 17** supports tree management on public land by local bylaw.
	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	**Policies NE19,20, 21,22** outline partnership and actions to manage invasive species.
	iv)	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	**Policy M5** directs collaboration with MV to implement the 2050 Greenway Vision while **Policy M10** integrates local trails with road infrastructure where possible, **Policy HCLU 22**also directs local trails to connect to the MV Regional Parks Plan (2022) and Regional Greenways 2050.
	v)	support watershed and ecosystem planning, the development and implementation of Integrated Stormwater Management Plans, and water conservation objectives.	**Policy FS 15** directs adoption of an Integrated Stormwater Management Plan **Policies FS 9-13** outline Belcarra's efforts to conserve water by monitoring consumption with the SCADA system, restricting watering and installing water meters on new construction, updating the Fees and Charges Bylaw and publishing water conservation information on the Village website.

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

	Section	Policy	Applicable OCP Policies
Policy 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	*See response in Targets section*
	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:	**Policies NE 32- 35** outline efforts to improve air quality by promoting active transportation measures, advocating for additional transit to reduce regional trips, to convert the municipal fleet vehicles and equipment to low emission and

			publishing local and regional air quality information. **Policies CC1- 12** outline efforts to develop a Climate Action Plan, to support the BC Energy Step Code, to require GHG reductions for buildings undergoing significant renovations and require demolition waste be diverted away from the landfill and to encourage recycling and salvage where possible. **Policies HCLU 4 + 16 to 20** provide direction to consider amending the Zoning Bylaw to allow more smaller scale single family and multi-family development and supporting a local serving commercial zone and change to the definition of home-based business to allow retail sales in order to mitigate the requirement of residents having to drive out of the community to obtain all goods and services **Policy CC 21** also supports amending the Zoning Bylaw to create a commercial zoning to serve the local community and reduce travel for shopping and services.
	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	**Policies CC 19-29** outline steps to be taken to encourage use of low impact alternative/renewable energy sources in new construction or significant renovations, adopt a Green Procurement policy **Policies CC 4,5,6,7**- see box above **Policy CC 12**-continue to increase energy efficiency in municipal facilities ,reducing waste and compost going to the landfill **Policies CC17 + 18** encourage installation of secure bike parking and electronic charging stations at regional park and Village Hall

	ii)	community design, infrastructure, and programs that encourage transit, cycling, rolling and walking	**Policies M1-10, 22 + 23** provide direction to map existing municipal trails, add end-of -trip facilities at the Village Hall, sports court and regional park, apply for funding for a Belcarra Active Transportation Plan, direction for transit/safety improvements and to connect to the 2050 Greenway Vision Sasamat Greenway and include universal access design in future road and trail projects. **Policies M 31, 33 + 34** encourage MV and others to develop a Visitor Use Management Strategy to address traffic, congestion and parking problems to regional and provincial parks and to increase transit service to Belcarra and the parks.
	c)	focus infrastructure and amenity investments in Urban Centres and Frequent Transit Development Areas, and at appropriate locations along Major Transit Growth Corridors	There are no Urban Centres or commercial development in the Village. A rural community.

Strategy 3.4 Advance land use, infrastructure, and human settlement patterns that improve resilience to climate change impacts and natural hazards

	Section	Policy	Applicable OCP Policies
Policy 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	**Policy FS 15** adopt an Integrated Stormwater Management Plan **Policy HL 2** promotes development of a Emergency Response Plan and **HL 12** provides direction in ways to increase water storage capacity for fire fighting, **Policies HL 13-20** provide direction for prevention of damage to the natural environment when developing on steep slopes. **Polices HL 22,23, 24 & 25** set out steps to protect regional and provincial parks from wildfires, to continue with local FireSmart initiatives and to undertake a Community Wildfire Resilience Plan. **Policy CC 2** directs development of a Climate Action Plan
	b)	include policies that discourage new development in current and future hazardous	**Policies HL 19-21** discourage new development within the 200 year

		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	floodplain of creeks draining into Indian Arm. **Policies HL 2, 4 +5** direct collaboration with the Fire Department to develop a Belcarra Emergency Response Plan, to coordinate this work with other stakeholders and to publish the Plan on the Village website.
Policy 3.4.6	**Section**	**Policy**	
		Incorporate climate change and natural hazard risk assessments into planning and location decisions for new municipal utilities, assets, operations, and community services.	Current facilities, assets and community services will meet future needs in the OCP time frame.
Policy 3.4.7	**Section**	**Policy**	
		Integrate emergency management, utility planning, and climate change adaptation principles when preparing land use plans, transportation plans, and growth management policies.	See above
Policy 3.4.8	**Section**	**Policy**	
		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.	**Policy NE 7 & 13** introduces the concept of net ecosystem gains when development occurs. **Policy HL 19** discourages new development within the 200year floodplain of local creeks and **Policy HL 20** protects new waterfront development from rising sea level. See also **Policy HL 23&24.** **Policies CC1 + 2** upholds municipal commitment to the BC Climate Action Charter and to develop a Climate Action Plan for Belcarra. **Policy CC 4** supports the BC Energy Step Code goal of reaching net zero for new construction by 2032 while **Policies CC 9** and **FS 18** encourage use of best practices for both septic and innovative sewage disposal systems.

			Policy HCLU 8 directs the use of the Parkland Acquisition Best Practices Guide in the possible development of a future park in the vicinity of Farrer Cove.

Metro 2050 Goal 4: Provide Diverse and Affordable Housing Choices

Describe how the OCP and other supporting plans and policies contribute to this Goal

Without resolution of the residential/subdivision potential of the lands in Special Study Areas 1 and 2 the Village can only meet additional housing demand by subdivision of existing developed lots. All development is limited by the ability to provide septic and water services. The community has developed on very large lots for the most part and the current Zoning Bylaw allows very large houses to be built on these lots. The Housing Needs Assessment identified the need for some smaller houses, additional rental units and some form of cluster or multi-unit housing to allow aging residents an opportunity to remain housed in the community. The OCP addresses these issues by proposing to allow additional secondary suites and additional coach houses on larger lots, some duplex, triplex or fourplex development and some consolidation of smaller lots and higher density if a seniors independent living type of multi-unit development could be achieved.

Goal 4 Targets

Policy with Target	Applicable OCP Policies	Supplementary Information
4.2.7 a) indicate how, within the 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)	N/A	

Strategy 4.1 Expand the supply and diversity of housing to meet a variety of needs

Policy	Section	Policy	Applicable OCP Policies
	Adopt Regional Context Statements that:		
	a)	indicate how you will work towards meeting	**Policy HCLU 2** directs a review of the Zoning Bylaw and subdivision

		estimated future housing needs and demand, as determined in their housing needs report or assessment	requirements to identify opportunities to create more small lots, smaller houses and more flexibility in the number of accessory units allowed per lot.
	b)	articulate how local plans and policies will meet the need for diverse (in tenure, size, and type) and affordable housing options	See above
	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	See below
	ii)	increased supply of family-friendly, age-friendly, and accessible housing	**Policy HCLU 3** supports siting and building relaxations to accommodate aging-in-place. **Policy HCLU 6** makes provision for lot consolidation and higher permitted density to accommodate a senior's independent type of housing or that includes active play space for children or major trail connection.
	iii)	increased diversity of housing tenure options, such as attainable homeownership, rental, co-op housing, rent-to-own models, and cohousing	**Policy HCLU 4** would allow consideration of additional accessory units on a single-family lot if parking and sewage requirements can be met. This would increase the rental stock available and may make home ownership more affordable. **Policy HCLU 6** above could be developed as co-housing or cluster housing or an Abbeyfield type of seniors development
	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	**Policy HCLU 5** allows consideration of duplex, triplex or fourplex housing forms in the RS 1 zone under conditions. Current zoning allows multiple single-family homes, duplex, triplex on large lots zoned RM 1 or RM 2 but having only boat access. The RS 1 zone has road access, water service and is close to transit.
	v)	integration of land use and transportation planning such that households can reduce their combined housing and transportation costs	**Policy M 23** identify the need for more bus shelters and other safety improvements **Policies M 32 & 33** direct collaboration with TransLink and

			others to optimize transit service to Belcarra and the major parks. **Policies HCLU 2** to 6 directs a review of the Zoning Bylaw to address housing needs and affordability by examining lot and building sizes, density and housing built forms **Policies HCLU 17** and **HCLU 19** seek ways to provide for the development of small scale, local serving retail business so residents do not have to drive out of the community for every good or service.
	vi)	increased social connectedness in multi-unit housing	See **Policy HCLU 6** above
	vii)	integrated housing within neighbourhood contexts and high quality urban design	**Policy HCLU 7** directs the development of Design Guidelines for low density multi-unit dwellings that new development fits into the neighbourhood and enhances the semi-rural character of the community.
	viii)	existing and future housing stock that is low carbon and resilient to climate change impacts and natural hazards	**Policy CC 19** encourages inclusion of low impact alternative/renewable energy sources in new construction. **Policy CC 4** supports BC Energy Step Code goal of reaching net zero energy for new construction by 2032
Policy 4.1.9	**Section**	**Policy**	
	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	OCP housing policies are based on the community's housing needs as expressed in the Belcarra Housing Needs Assessment Report (2021) and Metro 2050

	b)	are based on an assessment of local housing market conditions, by tenure, including assessing housing supply, demand, and affordability	SEE ABOVE
	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	SEE ABOVE
	d)	identify implementation measures within their jurisdiction and financial capabilities, including actions set out in Action 4.1.8	See Above

Strategy 4.2 Protect tenants and expand, retain, and renew rental housing supply

	Section	Policy	Applicable OCP Policies
Policy 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)	*See response in Targets section*
	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	N/A
	c)	identify the use of regulatory tools that protect and preserve rental housing	Residential Tenancy Act
	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	P**olicies HCLU 2, 4, 5, 6.and 11** are described above and could provide increased rental stock. The RS 1 zone is served by transit (See Figure 7 OCP Transportation Map)
	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	There is only single-family homes, some with secondary suites or a coach house, in Belcarra **Policy HCLU 6** provides opportunity for co-housing **Policy HCLU11** could create municipal lots for future residential development if land negotiations with MV, Province and Tsleil-Waututh were successful
	iii)	protection and renewal of existing non-market rental housing	There is no non-market housing in Belcarra

	iv)	mitigated impacts on renter households due to renovation or redevelopment, and strengthened protections for tenants	N/A
	v)	reduced energy use and greenhouse gas emissions from existing and future rental housing stock, while considering impacts on tenants and affordability	N/A
Policy 4.2.8	**Section**	**Policy**	**Supplementary Information**
	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	See **Policies HCLU 2** and **HCLU 4** above
	b)	encourage tenant protections and assistance for renter households impacted by renovation or redevelopment of existing purpose-built rental housing	**N/A.** There is no purpose built rental in Belcarra except for any existing secondary suites or coach houses.
	c)	cooperate with and facilitate the activities of Metro Vancouver Housing under Action 4.2.2	If the negotiations under **Policy HCLU 10** were successful a multi-unit site could be created for local seniors and low-income residents, subject to septic sewer approval, in partnership with MVHC or other non-profit housing provider.
Strategy 4.3 Meet the housing needs of lower income households and populations experiencing or at risk of homelessness			
Policy 4.3.7	**Section**	**Policy**	**Applicable OCP Policies**
	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	If the negotiations under **Policy HCLU 10** were successful a multi-unit site could be created for local seniors and low-income residents, subject to septic sewer approval, in partnership with MVHC or other non-profit housing provider.
	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	N/A
Policy	**Section**	**Policy**	**Supplementary Information**
	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	See **Policy HCLU 10** above

	b)	identify strategies to increase community acceptance and communicate the benefits of affordable and supportive housing development	N/A
	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	N/A

Metro 2050 Goal 5: Support Sustainable Transportation Choices

Describe how the OCP and other supporting plans and policies contribute to this Goal:

Strategy 5.1 Coordinate land use and transportation to encourage transit, multiple-occupancy vehicles, cycling and walking

	Section	Policy	Applicable OCP Policies
Policy 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	**Policies M 1** map local trails), **M 3** (improve local trails), **M 4** (provide end-of-trip facilities at Village Hall, sports court and major parks), **M 7** (connect to Sasamat Lake), **M 9** (universal design), **M10** (integrate trails), **M14** (limit park access), **M 22+23** (road safety improvements), **M30,31,32,34** (to address transit, traffic, congestion and parking problems caused by Metro and Provincial parks. Details are provided above. **Policies HCLU 17** to 19 identify potential avenues to provide some local commercial and retail outlets to curtail need to drive out of community for every good or service.
	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	There is no on-street parking allowed in the Village of Belcarra. **Policy M 35** provides for welcoming signage for transit, cyclists and pedestrians. **Policy M 6** advocates MV provide end-of-trip facilities and **Policy M 7** encourages MV to improve the connection to Sasamat Lake. **Policy M20** directs support for

			the creation of a community ride share program. **Policies M 30,31,32** all support MV and others to address traffic, parking, congestion and insufficient transit service to both provincial and regional parks in Belcarra.
	c)	manage and enhance municipal infrastructure in support of transit, multiple-occupancy vehicles, cycling, walking, and rolling	**Policies M 22** identifies potential locations where road improvements would provide for pedestrian and cyclist safety while **Policy M 9** directs universal design be included in road and trail work. **Policy M 13** designates Bedwell Bay Road as the MRN route to the Village. **Policy M 21** expresses support for the development of a community ride share program. **Policy CC 17** (and others) advocates installation of secure bike parking and electric charging stations at Village Hall and sports court
	d)	support the transition to zero-emission vehicles	**Policies CC 17 & 18** and **CC 29** supports the transition of municipal vehicle and equipment to zero emission models by 2040. **Policy M 37** encourages MV to provide charging stations for both park visitors and park employees
	e)	support implementation of the Regional Greenway Network and Major Bikeway Network, as identified in Map 10	**Policy M 5 and CC 14** support development of the 2050 Greenway Vision by supporting a new multi-use path through Belcarra to connect to the Sasamat Greenway in the future.
	f)	support implementation of local active transportation and micro-mobility facilities that provide direct, comfortable, all ages and abilities connections to the Regional Greenway	**Policy M 8** identifies a funding source to undertake an Active Transportation Plan and **Policy M 22** outlines some possible road

		Network, Major Bikeway Network, transit services, and everyday destinations	safety improvements to encourage more pedestrian and micro-mobility use. **Policy CC 13** direct Council to promote low carbon forms of transportation while **Policy CC 16** would expand the active transportation network to make it the most convenient option for short trips.
Strategy 5.2 Coordinate land use and transportation to support the safe and efficient movement of vehicles for passengers, goods, and services			
Policy 5.2.6	**Section**	**Policy**	**Applicable OCP Policies**
	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	N/A
	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	N/A
	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	N/A
	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	N/A
	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	N/A
	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	N/A

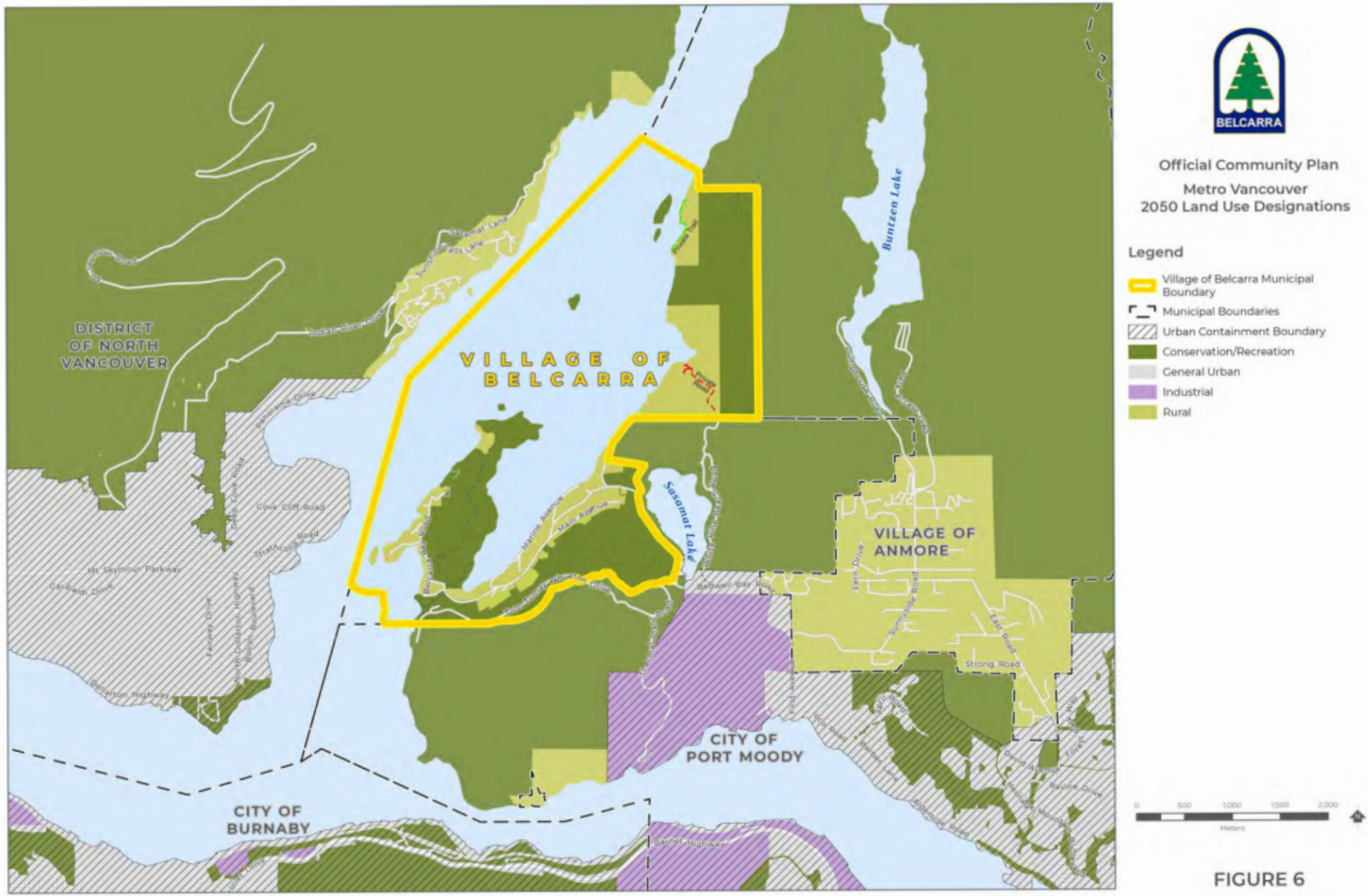

BELCARRA
Official Community Plan
Metro Vancouver
2050 Land Use Designations
Legend
Village of Belcarra Municipal Boundary
Municipal Boundaries
Urban Containment Boundary
Conservation/Recreation
General Urban
Industrial
Rural
DISTRICT OF NORTH VANCOUVER
VILLAGE OF BELCARRA
VILLAGE OF ANMORE
CITY OF PORT MOODY
CITY OF BURNABY
Buntzen Lake
Sasamat Lake
Meters

FIGURE 6

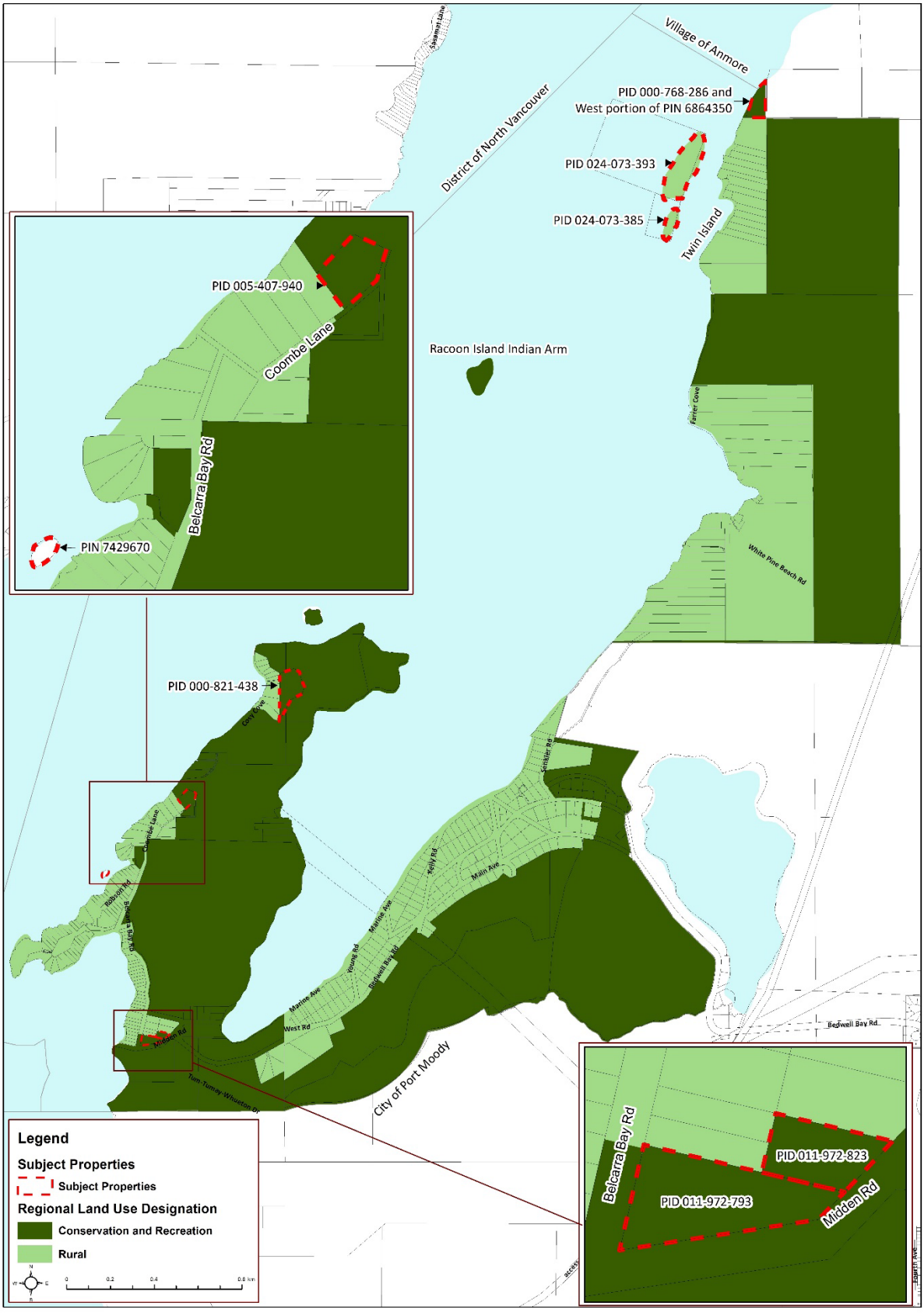
Village of Belcarra Regional Context Statement
Table and map showing current and proposed Metro 2050 Regional Land Use Designations

PID (PIN)	Legal Description	Existing Regional Land Use Designation	Proposed Regional Land Use Designation	Rationale/Comments
011-972-823	PARCEL "B" (EXPLANATORY PLAN 6105) LOT 7 BLOCK 4 DISTRICT LOT 229 GROUP 1 NEW WESTMINSTER DISTRICT PLAN 1095	Conservation and Recreation	Rural	Property designated as Rural in the Board-accepted 2011 Belcarra Regional Context Statement
011-972-793	LOT "C" BLOCK 4 DISTRICT LOT 229 GROUP 1 NEW WESTMINSTER DISTRICT PLAN 1095	Conservation and Recreation	Rural	Property designated as Rural in the Board-accepted 2011 Belcarra Regional Context Statement
005-407-940	LOT 9 SECTIONS 23 AND 26 FRACTIONAL TOWNSHIP WEST OF TOWNSHIP 39 NEW WESTMINSTER DISTRICT PLAN 2411	Conservation and Recreation	Rural	Property designated as Rural in the Board-accepted 2011 Belcarra Regional Context Statement
000-821-438	PARCEL 8 (REFERENCE PLAN 1450) OF PARCEL "A" LEGAL SUBDIVISION 7 AND 8 SECTION 26 IN FRACTIONAL TOWNSHIP WEST OF TOWNSHIP 39 NEW WESTMINSTER DISTRICT	Conservation and Recreation	Rural	Property designated as Rural in the Board-accepted 2011 Belcarra Regional Context Statement
000-768-286 West portion of parcel (6864350) within the Village of Belcarra	FRACTIONAL LEGAL SUBDIVISION 15 SECTION 33 TOWNSHIP 4 RANGE 7 WEST OF THE 7TH MERIDIAN NEW WESTMINSTER DISTRICT SECTION 33, TOWNSHIP 4, RANGE 7, WEST OF THE 7TH MERIDIAN, NEW WESTMINSTER DISTRICT.	Conservation and Recreation	Rural	Property designated as Rural in the Board-accepted 2011 Belcarra Regional Context Statement and is designated Residential in Belcarra OCP.

024-073-393	THE SURFACE OF DISTRICT LOT 5958 GROUP 1 "ALFA NO. 2" MINERAL CLAIM NEW WESTMINSTER DISTRICT	Rural	Conservation and Recreation	Property is part of Say Nuth Khaw Yum [aka Indian Arm] Provincial Park.
024-073-385	THE SURFACE OF DISTRICT LOT 5959 GROUP 1 "ALFA NO. 1 FRACTION" MINERAL CLAIM NEW WESTMINSTER DISTRICT	Rural	Conservation and Recreation	Property is part of Say Nuth Khaw Yum [aka Indian Arm] Provincial Park.
(7429670)	DISTRICT LOT 6361, GROUP 1, NEW WESTMINSTER DIST.	no RLUD	Rural	Property not designated in Board-accepted 2011 Belcarra Regional Context Statement or in Metro 2050.

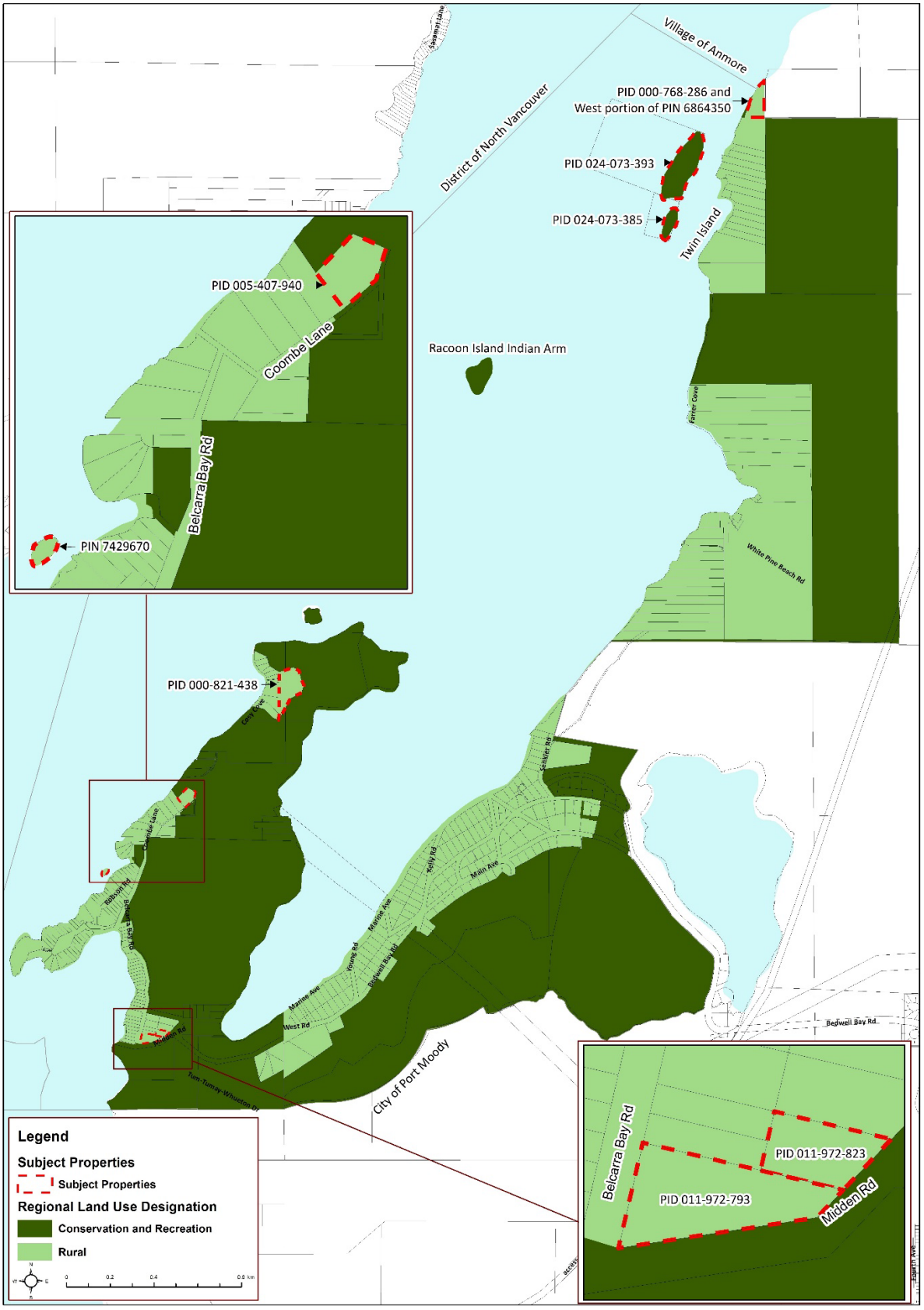
Village of Belcarra Regional Context Statement
Table and map showing current and proposed Metro 2050 Regional Land Use Designations

Pre-Amendment



Village of Belcarra Regional Context Statement
Table and map showing current and proposed Metro 2050 Regional Land Use Designations

Post-Amendment



To: Regional Planning Committee

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

Date: August 13, 2024 Meeting Date: September 6, 2024

Subject: **Invasive Species Best Management Practices – Bamboo, Cherry Laurel, and Common Periwinkle**

RECOMMENDATION

That the MVRD Board receive for information the report dated August 13, 2024, titled "Invasive Species Best Management Practices - Bamboo, Cherry Laurel, and Common Periwinkle".

EXECUTIVE SUMMARY

Adding to the existing library of technical guidance for priority invasive species, Metro Vancouver has been working with the Invasive Species Council of Metro Vancouver, the City of Burnaby, other member jurisdictions, and local experts to produce best management practice guides. The latest set of guides have been prepared for bamboo, cherry laurel, and common periwinkle. These documents provide information for practitioners about how to identify, track, report, dispose, prevent further spread, and effectively control these species, as well as regulatory requirements, monitoring and restoration tips, references and additional resources. Each guide also describes how these species may adapt as our climate changes, which increases the urgency to proactively control and prevent the spread of these invasive plants. An accompanying one-page fact sheet has also been prepared for each invasive species to raise public awareness.

PURPOSE

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

BACKGROUND

Since 2018, the MVRD Board has received reports regarding best management practices for priority invasive species. To date, practitioner guidance has been produced for: knotweed species, giant hogweed, European fire ant, European chafer beetle, Himalayan blackberry, Scotch broom, English holly, English and Irish ivies, yellow archangel, Himalayan balsam, parrot's feather, purple loosestrife, reed canarygrass, wild chervil, yellow flag iris, hedge bindweed, American bullfrog, garlic mustard, poison hemlock, spurge laurel, butterfly bush, orange hawkweed, and Japanese beetle. This report presents the best management practice guides for three additional invasive species that were identified by member jurisdiction staff as regional priority species: bamboo, cherry laurel, and common periwinkle.

THE NEED FOR AND DEVELOPMENT OF REGIONAL BEST MANAGEMENT PRACTICES

Invasive species are non-native flora or fauna that out-compete native species and can be highly destructive and difficult to control. They can damage infrastructure and agricultural crops, harm livestock and humans, reduce property and recreational values, and negatively impact biodiversity. In 2016, the Regional Planning Advisory Committee - Invasive Species Subcommittee requested the

development of regionally-appropriate best management practices for priority invasive species. In April 2023, the MVRD Board adopted the *Climate 2050 Nature and Ecosystems Roadmap* (Reference 1), which commits Metro Vancouver to "**Support regional invasive species management by developing and promoting best practices**, tracking disposal options, and working with researchers to improve our understanding of the potential spread of invasive species as our climate continues to change". *Metro 2050* also includes an action for member jurisdictions to:

> *"…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"* (Policy Action 3.2.7c) iii)).

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

OVERVIEW OF LATEST BEST MANAGEMENT PRACTICES

In late 2023 and early 2024, staff from the City of Burnaby partnered with Metro Vancouver in the creation of management guidance documents for bamboo (Attachment 1), cherry laurel (Attachment 2), and common periwinkle (Attachment 3). The ISCMV was again retained to research best practices for these species, including peer reviews by relevant staff from several member jurisdictions, Metro Vancouver, and additional local experts. Graphic design was completed by Metro Vancouver's External Relations Department. An overview of each document is provided below.

Bamboo

Bamboos are a large group of aggressive evergreen grasses that are often grown as ornamental plants and commercial crops for fabric, biofuel, paper pulp, and construction materials. Unfortunately, bamboo has escaped cultivation worldwide and can be found in landscaped areas, forests, and streams in Metro Vancouver. Most bamboo species found in this region originated from China and Japan. Running bamboos are generally considered a greater risk for invasion than clumping bamboos, however bamboos are rarely identified by species in garden centres, and consumers may not be aware of the risks of spread and damage to infrastructure associated with planting bamboo. Hence, the management guidance provided has been generalized for 'bamboo'. Bamboos can escape from gardens, invade neighbouring properties, grow through cracks in building foundations, and damage sidewalks and roads. In natural areas, they compete with native plants and cause seedling death due to root competition. Bamboo leaf litter can also impede drainage. Local experts recommend manually or mechanically controlling bamboo by digging, excavation, or repeated cutting / mowing. Herbicides are not recommended due to the volume of herbicide required and limited effectiveness.

Cherry Laurel

Cherry laurel is a fast-growing woody tree / shrub that is commonly planted in gardens or as a hedge. It is native to southwestern Asia and southeastern Europe and has escaped cultivation in southwestern BC. Cherry laurel spreads primarily by birds and small mammals that ingest the fruits and disperse the seeds over long distances, but its roots can also spread laterally and form suckers. Accidental ingestion of cherry laurel leaves, stems, or seeds by humans may cause cyanide poisoning characterized by gasping, weakness, pupil dilation, muscle spasms, coma, or even respiratory failure. In forests, cherry laurel forms a dense cover that can impede the growth of native seedlings and shrubs. Local experts recommend pulling cherry laurel seedlings or small plants, and cutting mature plants / trees, plus removing new stems from the remaining stump. Stems will likely regrow and require recutting for several years if the stump is not removed. When handling cherry laurel, it is best to wear gloves and protective clothing.

Common Periwinkle

Common periwinkle is a low-growing trailing evergreen plant that was introduced to North America in the 1700s as a garden ornamental and medicinal herb. It has escaped cultivation in many areas of BC and spread into forests, forming dense groundcover that blocks sunlight, and producing chemicals that prevent the germination and growth of native plants. Unfortunately, many garden centres still sell several varieties of periwinkle, including large periwinkle, which is also considered to be invasive in Metro Vancouver. Local experts recommend manual removal (i.e., pulling up stems, stolons and roots by hand, or digging to remove as much of the plant as possible).

As with all invasive species, prevention is the most economical and effective way to reduce their spread over the long term. Invasive species experts advise against purchasing, trading, and transplanting these and other identified species. Proactive management is recommended to minimize the potential impacts on local ecosystems, agricultural areas, and human health, and to reduce control costs over the long term.

Climate Change Adaptation

The best management practice guides also note that bamboo, cherry laurel, and common periwinkle may benefit from our changing climate (i.e., warmer temperatures, longer dry spells in summer months, more precipitation in autumn, winter and spring, more intense extreme weather events, and an extended growing season).

- Bamboo thrives in temperatures between 20 and 33°C, it tends to spread along streams during high precipitation events, and can withstand low-intensity fires.
- Cherry laurel is highly tolerant of heat, frost and drought, thrives in elevated atmospheric carbon dioxide concentrations, and can re-sprout after wildfires.
- Common periwinkle is somewhat drought tolerant, and although it may be temporarily impacted by heat or cold, it can quickly resprout. If periwinkle stem fragments are transported by flood waters, they may take root in soils downstream.

With these kinds of competitive advantages, these species are more adaptable than native species in a variety of ecosystems. Their ability to reproduce in multiple ways and spread quickly suggests that they will be able to withstand, and possibly thrive, with changing climate conditions. This could

reduce the availability of suitable habitat and food for native fauna, and significantly impact local biodiversity.

FACT SHEETS AND NEXT STEPS

Plain language fact sheets (Attachments 4 through 6) have also been produced for each of the three species to help share the best practice guidance with residents. These resources have been posted and are publicly available on the Metro Vancouver website at www.metrovancouver.org (Reference 2). Regional Planning staff will continue to partner with the ISCMV and member jurisdictions to develop guidance for additional priority invasive species of regional concern, and update these documents when new information becomes available.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The 2023 MVRD Board-approved Regional Planning budget included $5,000 for the invasive species best management practice guides presented in this report. The City of Burnaby also contributed toward the creation of these regional resources.

CONCLUSION

Since 2018, Metro Vancouver has been working with the Invasive Species Council of Metro Vancouver, member jurisdictions, and local experts to provide advice about tackling priority invasive species for practitioners. In collaboration with the City of Burnaby, three new best management practice guides have been completed for invasive species found within the Metro Vancouver region: bamboo, cherry laurel, and common periwinkle. These documents provide locally-tested technical guidance on identification, tracking, reporting, climate adaptation, effective prevention and control strategies, regulatory requirements, disposal, monitoring and restoration, as well as references and additional resources. The best management practice guides also note that bamboo, cherry laurel, and common periwinkle may benefit from our changing climate in several ways and expand their distribution. Proactive management is recommended to minimize potential impacts on local agriculture and natural spaces, and to reduce control costs over the long term. One-page fact sheets for each species have also been created to help member jurisdictions raise public awareness.

ATTACHMENTS

1. Best Management Practices for Bamboo in the Metro Vancouver Region
2. Best Management Practices for Cherry Laurel in the Metro Vancouver Region
3. Best Management Practices for Common Periwinkle in the Metro Vancouver Region
4. Tackling Bamboo Fact Sheet
5. Tackling Cherry Laurel Fact Sheet
6. Tackling Common Periwinkle Fact Sheet

REFERENCES

1. *Climate 2050 Nature and Ecosystems Roadmap*
2. Other invasive species best practice resources

64117927

Attachment 1

BEST MANAGEMENT PRACTICES FOR

Bamboo

in the Metro Vancouver Region

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

ISCMV
INVASIVE SPECIES COUNCIL OF METRO VANCOUVER

Disclaimer

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Created by: Metro Vancouver, City of Burnaby, and the Invasive Species Council of Metro Vancouver

In partnership with: Diamond Head Consulting

Requested by: The Regional Invasive Species Working Group for the Metro Vancouver region and the City of Burnaby

Metrotower III, 4515 Central Boulevard,
Burnaby, BC, V5H 0C6
metrovancouver.org

June 2024

Contents

Introduction

The impacts of invasive species on ecological, human, and economic health are of concern in the Metro Vancouver region. Successful control of invasive species requires concerted and targeted efforts by many players. This document - "**Best Management Practices for Bamboo in the Metro Vancouver Region**" - is one of a series of species-specific guides developed for use by practitioners (e.g., local government staff, crews, project managers, contractors, consultants, developers, stewardship groups, and others who have a role in invasive species management) in the region. Together, these best practices provide a compendium of guidance that has been tested locally by many researchers and operational experts.

Bamboos[1] comprise a large group of fast-growing, perennial, woody-stemmed evergreen grasses that grow worldwide. There are over 1450 species of bamboo documented worldwide exhibiting great diversity in size and characteristic (Buziquia, Freitas Lopes, Almeida, & de Almeida, 2019). Bamboos are native to tropical and warm temperate regions in the world and belong to the grass family (*Poaceae*), subfamily *Bambusoidiae* (UBC Botanical Garden, 2023). Most bamboo species in Metro Vancouver originated from China and Japan (UBC Botanical Garden, 2023).

Bamboos are heavily promoted as ornamental plants, with some retailers specializing in their sale, distribution, and maintenance. Gardeners and homeowners are often drawn to bamboo as an exotic garden feature or privacy screen. Local gardening experts agree that some forms of bamboo are invasive, but still promote the planting of non-invasive varieties and the containment of more aggressive varieties (Minter, 2019). Bamboos are rarely identified by species in retail centres, and consumers may not be aware of the risks of spread and damage to infrastructure associated with planting bamboo on their property. Seeking information online can be confusing as most websites that feature bamboo focus on maintenance and propagation, rather than control.

In recent years, bamboo has been used as a fast-growing, sustainable crop (compared to traditional evergreen tree plantations) for use as furniture, flooring, plywood, fabric, baskets, paper pulp, biofuel and food (Coyle, et al., 2019). The annual market value of bamboo products world-wide is estimated at $60 billion (Coyle, et al., 2019). However, even resources promoting the commercial use of bamboo acknowledge the investment required to contain and manage running bamboo species on farms (Coyle, et al., 2019). As bamboos become more widely used, the extent and impact of invasions is expected to increase (Buziquia, Freitas Lopes, Almeida, & de Almeida, 2019).

Academic institutions, government, and non-government organizations continue to study this species in British Columbia. As researchers and practitioners learn more about the biology and control of bamboo, it is anticipated that the recommended best management practices will change. This document will be updated to reflect these changes as the information becomes available. Please check metrovancouver.org regularly to obtain the most recent version of these best management practices.

1 Since bamboos rarely flower, naming and classification of unique species is difficult as the taxonomy of flowering plants is usually based on flower structures (UBC Botanical Garden, 2023). Further complicating the status of bamboo, other plants around the world that are not members of the Poaceae family (and are not true bamboos) have "bamboo" in the common name. This guide covers bamboos that are invasive and spreading in Metro Vancouver.

REGULATORY STATUS

Although invasive bamboos are plants of concern in the Metro Vancouver region, they are not currently regulated anywhere in British Columbia.

IMPACTS

Indigenous Peoples have an intrinsic relationship with the natural world, built on reciprocity and stewardship. Many native plants and animals have cultural and spiritual significance for Indigenous Peoples, in addition to being important food and medicine sources. Indigenous communities in British Columbia have collectively called for invasive species prevention, management, and control due to their impact on infrastructure, the economy, human health, ecosystems, and cultural practices. Further collaboration with Indigenous Peoples will deepen our understanding about the impacts of invasive species, such as bamboo, on Indigenous ways of life and our shared environment.

Bamboos are notorious for escaping gardens, invading neighbouring properties and spreading to unwanted areas (UBC Botanical Garden, 2023). People often regret planting bamboo as over time it invades beyond garden beds, breaking through pots or containment barriers. Once established, bamboo is difficult to control.

Bamboo can encroach on and outcompete native vegetation (Buziquia, Freitas Lopes, Almeida, & de Almeida, 2019), resulting in the complete conversion of natural areas to bamboo monocultures (Coyle, et al., 2019). It impedes succession in native forests by blocking sunlight to understory vegetation, limiting seed dispersion, and causing seedling death in other species due to root competition and crushing (Buziquia, Freitas Lopes, Almeida, & de Almeida, 2019; Griscom & Ashton, 2003).

Bamboo-infested areas and dense commercial stands of bamboo provide very little habitat for native wildlife (Coyle, et al., 2019). In riparian areas, bamboo leaf litter can alter streamflow and water quality, and negatively impact invertebrate communities that depend on leaf litter diversity (O'Connor, Covich, Scatena, & Loope, 2000).

The synchronous seed production of bamboo species (described below in the Reproduction and Spread section) has human health and economic impacts. During rare large seed releases, rodent populations may increase. After exhausting the bamboo seed supply, the animals disperse in search of food, often damaging crops and invading human dwellings, increasing the risk of rodent-borne disease transmission (Smith, Gomulkiewicz, & Mack, 2015). In their 2015 modelling work, Smith, Gomulkiewicz & Mack suggested that this scenario is possible in North America due to the rapid expansion of invasive bamboos, and that high deer mice populations would likely persist for multiple generations afterwards.

Some bamboo species can take advantage of cracks in building foundations, enter dwellings (UBC Botanical Garden, 2023) and damage roads and sidewalks (Buziquia, Freitas Lopes, Almeida, & de Almeida, 2019). Bamboo may increase fire hazard (Coyle, et al., 2019).

Bamboo exhibits two distinct forms of growth: running and clumping (for more information refer to the Identification section below). Running bamboo species are considered a greater risk for invasion than clumping bamboo species (Lieurance, Cooper, Young, Gordon, & Flory, 2018). In their study of 47 species that are commonly cultivated in the horticultural, paper, construction, and biofuel industries, Lieurance et al (2018) identified all but one running bamboo species as a high invasion risk, and only one clumping species as high risk.

REPRODUCTION AND SPREAD

Bamboo spread is predominantly by vegetative growth through rhizomes, underground stems from which culms emerge (Coyle, et al., 2019). Dense rhizomes are found within the upper 30 centimetres of soil. Culms (stems) emerge from the rhizomes and elongate quickly (Alabama Cooperative Extension System, 2020). The Identification section below describes the two distinct growth forms of bamboo, and how they spread. Patches of bamboo are called groves and are genetically identical (Coyle, et al., 2019).

Rhizomes exposed to soil may resprout (Alabama Cooperative Extension System, 2020). Some running bamboo species can sprout or root from the nodes of culm cuttings (sections) that are buried in soil (Kigomo, 2007). This is more likely to occur from nodes in the lower part of the culm (Kigomo, 2007). Illegal dumping likely caused the establishment and spread of bamboo in City of Burnaby parks (Diamond Head Consulting, 2019).

Bamboo plants rarely flower, and not on a seasonal or annual basis like many plants. Bamboos of the same species across a wide area will flower at the same time (called synchronous flowering or masting) on a predictable cycle, every 3-120 years, depending on the species (Janzen, 1976). The timing of this process is determined by internal physiological characteristics rather than external cues such as weather (Janzen, 1976). The year before flowing occurs, some bamboo groves do not produce new culms (Janzen, 1976). During flowering, the plants produce large numbers of wind-pollinated flowers that set seed (Janzen, 1976). Flowering triggers slowed growth for the plant, and often plant death (UBC Botanical Garden, 2023). The new generation of seedlings then grows vegetatively for the same length of time as the parent generation and the process repeats. The flowering cycles of many bamboo species are known due to historic records (Janzen, 1976). There are some exceptions to the synchronous reproduction noted above and there are conflicting accounts of the timing and process of certain species, perhaps due to misidentification (Gucker, 2009).

HABITAT AND DISTRIBUTION

Bamboo has escaped cultivation and gardens, spreading into forests, roadsides, and riparian areas in the Metro Vancouver region (Butcher, 2024). Although bamboo prefers well-drained and rich organic soil, it can survive in a variety of soil conditions and habitats. Running bamboo grows larger in full sun, while clumping bamboo varieties prefer shade (Minter, 2019). Bamboos have been observed growing at sea level to 2,000 metres in elevation (Gucker, 2009).

Although some bamboo species cannot tolerate the winter in Canada, many cold hardy species can withstand freezing temperatures and snow. Approximately 50 species are thriving in the UBC Botanical Garden (UBC Botanical Garden, 2023). Bamboos are common in Metro Vancouver, the Fraser Valley, and on Vancouver and Gulf Islands where they are most often found in or adjacent to landscaped areas.

Bamboo encroaching on a waterway

CREDIT: ISCMV

CLIMATE CHANGE ADAPTATION

Climate models predict that the Metro Vancouver region will experience warmer temperatures; a decrease in snowpack; longer dry spells in summer months; more precipitation in autumn, winter and spring; more intense extreme events; and an extended growing season. In the past, our region had an average of 252 days in the growing season. In lower elevations, 45 days will be added to the growing season by the 2050s, and 56 days by the 2080s, resulting in nearly a year-round growing season of 357 days on average. In higher elevation ecosystems the growing season length will increase by 50% to 325 days by the 2080s. With a reduction in precipitation over the increasingly warm summer months, this region can also expect an increase in wildfire risk (Metro Vancouver, 2016). These changes will stress many sensitive ecosystems, increasing their vulnerability to competition from invasive species.

Bamboo's rapid and aggressive growth, ability to survive in a variety of conditions and habitats, widespread distribution, and vast number of species worldwide will likely influence its ability to adapt to future climate changes. It is speculated that bamboos may benefit from our future climate in several ways:

- **Higher temperatures:** Bamboo grows best in temperatures between 20 and 33°C (Kigomo, 2007). With an 82% increase in the growing degree days[2] predicted by the year 2080 in this region (Metro Vancouver, 2016), bamboo plants will likely thrive and spread further.
- **Increased precipitation and flooding:** Prolonged or early flooding decreases the number of culms produced but does not impact long-term plant survival (Franklin, Prior, Hogarth, & McMahon, 2010). The development of aerial roots at the nodes on the lower part of the culms helps the plant to tolerate water inundation (Franklin, Prior, Hogarth, & McMahon, 2010). High precipitation and disturbance events are thought to support bamboo spread along streams (O'Connor, Covich, Scatena, & Loope, 2000).
- **Fire resistance:** The wax coating on the surface of culms appears to provide protection against fire (Franklin, Prior, Hogarth, & McMahon, 2010). Bamboo groves can withstand low-intensity fires; in high-intensity fires, culms suffer little damage although survival (especially of small culms) is impacted in the months and years following (Franklin, Prior, Hogarth, & McMahon, 2010).

With these kinds of competitive advantages, this species is more adaptable than native species in a variety of ecosystems. Its ability to spread aggressively and quickly suggest that it will be able to withstand, and possibly thrive, with changing climate conditions.

2 Growing degree days are a measure of heat accumulation that is useful for agriculture and horticulture. It is calculated by how warm daily temperatures are compared to a base temperature of 5°C (although different base temperatures may be useful for different plants). For example, if a day had an average temperature of 11°C, that day would have a value of 6 growing degree days. Annual growing degree days are accumulated this way for each day of the year and then summed. This measure is a useful indicator of opportunities for agriculture, as well as the potential for invasive species to thrive (Metro Vancouver, 2016).

Identification

Unless otherwise noted, the following identification information was collected from Gucker (2009). Although bamboos vary greatly in height, they look very similar (Diamond Head Consulting, 2019).

Stem: Segmented, straight, woody stems called culms emerge from rhizomes (horizontal underground stems) during the growing season; most culms are hollow between the nodes, but some are solid (UBC Botanical Garden, 2023). Culms lack bark. New culms and branches are green but may turn a different colour with maturity (for example golden yellow or black, depending on the species). Branch and leaf growth occurs every year (University of Maryland Extension, 2022). Bamboos range in height from short ground covers to timber bamboos over 20 metres tall (Alabama Cooperative Extension System, 2020).

Culms remain the same diameter from emergence to maturity, and do not increase in height after the first season (Coyle, et al., 2019). Culms emerging in subsequent years may grow larger in diameter and in height (Alabama Cooperative Extension System, 2020). Therefore, the shortest and thinnest culms in a grove are the oldest.

Growth Forms: Bamboo is categorized into two groups based on the growth habit of the rhizomes (Whatcom County Noxious Weed Board, 2023; UBC Botanical Garden, 2023). The genera known to exist in the Metro Vancouver region are listed for each type.

- **Clumping bamboo** (pachymorph/sympodial rhizomes) grows as dense, distinct clumps. Rhizomes are thick with short internodes and multiple branching tips. New rhizomes form adjacent to existing rhizomes, with slow outward growth. Genera found in Metro Vancouver: *Bambusa, Borinda, Chimonobambusa, Chusquea, Drepanostachyum, Fargesia, Hibanobambusa, Himalayacalamus, Thamnocalamus, Yushania* (UBC Botanical Garden, 2023).
- **Running bamboo** (leptomorph/monopodial rhizomes) spreads laterally, forming multiple culms along the length of the rhizome at nodes (Lieurance, Cooper, Young, Gordon, & Flory, 2018). Some running bamboos can spread up to 4.5 metres per year (Coyle, et al., 2019). This is the most invasive type of bamboo. Rhizomes have long internodes do not branch freely. Genera found in Metro Vancouver: *Arundinaria, Phyllostachys* (*Phyllostachys aurea*, golden bamboo, is considered the most abundant invasive bamboo in natural areas in North America), *Pleioblastus, Pseudosasa, Sasa, Semiarundinaria, Shibataea* (UBC Botanical Garden, 2023).

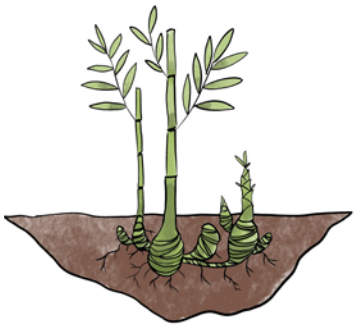
Leaves: Narrow and pointed at the tip, 5-15 centimetres long and up to 2 centimetres wide, arranged in a fan-like pattern on branches. Leaves are mostly evergreen and are continually replaced (timing of leaf shedding varies by species) (University of Maryland Extension, 2022).

Flowers: Bamboos do not produce flowers and seeds annually, but sexually reproduce synchronously with members of the same species at the same time; the length of flowering cycles depends on the species, every 3-120 years (see Reproduction and Spread section for more detail). For some species of bamboo introduced in North America, flowers have never been observed. 8-12 flowers grow in spikes, up to 5 centimetres long.

Fruits: Branched flower clusters (panicles) containing seeds are long and straw coloured when mature. Once released, seeds germinate quickly and are thought to have short viability (Gucker, 2009).

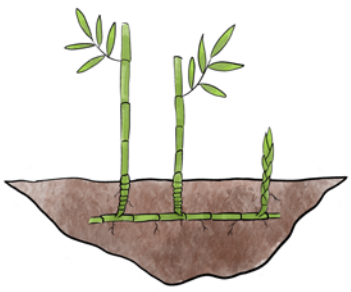
Roots: Stems emerge from a dense rhizome system, which is usually located in the top 30 centimetres of soil. Many bamboo species produce aerial roots from nodes on the lowest sections of the culms (Franklin, Prior, Hogarth, & McMahon, 2010).

The following photos show bamboo plant parts.



Cross section of clumping bamboo, with minimal hortizonal spread and slow growth

CREDIT: I. GASIOR



Cross section of running bamboo, with multiple stems arising from horizontal rhizomes

CREDIT: I. GASIOR

Clumping bamboo grove

CREDIT: ISCMV

At this site, running bamboo has escaped from a residential property and is spreading down the fence line

CREDIT: ISCMV

Mature, woody bamboo stems with nodes

CREDIT: ISCMV

Cut bamboo culms with hollow interior and woody exterior

CREDIT: ISCMV

Leaves

CREDIT: ISCMV

Bamboo shoots emerging next to mature culms

CREDIT: MATHATELLE, FLICKR

Flowers

CREDIT: F. & K. STARR, FLICKR

Seeds from golden bamboo (Phyllostachys aurea)

CREDIT: S. HURST, USDA NRCS PLANTS DATABASE, BUGWOOD.ORG

This running bamboo has exposed rhizomes (arrows) with roots growing from the rhizome nodes. One vertical culm is also visible on the right.

CREDIT: N. LIND, FLICKR

SIMILAR SPECIES

The species most commonly mistaken for bamboo are listed below. Note that the word bamboo is used in the common name for many plant species worldwide.

NATIVE SPECIES

- **Horsetail (*Equisetum* species),** especially the fertile stems without branches, resemble small bamboo culms. Equisetum species also spread by underground rhizomes, but the stems are usually less than 70 metres tall (Proudfoot, Fretwell, & Starzomski, 2016) and the leaves are inconspicuous and adhere tightly to the stems and branches at nodes. Equisetum species are common in a variety of environments in the Metro Vancouver region. Although some gardeners find horsetail a nuisance, they are not considered invasive.

Scouring rush (*Equisetum hyemale*) stems

CREDIT: F. & K. STARR, FLICKR

NON NATIVE SPECIES

- **Knotweed species** are commonly mistaken for bamboo and vice versa. All knotweeds have hollow, segmented stems. The three knotweed species most often mistaken for bamboo are Japanese knotweed (*Reynoutria japonica*), Bohemian knotweed (*Reynoutria x bohemica*), and Giant knotweed (*Reynoutria sachalinensis*). Knotweeds are often called 'false bamboo'. Unlike bamboo, knotweed stems die back completely every winter. Knotweed leaves are larger and more conspicuous, heart to triangular shaped, 8-10 centimetres wide and 15-40 centimetres long. Knotweeds are an invasive species of concern in southwestern BC. More information on these invasive species can be found in the Best Management Practices for Knotweed Species in the Metro Vancouver Region.

- **Giant reed (*Arundo donax*)** is an invasive grass native to temperate Asia that can reach heights of over 10 metres (Brown, 2020). Like bamboo it has rhizomes and hollow culms (1-4 centimetres in diameter with nodes 12-30 centimetres apart) (Brown, 2020). The pale green leaves are 70 centimetres long and clasp the stems. Flowerheads grow in plumes at the top of stems. Although giant reed is thought to have potential to spread in coastal areas in BC, it has only been found at one retail location in the Fraser Valley and is not known to occur outside of cultivation in Canada (Brown, 2020). It is a regulated pest plant under the Canada *Plant Protection Act*, which prohibits its importation and movement (Government of Canada, 2024).

- **Reed canary grass (*Phalaris arundinacea*)** is a fast-growing perennial invasive grass that can thrive in a variety of conditions. It is common throughout wetlands in Metro Vancouver. Its maximum height is 2 metres. In the winter, the above-ground portions of the grass die back, laying flat on the ground, and the leaves turn from green to a straw-colour. More information on this invasive species can be found in the Best Management Practices for Reed Canarygrass in the Metro Vancouver Region.

- **Lucky bamboo (*Dracaena sanderiana*)** is a houseplant available in single stems that are often braided together or twisted into shapes (GardenWorks, 2021). Although it has similar looking stems and leaves as the bamboos covered in this document, it is not a true bamboo. Lucky bamboo only survives indoors in the Metro Vancouver region and is not considered to be invasive.
- **Heavenly bamboo/sacred bamboo (*Nandina domestica*)** is an evergreen shrub grown for its showy white flowers and bright red berries; its blue-green leaves have a burgundy tint when they first emerge (GardenWorks, 2024). The leaves have a similar shape to bamboo but are shorter and rounder in the centre. The branches are spreading, not upright like bamboo.

Bohemian knotweed stems and leaves

CREDIT: ISCMV

Giant reed

CREDIT: L. J. MEHRHOFF, UNIVERSITY OF CONNECTICUT, BUGWOOD.ORG

Reed canarygrass

CREDIT: ISCMV

Lucky bamboo

CREDIT: H. DE VRIES, FLICKR

Heavenly bamboo

CREDIT: F. & K. STARR, FLICKR

Tracking

The provincial government maintains InvasivesBC, an invasive species database, map and mobile data collection application available for use by all land managers, contractors, government agencies and non-profit organizations completing surveys and/or management activities on invasive species in BC. Many agencies, including local governments, have their own internal invasive species inventory and mapping protocols that are used by staff, contractors, and, in some cases, the public. For example, the City of North Vancouver has its own system called AlienMap. Agencies in British Columbia that do not enter data into IAPP are encouraged to check it regularly because it contains public reports and data from other agencies and it is important to consider as much data as possible when making management decisions. The Map Display module of IAPP is publicly accessible.

When carrying out a bamboo inventory it is useful to record the following information as it will later inform treatment plans:

- Size and density of infestation;
- Location in relation to the 10 metre Pesticide Free Zone adjacent to water courses;
- Location in relation to other water sources, such as wells;
- Whether it is growing around desired vegetation or structures.

Reporting

Since bamboo is widespread throughout the Metro Vancouver region and does not pose an imminent health or safety risk, there is generally little value in reporting individual occurrences.

Prevention and Control Strategies

Effective invasive plant management may include a variety of control techniques ranging from prevention, chemical, manual, mechanical, biological, and/or cultural methods. Each method is described below in order of effectiveness. Much of the research on bamboo management has been conducted on golden bamboo, although the information is likely useful for many bamboo species.

Control or eradication of established bamboo groves requires extensive effort, and likely many years of repeated treatment and follow-up (Coyle, et al., 2019; Lieurance, Cooper, Young, Gordon, & Flory, 2018). Since bamboos spread vegetatively, the whole rhizome system must be removed or destroyed for complete control (Lieurance, Cooper, Young, Gordon, & Flory, 2018). The large height of many bamboo species can complicate control (Alabama Cooperative Extension System, 2020). The management of infestations that are encroaching or adjacent to natural areas should be prioritized.

STRATEGY COLOUR LEGEND

GREEN: RECOMMENDED

ORANGE: CAUTION

RED: NOT RECOMMENDED OR NOT AVAILABLE

PREVENTION: IMPERATIVE

Prevention is the most economical and effective way to reduce the spread of bamboo over the long term.

When working in or adjacent to bamboo, it is best to inspect and remove plants and plant parts from personal gear, clothing, pets, vehicles, and equipment and ensure soil, gravel, and other fill materials are not contaminated with bamboo before leaving an infested area.

When selecting plants for a site, do not purchase, trade, or transplant bamboo. Avoid using running bamboos as a privacy screen, hedge, living fence or other ornamental planting (Coyle, et al., 2019). The Invasive Species Council of BC's 'Grow Me Instead' Program or Metro Vancouver's Grow Green provide recommendations for non-invasive, drought-tolerant plants, and garden design ideas. All materials (e.g., topsoil, gravel, mulch, compost, wood chips, plant stock) should be weed-free. Bamboo can be introduced via these materials, and sites where they are used should be monitored carefully for any growth (Crosby, 2018). Healthy green spaces are more resistant to invasion by invasive plants, so it is also important to maintain or establish healthy plant communities.

Some of the running bamboos at highest risk for invasion are currently in use or proposed for use in the pulp and biofuel industries (Lieurance, Cooper, Young, Gordon, & Flory, 2018). It is imperative that these species be avoided for commercial production and horticulture use. At commercial bamboo operations, the spread of bamboo plant parts can be prevented using the following methods (Lieurance, Cooper, Young, Gordon, & Flory, 2018):

- Creating buffers around fields or installing below-ground physical barriers (see Cultural Control section below).
- Destroying viable rhizomes post-harvest.
- Securing loads of bamboo during transport.
- Decommissioning bamboo production facilities and monitoring those properties for growth areas (see Disposal section below). In Japan, bamboo invasions in natural areas are highly correlated with the abandonment of production facilities and the subsequent spread by rhizomes to adjacent.

MANUAL/MECHANICAL: RECOMMENDED

- **Digging** with a shovel or pickaxe can be effective for small stands of clumping and running bamboo. All rhizomes must be removed, as any left in the soil may resprout (Alabama Cooperative Extension System, 2020). For larger sites, excavation can be considered (see below).
- **Excavation** using a backhoe, root rake or other heavy machine may be required to remove large patches of bamboo that have been left to spread for a long period of time (Minter, 2019). All rhizomes must be removed, as any left in the soil may resprout (Alabama Cooperative Extension System, 2020). This method is only possible in areas accessible by heavy equipment and where complete soil disturbance can be tolerated (Alabama Cooperative Extension System, 2020). Care should be taken to reduce impacts to non-target species (Diamond Head Consulting, 2019). Trials in the City of Burnaby experienced periodic regrowth for 2 years after initial bamboo excavation (Butcher, 2024).
- **Repeated cutting or mowing** with during the growing season and for several years can be an effective control measure (Whatcom County Noxious Weed Board, 2023). Following the cutting of mature culms, repeated cutting or mowing of regrowth close to the ground gradually exhausts the energy reserves in the rhizomes (Coyle, et al., 2019; Alabama Cooperative Extension System, 2020). Tender new culms emerging in the spring may only require being kicked or knocked over (University of Maryland Extension, 2022). Trials in the City of Burnaby have employed monthly mowing, increasing to every two weeks during July and August (Butcher, 2024).

The length of time required to achieve control has not been well studied and may depend on the size, age and health of the infestation (Alabama Cooperative Extension System, 2020), but it is likely that this method will take a minimum of three years to achieve control (Butcher, 2024). Local trials have encountered a dramatic increase in rhizome and culm production during treatment, but a reduced culm size (for example, new culms 1-2 millimetres in diameter versus over 30 millimetres in the largest culms in the grove) (Butcher, 2024). Re-growth after this technique also tends to be outward from the initial grove, up to several metres (Butcher, 2024).

- **One-time cutting stems** can be used for sites that require immediate removal of stems for safety or other timely purpose but will not alone eradicate the plants. Cutting is often recommended before applying some herbicides (see Chemical Control section for additional information).
- **Root pruning** can be used as a method for controlling running bamboo, but it will not eradicate the plants. In August and again in November, a pruning saw or crowbar can be used to expose the underground rhizomes and roots and then cut the rhizomes (Minter, 2019). This method can be used in combination with trenching (see Cultural Control section).
- **Burning** bamboo has not been well studied (Alabama Cooperative Extension System, 2020). Rapid regeneration of new shoots after burning has been observed (Coyle, et al., 2019) and therefore burning is not recommended. Further, prescribed burning is not selective and may require a permit from the local fire department.

REMOVAL TIMING

APPLYING MANUAL/MECHANICAL CONTROL METHODS IN RIPARIAN AREAS

Bamboo often grows in large contiguous patches right up to the edge of water courses. Consider the impact of control techniques and the resulting bare soil on the adjacent aquatic environment. Schedule removal works during a period of least risk to fish species, outside of the fish window. Adhere to Provincial and Federal riparian regulations. It is recommended to consult with a qualified environmental professional when working around water bodies.

CULTURAL: CAUTION

The buffer, trench, and barrier methods outlined below are suitable methods for containing bamboo or for limiting the spread of the plants where full control cannot be accomplished (e.g. if an adjacent property owner maintains bamboo and their neighbour's objective is to limit spread).

- **Buffers** created around bamboo groves can prevent spread (Alabama Cooperative Extension System, 2020). It is recommended to maintain at least a 6 metre buffer between bamboo and natural areas or other sites needing protection from invasion (Coyle, et al., 2019). In the spring, it is best to mow or manually remove new culms within the buffer (Alabama Cooperative Extension System, 2020) (see Manual/Mechanical Control section above for more details on removal methods).

- **Trenches** dug 30 centimetres deep by 30 centimetres around a bamboo infestation can prevent rhizome encroachment across property lines, but trenches will not eradicate the plants (Coyle, et al., 2019). Trenches should be monitored and any bamboo rhizomes and roots that appear should be treated using manual/mechanical or chemical methods (Coyle, et al., 2019). New rhizomes will be visible along the trench wall. Beware of the tripping hazard a trench may cause (University of Maryland Extension, 2022). The City of Burnaby is currently trialing this method at a bamboo infestation adjacent to a house, but results are unknown (Butcher, 2024).

- **Vertical Barriers** installed in the ground around a bamboo infestation may limit its spread, prevent rhizome expansion, or change the direction of growth but will not eradicate the plants. Barriers can be made of metal, heavy landscape cloth or plastic sheeting, or other materials that rhizomes cannot penetrate (Whatcom County Noxious Weed Board, 2023). At the point of purchase, it is advised to describe the intended use so that appropriate barrier material can be recommended. Concrete is not recommended for use as a barrier as rhizomes can find their way through cracks (Diamond Head Consulting, 2019).

  It is best to bury barriers to a depth of 45-75 centimetres in the soil with at least 5 centimetres sticking above the ground to prevent rhizome growth overtop (Whatcom County Noxious Weed Board, 2023; University of Maryland Extension, 2022). If the barrier intercepts existing bamboo, use a shovel or saw to cut through the entire depth of the rhizomes and roots in the soil prior to installing the barrier. Take care to interlock or seal seams in the barrier, as bamboo can escape through any openings (Minter, 2019). Wooden forms can be used to hold the barrier material in place (Minter, 2019). Most barriers will eventually need to be replaced (Alabama Cooperative Extension System, 2020).

- **Covering** a small bamboo infestation following cutting may hinder regrowth but will not achieve eradication (Alabama Cooperative Extension System, 2020). For example, covering materials consult the Vertical Barriers method above.

- **Grazing** animals will consume bamboo leaves but avoid the hard stems (Coyle, et al., 2019). Grazing as a control method for bamboo has not been well studied (Alabama Cooperative Extension System, 2020). Grazing opportunities are limited in urban areas due to municipal bylaws regulating agriculture animals, the high probability of interface with the public, and the damage animals could cause to other vegetation. Due to these constraints and the risk to animal health, grazing is not recommended as a management option for this species in Metro Vancouver.

After a covering attempt in a backyard, bamboo culms returned

CHEMICAL: NOT RECOMMENDED

When alternative methods to prevent or control invasive plants are unsuccessful, professionals often turn to herbicides. Typically, bamboo species are not controlled well using chemical methods and most chemical control applications require an additional kind of retreatment (Lieurance, Cooper, Young, Gordon, & Flory, 2018). Bamboo removal experts in the Metro Vancouver region do not frequently use chemical control and do not recommend it due to the volume of herbicide required and limited effectiveness (Diamond Head Consulting, 2019).

This method should be used with caution for the following reasons (Crosby, 2018):

1. Weather conditions greatly influence treatment efficacy;
2. Bamboo often grows in riparian areas where pesticide use is restricted; and
3. Since bamboo growth is closely associated with other plants, chemical control can easily damage non-target species (Province of BC, 2002).

With the exception of substances listed on Schedule 2 of the BC Integrated Pest Management Regulation, the use of herbicides is highly regulated in British Columbia. Site characteristics must be considered with herbicide prescribed, based on site goals and objectives and in accordance with legal requirements. This summary of BC's *Integrated Pest Management Act* provides an overview of the provincial legislation.

PESTICIDE LICENCE AND CERTIFICATION

A valid pesticide licence is required to:

- offer a service to apply most pesticides;
- apply most pesticides on public land including local government lands[3]; and
- apply pesticides to landscaped areas on private land, including outside office buildings and other facilities.

Pesticides (e.g., herbicides, insecticides, fungicides) are regulated by the Federal and Provincial governments, and municipal governments often have pesticide bylaws.

- Health Canada evaluates and approves chemical pest control products as per the *Pest Control Products Act.*
- The BC *Integrated Pest Management Act* sets out the requirements for the use and sale of pesticides in British Columbia. This Act is administered by the Ministry of Environment and Climate Change Strategy.
- Several municipalities have adopted bylaws that prohibit the use of certain pesticides.

Everyone who uses pesticides must be familiar with all relevant laws.

3 on up to 50 ha/year by a single organization. Organizations looking to treat over 50 hectares of land per year are also required to submit a Pest Management Plan and obtain a Pesticide Use Notice confirmation.

ONLY ccompanies or practitioners with a valid Pesticide Licence and staff who are certified applicators (or working under a certified applicator) may apply herbicide on invasive plants located on public lands in British Columbia. Applicators must be either the land manager/owner or have permission from the land manager/owner prior to herbicide application.

On private property the owner may obtain a Residential Applicators Certificate (for Domestic class products only) or use a qualified company. Residents do not require a Residential Applicator Certificate for certain uses of domestic class glyphosate including treatment of plants that are poisonous for people to touch, invasive plants and noxious weeds listed in legislation, and weeds growing through cracks in hard surfaces such as asphalt or concrete. Refer to the 'Pesticides & Pest Management' and 'Home Pesticide Use' webpages listed in the Additional Resources Section for more information.

Questions? Contact the BC Integrated Pest Management Program: Telephone: (250) 387-9537

Email: bc.ipm@gov.bc.ca

Pesticide applicator certificates can be obtained under the category 'Industrial Vegetation Management' to manage weeds on industrial land, roads, power lines, railways, and pipeline rights-of-way for control of noxious weeds on private or public land. However, since bamboo is not a regulated noxious weed in the Metro Vancouver region, the 'Landscape' certification category is needed for herbicide use on public and private lands. Assistant applicator training is also available and the online course and exam are free.

It is best practice for personnel supervising or monitoring pesticide contracts to also maintain a pesticide applicator licence so they are familiar with certification requirements.

For more information on how to obtain a licence and the requirements when working under the provincial *Integrated Pest Management Act* and Regulation, please review the Noxious Weed & Vegetation Management section on this webpage: gov.bc.ca/PestManagement.

HERBICIDE LABELS

Individual herbicide labels must always be reviewed thoroughly prior to use to ensure precautions, application rates, and all use directions, specific site and application directions are strictly followed. Under the federal Pest Control Products Act and the BC Integrated Pest Management Regulation, persons are legally required to use pesticides (including herbicides) only for the use described on the label and in accordance with the instructions on that label. Failure to follow label directions could cause damage to the environment, create poor control results, or pose a danger to health. Contravention of laws and regulations may lead to cancellation or suspension of a licence or certification, requirement to obtain a qualified monitor to assess work, additional reporting requirements, a stop work order, or prohibition from acquiring authorization in the future. A conviction of an offence under legislation may also carry a fine or imprisonment.

Herbicide labels include information on both the front and back. The front typically includes trade or product name, formulation, class, purpose, registration number, and precautionary symbols. Instructions on how to use the pesticide and what to do in order to protect the health and safety of both the applicator and public are provided on the back (BC Ministry of Environment, 2011).

Labels are also available from the Pest Management Regulatory Agency's online pesticide label search or mobile application as a separate document. These label documents may include booklets or material safety data sheets (MSDS) that provide additional information about a pesticide product. Restrictions on site conditions, soil types, and proximity to water may be listed. If the herbicide label is more restrictive than Provincial legislation, the label must be followed.

HERBICIDE OPTIONS

Although not specifically listed on the labels for the following herbicides, bamboo may be treated under the general application provision for perennial grasses. Information is from Whatcom County Noxious Weed Board (2023) and Czarnota & Derr (2007) unless otherwise noted. In field trials, imazapyr provided better control than glyphosate (Czarnota & Derr, 2007).

ACTIVE INGREDIENT (EXAMPLE BRAND NAMES)+	APPLICATION	PERSISTENCE*	GROWTH STAGE++	TYPE+++	COMMENT
Imazapyr (example: Arsenal™)	foliar application	residual	actively growing	non-selective	First cut stems to the ground, allow them to grow to 1 metre tall, and when new leaves expand, then spray the entire plant; may kill other woody plants and grasses that have roots extending into the treatment area; spray plants until they are just wet (thin film)
Glyphosate§ (many products)	foliar application	non-residual*	actively growing	non-selective	First cut stems to the ground, allow them to grow to 1 metre tall, and when new leaves expand, then spray the entire plant; multiple applications may be required for 2-3 years; avoid ready-to-use formulations available for the public with concentrations too low to be effective (Coyle, et al., 2019)

+ The mention of a specific product or brand name of pesticide in this document is not, and should not be construed as, an endorsement or recommendation for the use of that product.

++ Active growing periods vary from year to year depending on weather and other factors. There may be more than one active growing period for a plant in a year.

+++ Herbicides that control all vegetation are non-selective, while those that control certain types of vegetation (e.g., only grasses or only broadleaf plants) are termed selective.

§ Glyphosate can impact trees with roots within or adjacent to the treatment area.

* Non-residual herbicides are active only on growing plant tissue have little or no persistence in the soil whereas residual herbicides persist in the soil, remaining effective over an extended period.

APPLYING PESTICIDE IN RIPARIAN AREAS

Provincial legislation prohibits the use of herbicides within 10 metres of natural water courses and 30 metres of domestic or agricultural water sources on public lands. On private lands herbicide labels need to be followed (which means for glyphosate products treatment can happen up to the water's edge) and other restrictions may apply (e.g. industrial sites, forestry sites, golf courses, etc.). On public lands, glyphosate is the only active ingredient that can be applied within the 10 metre Pesticide-Free Zone (PFZ)[4] in British Columbia in accordance with the *Integrated Pest Management Act* all public land Pesticide Management Plans (PMPs). A plant must be either a listed Noxious Weed (under the *Weed Control Act*) or appear in the *Forest and Range Practices Act* Invasive Plants Regulation to be treated within the 10 metre PFZ. **Bamboo is not listed and therefore glyphosate and other herbicides can only be applied on bamboo up to 10 metres away from the high water mark (HWM)**[5]. The 30 metre no-treatment zone around a water supply intake or well used for domestic or agricultural purposes may be reduced if the licencee or PMP holder is "reasonably satisfied" that a smaller no-treatment zone is sufficient to ensure that pesticide from the use will not enter the intake or well.

When managing bamboo with herbicide in riparian areas:

- Observe and mark all PFZs while on site.
- The HWM should be determined by careful evaluation by the applicator.
- Distances in PFZs should be measured as horizontal distance.
- Herbicides restricted in a PFZ must not enter these zones by leaching (lateral mobility) through soil or by drift of spray mist or droplets.
- Treatments should be conducted when water levels are low (e.g. summer months) to reduce risk.
- Note that efficacy may be dependent on site conditions, including moisture in the soil.

4 The Pesticide-Free Zone (PFZ) is an area of land that must not be treated with pesticide and must be protected from pesticide moving into it, under the *Integrated Pest Management Act* and Regulation.

5 The High Water Mark (HWM) is defined as the visible high water mark of any lake, stream, wetland or other body of water where the presence and action of the water are so common and usual and so long continued in all ordinary years as to mark upon the soil of the bed of the lake, river stream, or other body of water a character distinct from that of the banks, both in vegetation and in the nature of the soil itself. Typical features may include, a natural line or "mark" impressed on the bank or shore, indicated by erosion, shelving, changes in soil characteristics, destruction of terrestrial vegetation, or other distinctive physical characteristics. The area below the high water mark includes the active floodplain (BC Ministry of Environment, 2011)..

APPLICATION METHODS

Foliar application can be undertaken by hand or backpack sprayer. This method is most effective as a follow-up treatment to cutting, after the culms have regrown to one metre tall, and the new leaves expand. Bamboo that has been chemically controlled should not be cut for at least two weeks after herbicide application (Whatcom County Noxious Weed Board, 2023). Single applications of herbicide with any product are not likely to provide control (Czarnota & Derr, 2007). Complete control using herbicide will likely take many years of treatments (Alabama Cooperative Extension System, 2020). Basal bark, cut stumps and stem injection treatments have not been evaluated for bamboo, and therefore those techniques are not recommended at this time (Coyle, et al., 2019).

BIOLOGICAL: NOT AVAILABLE

There are no biological control agents currently available for bamboo.

CONTROL SUMMARY

The following table provides a summary and comparison of control methods for butterfly bush.

CONTROL STRATEGY	TECHNIQUES	APPLICABLE SITE TYPE	PROS	CONS
Manual	**Digging**	Small stands of clumping and running bamboo	Selective, non-chemical, inexpensive	Labour intensive, regrowth may occur for several years, may create soil disturbance, must dispose of biomass
	Excavation	Large stands of clumping or running bamboo where heavy equipment is accessible	Non-chemical	Labour intensive, regrowth may occur for several years, requires trained staff and specialty equipment, expensive, causes soil disturbance, must dispose of biomass and possibly soil
	Repeated cutting or mowing	Any site	Selective, non-chemical	Labour intensive, regrowth may occur for several years, may require trained staff and specialty equipment, must dispose of biomass
	One-time cutting stems	Sites requiring immediate removal of stems, prior to some herbicide application	Selective, non-chemical	Labour intensive, regrowth will occur, not successful on its own, must dispose of biomass
	Root pruning	Running bamboo site	Selective, non-chemical, use with trenching method	Not successful on its own

Cultural	**Buffers**	Sites where containment is the goal or where full control cannot be accomplished	Non-chemical, least labour intensive of the cultural control methods, doesn't require installation of a material	May prevent spread or contain the infestation but not eradicate it, must be maintained
	Trenches		Non-chemical, doesn't required installation of a material	May prevent spread or contain the infestation but not eradicate it, must be monitored, possible tripping hazard
	Vertical Barriers		Non-chemical, can be used at sites where there is no space to instal a buffer or trench	May prevent spread or contain the infestation but not eradicate it, must be monitored, requires installation of a barrier material, difficult to establish an impenetrable barrier
Chemical	**Foliar application**	Any site	Effective as a follow-up to cutting, selective with appropriate herbicide and application, less labour intensive	Unintended environmental/health impacts, high public concern, weather dependent, requires trained staff, most successful when used with other methods
Manual	**Burning**	None		Not a recommended management option for this species
Cultural	**Covering**	None		
	Grazing	None		Not a suitable management option for this species
Biological	**No biological control agents are currently available for bamboo**			

CONTROL SUMMARY COLOUR LEGEND

GREEN: RECOMMENDED

ORANGE: CAUTION

RED: NOT RECOMMENDED OR NOT AVAILABLE

Disposal

Since bamboo spreads primarily through rhizomes, proper disposal is essential when control methods involve removing plant material (Diamond Head Consulting, 2019).

ON SITE DISPOSAL

Leaves pose no risk of spread (Butcher, 2024). Culms cut from rhizomes normally pose no risk of spread; however, if the lower nodes of culms of some running bamboo species have existing buds or roots growing from the nodes, they may continue to grow if they are buried in soil (Kigomo, 2007). Care should be taken to ensure culms are not left buried in the soil. Culms can be dried and used as plant stakes, supports, fencing or crafts (University of Maryland Extension, 2022). Rhizomes and roots exposed to soil can regrow and should not be left onsite.

OFF SITE DISPOSAL

In the Metro Vancouver region, several facilities accept bamboo plants and/or infested soil. Please consult this disposal facility list for current details.

PLEASE CONTACT ALL FACILITIES BEFOREHAND TO CONFIRM THEY CAN PROPERLY HANDLE THE MATERIAL.

CLEANING AND DISINFECTION[6]

Before leaving a site, all visible plant parts and soil from vehicles, equipment, and gear should be removed and rinsed if possible. When back at a works yard or wash station, vehicles should be cleaned and disinfected using the following steps:

- Wash with 180 °F water at 6 gpm, 2000 psi*, with a contact time of ≥ 10 seconds on all surfaces to remove dirt and organic matter such as vegetation parts or seeds. Pay special attention to undercarriages, chassis, wheel-wells, radiators, grills, tracks, buckets, chipboxes, blades, and flail-mowing chains.
- Use compressed air to remove vegetation from grills and radiators.
- Sweep/vacuum interior of vehicles paying special attention to floor mats, pedals, and seats.
- Steam clean poor access areas (e.g., inside trailer tubes) – 200 psi @ 300 °F (149°C).
- Fully rinse detergent residue from equipment before leaving the facility

* Appropriate self-serve and mobile hot power-wash companies in the Metro Vancouver area include: Omega Power Washing, Eco Klean Truck Wash, RG Truck Wash, Ravens Mobile Pressure Washing, Hydrotech Powerwashing, Platinum Pressure Washing Inc, and Alblaster Pressure Washing. Wash stations should be monitored regularly for bamboo growth.

6 Adapted from Metro Vancouver 2017 Water Services Equipment Cleaning Procedures and Inspection Protocols.

Follow-up Monitoring

Whatever control method is used, follow-up monitoring and maintenance treatments are components of an integrated management plan or approach. Sites that have been manually or mechanically controlled (especially digging, excavation and cutting) should be carefully monitored for at least three years after treatment (Whatcom County Noxious Weed Board, 2023; Butcher, 2024). Any rhizome and roots fragments left in the soil can resprout (Coyle, et al., 2019).

Restoration

Restoration of bamboo sites after treatment may not be necessary depending on the site, size of the grove, and control methods used (Diamond Head Consulting, 2019). Methods involving soil disturbance should be evaluated for restoration.

Examples of common competitive native species prescribed in Metro Vancouver sites are summarized in the table below based on site moisture.

WET SITES	MOIST SITES	DRY SITES
SHRUBS		
Salmonberry	Salmonberry	Thimbleberry
Hardhack	Willow	Nootka rose
Willow	Red osier dogwood	Red flowering currant
Red osier dogwood	Red elderberry	Snowberry
Pacific ninebark	Vine maple	Tall Oregon grape
	Indian plum	Oceanspray
TREES		
Western red cedar	Western red cedar	Douglas-fir
Red alder	Red alder	Red alder

Replacement species should be chosen based on the ecology of the site by a qualified environmental professional. Local biologists, environmental professionals, agronomists, agrologists, native and domestic forage specialists, seed companies, and plant nurseries are all good sources for localized recommendations for regional native species and regionally adapted domestic species, based on site usage. Native grass seed mixes are also available. There are several science-based resources available to guide restoration efforts, such as the South Coast Conservation Program's Diversity by Design restoration planning toolkit.

Revegetation of the site to a domestic or cultured non-native plant species composition may be considered in some circumstances. Often domestic species establish faster and grow more prolifically, which aids in resisting bamboo re-invasion.

Bamboo sites are often found in areas with existing, or potential, wildlife populations (e.g., deer, beaver, muskrat, vole, etc.) that can damage restoration plantings. Therefore, any revegetation plan must consider impacts from wildlife and utilize appropriate mitigation measures to protect the restoration and existing native plantings (e.g., tree wrapping, exclusion caging/fencing, vole guards, etc.).

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Additional Resources

For more information please refer to the following resources.

- BC Ministry of Forests, Lands, and Natural Resource Operations, Invasive Alien Plant Program (IAPP). www.gov.bc.ca/invasive-species
- Buziquia, S. T., Freitas Lopes, P. V., Almeida, A. K., & de Almeida, I. K. (2019). Impacts of bam-boo spreading: a review. Biodiversity and Conservation. [For history, use and impacts of bam-boo]
- Diamond Head Consulting. (2019). City of Burnaby - Best Management Practices for Bamboo Species. Vancouver. [available from the City of Burnaby]
- Grow Green Guide. www.growgreenguide.ca
- Grow Me Instead. http://bcinvasives.ca/resources/programs/plant-wise/
- Pesticides and Pest Management. Province of British Columbia https://www2.gov.bc.ca/gov/content/environment/pesticides-pest-management

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To submit edits or additions to this report, contact Laurie Bates-Frymel, Senior Planner at 604-436-6787 or laurie.bates-frymel@metrovancouver.org.

Running bamboo encroaching onto a sidewalk
CREDIT: ISCMV

Running bamboo growing next to a foundation
CREDIT: ISCMV


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Prunus laurocerasus

BEST MANAGEMENT PRACTICES FOR

Cherry Laurel

in the Metro Vancouver Region

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Metrotower III, 4515 Central Boulevard,
Burnaby, BC, V5H 0C6
metrovancouver.org

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Contents

CREDIT: ISCMV

Introduction

The impacts of invasive species on ecological, human, and economic health are of concern in the Metro Vancouver region. Successful control of invasive species requires concerted and targeted efforts by many players. This document - "**Best Management Practices for Cherry Laurel in the Metro Vancouver Region**" - is one of a series of species-specific guides developed for use by practitioners (e.g., local government staff, crews, project managers, contractors, consultants, developers, stewardship groups, and others who have a role in invasive species management) in the region. Together, these best practices provide a compendium of guidance that has been tested locally by many researchers and operational experts.

Cherry laurel[1] is a fast-growing woody evergreen tree or shrub that is a commonly used as an ornamental hedge plant (Klinkenberg, 2020). It is native to southwestern Asia and southeastern Europe, in areas surrounding the Black Sea including Turkey, Serbia, Bulgaria, the Caucasus and Iran (Schulze, Contreras, & Scagel, 2017) (Chwil, Kostryco, & Matraszek-Gawron , 2019) and has been widely introduced in other parts of Europe, Australia and in North America west of the Cascade Mountains (State of Victoria - Agriculture Victoria, 2020).

Despite the toxicity of the leaves, stems and seeds, cherry laurel is a popular fruit, medicinal, and horticulture plant in many parts of the world and researchers and plant breeders have attempted to create cultivars with disease resistance and increased fertility (Schulze & Contreras, 2017) (Contreras, 2017). It is available in over 45 different cultivars, developed to emphasize different growth forms and leaf colours (Contreras, Doane, & Friddle, 2010). Ironically, much of the research conducted on cherry laurel worldwide has focused on improving propagation success, as opposed to management in areas where it is considered invasive.

Cherry laurel has escaped cultivation in many areas, including southwestern BC. The plant grows quickly, is tolerant of a wide range of growing conditions, and can easily invade new habitats via abundant fruit production and dispersal by birds and small mammals (Rusterholz, Schneuwly, & Baur, 2018). It is readily sold in garden centres in southwestern BC and Vancouver Island. Although it is found in locations throughout the Metro Vancouver region, it is not yet widespread and management can influence the spread of this species in the region and beyond (Evergreen, 2010).

Academic institutions, government, and non-government organizations continue to study this species in British Columbia. As researchers and practitioners learn more about the biology and control of cherry laurel, it is anticipated that the recommended best management practices will change. This document will be updated to reflect these changes as the information becomes available. Please check metrovancouver.org regularly to obtain the most recent version of these best management practices.

1 *Prunus laurocerasus* is also known by the common names cherry-laurel, cherrylaurel, English laurel, and common laurel (Schulze, Contreras, & Scagel, 2017). It is referred to as 'cherry laurel' in this document. The name laurel is derived from its resemblance to the true laurel tree (King County, 2021).

REGULATORY STATUS

Although cherry laurel is not regulated anywhere in British Columbia, it is included on the Province's *Invasive Trees in British Columbia*, a list of invasive or potential tree species of concern confirmed by the BC Ministry of Forests' Invasive Plant Program and the BC Inter-Ministry Invasive Species Working Group. Provincial staff are currently undertaking a risk assessment for cherry laurel (BC Ministry of Forests, 2022). The Invasive Species Council of Metro Vancouver considers cherry laurel a priority invasive species in the Metro Vancouver region.

IMPACTS

Indigenous Peoples have an intrinsic relationship with the natural world, built on reciprocity and stewardship. Many native plants and animals have cultural and spiritual significance for Indigenous Peoples, in addition to being important food and medicine sources. Indigenous communities in British Columbia have collectively called for invasive species prevention, management, and control due to their impact on infrastructure, the economy, human health, ecosystems, and cultural practices. Further collaboration with Indigenous Peoples will deepen our understanding about the impacts of invasive species, such as cherry laurel, on Indigenous ways of life and our shared environment.

Cherry laurel is a strong plant competitor and can grow up to 30 centimetres per year in ideal conditions (Evergreen, 2010). In forests, cherry laurel competes with native plants, by forming a dense cover that shades tree seedlings and shrubs (Evergreen, 2010). Over time it shades out understorey vegetation and prevents forest regeneration (Kent Wildlife Trust, 2023). As a result, there is a lower number of native ground cover plants and shrubs in forests where cherry laurel grows (Ries, Pfeiffenschneider, & Krippel, 2024). The presence of cherry laurel also lowers the soil moisture content and changes the activity and composition of soil microbes (Rusterholz, Schneuwly, & Baur, 2018).

Large, overgrown cherry laurel hedge

CREDIT: ISCMV

In residential or private property settings, cherry laurel hedges can quickly become a challenge for landowners to control, as the plants may require significant maintenance or removal (Sea to Sky Invasive Species Council, 2022). When used as a hedge or ornamental shrub, fruit litter can be unsightly and further contribute to its spread in urban and natural areas (Contreras, Doane, & Friddle, 2010).

Cherry laurel employs several defense mechanisms that allow it to evade predators and thereby contribute to its success in its introduced habitat in the Pacific Northwest (Kautz, Williams, & Ballhorn, 2017). For example, it produces extrafloral nectar (nectar secreted from plant parts other than flowers) that attracts predatory insects (such as ants), thereby deterring other insects that may consume the foliage (Kautz, Williams, & Ballhorn, 2017). Cherry laurel can also exhibit cyanogenesis, the release of toxic cyanide gases, which deters insect herbivores (Kautz, Williams, & Ballhorn, 2017).

Cherry laurel contains cyanide, which is toxic to mammals and some invertebrates. Ingesting leaves, stems and seeds may cause cyanide poisoning characterized by gasping, weakness, pupil dilation, muscle spasms, coma, or even respiratory failure (North Carolina Cooperative Extension, 2024). Wilted or damaged plant parts are even more toxic (North Carolina Cooperative Extension, 2024). Livestock and other animals including invertebrates find cherry laurel unpalatable (Kent Wildlife Trust, 2023).

In addition, cherry laurel is a potential vector for various *Phytophthora* plant pathogens, including *Phytophthora ramorum*, responsible for sudden oak death (Ries, Pfeiffenschneider, & Krippel, 2024). The fruit can be a host to the western cherry fruit fly (*Rhagoletis indifferens*), an invasive insect that impacts crops (Contreras, Potential to become invasive provokes need for sterile shrubs, 2011).

REPRODUCTION AND SPREAD

Many cherry laurel cultivars are readily available in nurseries in BC and other parts of the world (Ries, Pfeiffenschneider, & Krippel, 2024). Reproduction is primarily by birds and small mammals who ingest the fleshy fruits and disperse the seeds long distance (King County, 2021) (Rusterholz, Schneuwly, & Baur, 2018). Cherry laurel also spreads by layering when roots grow laterally from stems that touch the ground (King County, 2021). When cut, shoots will grow from the cut surface and suckers will form from the roots (King County, 2021). Cuttings can easily and quickly root and propagate new plants; this is a common form of propagation in the horticulture industry (Schulze, Contreras, & Scagel, 2017). There is risk of spread in natural areas if cherry laurel clippings are illegally dumped.

HABITAT AND DISTRIBUTION

Cherry laurel is tolerant of disturbance, pollution, and a wide range of soil and moisture conditions (King County, 2021) (North Carolina Cooperative Extension, 2024) (Contreras, Doane, & Friddle, 2010). It grows in full sun or dense shade with little direct light (State of Victoria - Agriculture Victoria, 2020). It easily invades undisturbed habitats, escaping into remote areas, but is most common in forests and parks adjacent to developed areas (King County, 2021). It is often found with a mix of native and non-native species (King County, 2021).

Outside its native range of southwestern Asia and eastern Europe, cherry laurel has escaped cultivation and is invasive in other parts of Europe, Australia and along the Pacific west coast in British Columbia and Washington, Oregon and California (King County, 2021). In BC, cherry laurel is primarily found in the southwestern portion of the province (Klinkenberg, 2020). Although it is found throughout the Metro Vancouver region, it is not yet prolific and management can influence the spread of this species in the region and beyond (Evergreen, 2010). There are no reports of cherry laurel in the Sea to Sky region and invasive species experts there are keen to keep it out (Sea to Sky Invasive Species Council, 2022).

CLIMATE CHANGE ADAPTATION

Climate models predict that the Metro Vancouver region will experience warmer temperatures; a decrease in snowpack; longer dry spells in summer months; more precipitation in autumn, winter, and spring; more intense extreme events; and an extended growing season. In the past, our region had an average of 252 days in the growing season. In lower elevations, 45 days will be added to the growing season by the 2050s, and 56 days by the 2080s, resulting in nearly a year-round growing season of 357 days on average. In higher elevation ecosystems the growing season length will increase by 50% to 325 days by the 2080s (Metro Vancouver, 2016). These changes will stress many sensitive ecosystems, increasing their vulnerability to competition from invasive species.

Cherry laurel's ability to survive in a variety of conditions and habitats, and its widespread distribution around the world will likely influence its ability to adapt to future climate changes. It is speculated that this plant may benefit from our future climate in several ways:

- **Carbon dioxide levels:** Elevated atmospheric carbon dioxide concentrations favour cherry laurel growth and may contribute to its spread in forests (Hättenschwiler & Körner, 2003).
- **Extreme temperature and drought tolerance:** Cherry laurel has been categorized as highly tolerant to heat, frost, and drought (Yener, Akdeniz, & Zencirkiran, 2020; State of Victoria - Agriculture Victoria, 2020; Percival & Sheriffs, 2002).
- **Fire disturbance:** Cherry laurel plants can resprout after wildfires (State of Victoria - Agriculture Victoria, 2020).

With these kinds of competitive advantages, this species is more adaptable than native species in a variety of ecosystems. Its ability to reproduce in multiple ways and ability to spread quickly suggest that it will be able to withstand, and possibly thrive, with changing climate conditions.

Identification

Unless otherwise noted, the following identification information was collected from King County (2021) and Klinkenberg (2020).

Lifecycle: Erect, spreading, woody, perennial shrub or tree (State of Victoria - Agriculture Victoria, 2020); plants grow up to 10 metres tall and 8 metres across (Kautz, Williams, & Ballhorn, 2017).

Stem: Twigs are green and smooth and have a bitter almond odour when crushed (North Carolina Cooperative Extension, 2024); bark becomes woody and brown as the plant grows; buds at the ends of twigs are light green.

Leaves: Simple, alternate, evergreen, thick, dark green and shiny on top, pale green underneath, 5-20 centimetres long, oblong-shaped coming abruptly to a point at the tip; finely toothed edges and short leaf stalks; there are 2-8 conspicuous glands on the underside of leaves next to the midrib (North Carolina Cooperative Extension, 2024).

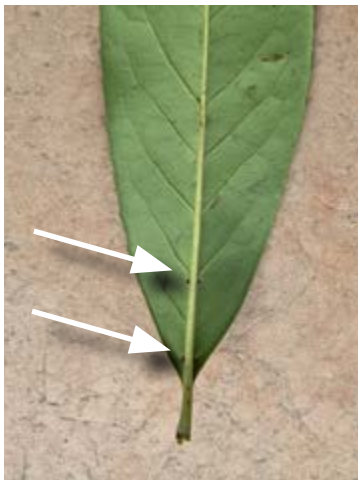
Flowers: Small, white, fragrant flowers in upright clusters (racemes) 6-10 millimetres wide and 5-10 centimetres long; individual flowers have 5 petals and many yellow stamens, resembling cherry tree flowers; flowers form in mid-spring.

Fruits: Small, purple-black drupes (cherries) form in clusters in mid-summer; each cherry is 10-15 millimetres long and contains one pit (seed) shaped like a water droplet; pits are poisonous to humans, although birds and other animals consume them.

The following photos show cherry laurel parts.

Bark
CREDIT: ISCMV

Top of leaf
CREDIT: ISCMV



Underside of leaf (the arrows indicate the glands)
CREDIT: ISCMV

Alternate leaf arrangement
CREDIT: ISCMV

Flowerheads grow upright from branches
CREDIT: ISCMV

Flowers
CREDIT: ISCMV

Drupes (fruits)
CREDIT: MANUEL M. V. VIA FLICKR

Dried pits from the inside of the fruits
CREDIT: ISCMV

SIMILAR SPECIES

The species most commonly mistaken for cherry laurel are listed below.

NATIVE SPECIES

- **Pacific rhododendron (*Rhododendron macrophyllum*)** shrubs are 1-8 metres tall with evergreen, leathery, oblong-elliptic, 8-20 centimetre-long leaves and many bright pink to purple bell-shaped flowers up to 5 centimetres wide in terminal clusters (Klinkenberg, 2020).

Pacific rhododendron

CREDIT: I. GASIOR

NON NATIVE SPECIES

- **Bay laurel/bay leaf tree (*Laurus nobilis*)** is an aromatic, evergreen tree or large shrub with a distinctive pyramidal growth form (Klinkenberg, 2020). It has leathery, glossy dark green oval leaves commonly used as a culinary herb with purple berries in early summer (Klinkenberg, 2020). True bay leaves used in cooking come from this plant.
- **Portuguese laurel (*Prunus lusitanica*)** is a small evergreen shrub from Portugal, Spain, and the Canary Islands (Contreras, Doane, & Friddle, 2010). It grows up to 5 metres with leaves up to 12 centimetres long and pointed, with finely jagged edges and pointed tips. Like cherry laurel the flowers are small, white, fragrant and grow in racemes. It shares many of the same sun, shade and soil adaptabilities as cherry laurel (Contreras, Doane, & Friddle, 2010) and is thought to have a similar invasive potential to cherry laurel (Contreras, 2017). Although not regulated, it is also considered invasive in the Metro Vancouver region.
- **Spurge/Daphne laurel (*Daphne laureola*)** is a perennial evergreen shrub that was introduced to North American as an ornamental plant. It grows 0.4-1.5 metres tall, resembling small trees. Evergreen, thick, waxy, smooth leaves grow in dense whorls at the ends of stems. Small, sweetly scented, tubular shaped flowers are pale yellow-green and form in clusters of 5-20 found at the base of the leaves at the tops of stems. It contains toxins that can cause health impacts in human and animals, including death if ingested. This invasive species is common in southwestern coastal BC. More information on this species can be found in the Best Management Practices for Spurge Laurel in the Metro Vancouver Region.

Bay laurel

CREDIT: F. & K. STAFF, FLICKR

Portuguese laurel

CREDIT: J. S JACKSON, FLICKR

Spurge/Daphne laurel

CREDIT: CITY OF SURREY

Tracking

The provincial government maintains InvasivesBC, an invasive species database, map and mobile data collection application available for use by all land managers, contractors, government agencies and non-profit organizations completing surveys and/or management activities on invasive species in BC. Many agencies, including local governments, have their own internal invasive species inventory and mapping protocols that are used by staff, contractors, and, in some cases, the public. For example, the City of North Vancouver has its own system called AlienMap. Agencies in British Columbia that do not enter data into IAPP are encouraged to check it regularly because it contains public reports and data from other agencies and it is important to consider as much data as possible when making management decisions. The Map Display module of IAPP is publicly accessible.

When carrying out a cherry laurel inventory it is useful to record the following information as it will later inform treatment plans:

- Size and density of infestation;
- Location in relation to the 10 metre Pesticide Free Zone adjacent to water courses;
- Location in relation to other water sources, such as wells.

Reporting

Since cherry laurel is widespread throughout the Metro Vancouver region and commonly found on private property, there is generally little value in reporting individual occurrences.

Prevention and Control Strategies

Effective invasive plant management may include a variety of control techniques ranging from prevention, chemical, manual, mechanical, biological, and/or cultural methods. Each method is described below in order of effectiveness.

Since the impacts to native plants are more pronounced with time after the establishment of cherry laurel, and large plants are more difficult to manage, removing young plants first is an effective management strategy (Rusterholz, Schneuwly, & Baur, 2018).

HANDLING CHERRY LAUREL SAFELY

Although the seeds, leaves and bark of cherry laurel are all poisonous (Evergreen, 2010), the greatest health risk is ingestion of the seeds (or ingesting entire cherries with seeds). Use caution at sites with children and pets present to prevent the ingestion of the cherries. When handling cherry laurel, wear gloves and protective clothing. Wash hands thoroughly after management activities and before eating.

STRATEGY COLOUR LEGEND

GREEN: RECOMMENDED

ORANGE: CAUTION

RED: NOT RECOMMENDED OR NOT AVAILABLE

PREVENTION: IMPERATIVE

Prevention is the most economical and effective way to reduce the spread of cherry laurel over the long term.

When working in or adjacent to cherry laurel, it is best to inspect and remove plants, plant parts, and seeds from personal gear, clothing, pets, vehicles, and equipment and ensure soil, gravel, and other fill materials are not contaminated with cherry laurel before leaving an infested area. Plants, plant parts, and seeds should be tarped or bagged before transport to an appropriate disposal site (see Disposal section).

When selecting plants for a site, do not purchase, trade, or transplant cherry laurel. The Invasive Species Council of BC's 'Grow Me Instead' Program or Metro Vancouver's Grow Green website provide recommendations for non-invasive, drought-tolerant plants, and garden design ideas. Cherry laurel is often sought as a border or hedge plant and alternatives are available that can provide a similar continuous hedge or screen.

All materials (e.g., topsoil, gravel, mulch, compost, wood chips, plant stock) should be weed-free. Cherry laurel can be introduced via these materials and sites where they are used should be monitored carefully for any growth (Crosby, 2018). Healthy green spaces are more resistant to invasion by invasive plants, so it is also important to maintain or establish healthy plant communities.

MANUAL/MECHANICAL: RECOMMENDED

- **Pulling** by hand when the soil is moist is effective for seedlings or small plants (King County, 2021). It is best to remove as much of the plant, including roots, as possible.
- **Cutting plus stump management** can be used to manage larger plants. Stems and trunks can be cut using a hand tool or chainsaw as close to the ground as possible (King County, 2021). Severed branches and stems exposed to moist soil may produce roots and continue growing and should be removed offsite (King County, 2021). Cherry laurel can withstand heavy pruning (State of Victoria -Agriculture Victoria, 2020) and it takes several years of persistent cutting of all the above-ground branches before the plant completely exhausts and dies (Plavčak, Mikac, & Merela, 2021) so cutting alone is not recommended. Cut stumps should be managed in one of several ways:
  - **Cutting plus removing new stems** that re-grow from the cut surface. Shoots that grow from the cut surface should be broken or cut off. It is best to monitor the surface regularly throughout the growing season for several years until the plant stops producing new shoots (King County, 2021). Younger plants will produce more shoots than older plants (King County, 2021).
  - **Cutting plus digging out the stumps** to remove as much root material as possible (King County, 2021). A machine, such as an excavator, may be required to dig out large stumps. To avoid re-growth, dispose of the stumps offsite or turn them upside down and remove the soil from the roots. Removal of the stump may leave a hole in the ground, which should be filled with soil or replacement trees or shrubs to stabilize the area, prevent erosion, and avoid a safety hazard (King County, 2021). Stump removal is time-consuming and causes soil disturbance (King County, 2021). This method is not recommended for large infestations or steep slopes (King County, 2021).
  - **Cutting plus herbicide application to cut stump (cut stump application)** can be effective to reduce regrowth. See Chemical Control section for more information about herbicide application.

If any remaining stump material is left in the ground, the site should be monitored for regrowth.

- **Girdling** is effective in supressing cherry laurel and can eventually cause plant death (Plavčak, Mikac, & Merela, 2021). Girdling is often applied around the entire circumference of a trunk, but Plavčak, Mikac, & Merela (2021) found that cherry laurel survivability was significantly reduced if girdled up to ¾ of the circumference of the trunk (called incomplete girdling). Complete girdling was less effective because sprouts grew more readily below the wound when tissue above the injured (girdled) area died quickly. Incomplete girdling avoids this by causing a slower plant death with lower risk of sprouts forming (Plavčak, Mikac, & Merela, 2021).

  It is best to use a sharp knife, hatchet, or similar tool to slice through the outer bark of the plant. The same tool or a flat shovel can be used to pry the bark off in a ring ¾ of the circumference around the trunk.

  After girdling, the wounded portion of the tree weakens over time, causing the stem to crack and break (Plavčak, Mikac, & Merela, 2021). This process may take several years and there is a risk of branches or trees falling once dead. For large cherry laurel trees, this method should be conducted or overseen by an arborist or equivalent professional to monitor the integrity of the tree and advise on safe removal of branches and the trunk.

Example of a girdled tree. Note that this is not a cherry laurel tree.

CREDIT: G. CZIKO, FLICKR

- **Flower removal** can prevent seed production, but this method is time-consuming and not viable for large infestations or trees taller than 6 metres with many branches (Evergreen, 2010). The flowering branches should be cut before the fruits form.

REMOVAL TIMING

Cherry laurel can be removed throughout the year. However, as cherries can persist for many months, undertaking manual control methods prior to fruit maturation is ideal. Often cherry laurel is managed by crews during the winter months, as other high priority plants are targeted during the spring and summer and cherry laurel management is possible in the winter (Hendel, 2024). One advantage of conducting management in the winter is that cherry laurel is easy to spot and access in forests since deciduous plants will have lost their leaves. Caution must be taken to avoid disturbing wildlife throughout the year, especially birds that may feed on or use cherry laurel for perching and cover.

APPLYING MANUAL/MECHANICAL CONTROL METHODS IN RIPARIAN AREAS

Cherry laurel often grows in large contiguous patches right up to the edge of water courses. Consider the impact of control techniques and the resulting bare soil on the adjacent aquatic environment. Schedule removal works during a period of least risk to fish species, outside of the fish window. Adhere to Provincial and Federal riparian regulations. It is recommended to consult with a qualified environmental professional when working around water bodies.

CHEMICAL: CAUTION

When alternative methods to prevent or control invasive plants are unsuccessful, professionals often turn to herbicides.

This method should be used with caution for the following reasons (Crosby, 2018):

1. Weather conditions greatly influence treatment efficacy;
2. Cherry laurel often grows in riparian areas where pesticide use is restricted; and
3. Since cherry laurel growth is closely associated with other plants, chemical control can easily damage non-target species (Province of BC, 2002).

With the exception of substances listed on Schedule 2 of the BC Integrated Pest Management Regulation, the use of herbicides is highly regulated in British Columbia. Site characteristics must be considered with herbicide prescribed, based on site goals and objectives and in accordance with legal requirements. This summary of BC's *Integrated Pest Management Act* provides an overview of the provincial legislation.

Pesticides (e.g., herbicides, insecticides, fungicides) are regulated by the Federal and Provincial governments, and municipal governments often have pesticide bylaws.

- Health Canada evaluates and approves chemical pest control products as per the *Pest Control Products Act*.
- The BC *Integrated Pest Management Act* sets out the requirements for the use and sale of pesticides in British Columbia. This Act is administered by the Ministry of Environment and Climate Change Strategy.
- Several municipalities have adopted bylaws that prohibit the use of certain pesticides.

Everyone who uses pesticides must be familiar with all relevant laws.

PESTICIDE LICENCE AND CERTIFICATION

A valid pesticide licence is required to:

- offer a service to apply most pesticides;
- apply most pesticides on public land including local government lands[2] ; and
- apply pesticides to landscaped areas on private land, including outside office buildings and other facilities.

2 on up to 50 hectares/year by a single organization. Organizations looking to treat over 50 hectares of land per year are also required to submit a Pest Management Plan and obtain a Pesticide Use Notice confirmation.

ONLY companies or practitioners with a valid Pesticide Licence and staff who are certified applicators (or working under a certified applicator) may apply herbicide on invasive plants located on public lands in British Columbia. Applicators must be either the land manager/owner or have permission from the land manager/owner prior to herbicide application.

On private property the owner may obtain a Residential Applicators Certificate (for Domestic class products only) or use a qualified company. Residents do not require a Residential Applicator Certificate for certain uses of domestic class glyphosate including treatment of plants that are poisonous for people to touch, invasive plants and noxious weeds listed in legislation, and weeds growing through cracks in hard surfaces such as asphalt or concrete. Refer to the 'Pesticides & Pest Management' and 'Home Pesticide Use' webpages listed in the Additional Resources Section for more information.

Questions? Contact the BC Integrated Pest Management Program: Telephone: (250) 387-9537

Email: bc.ipm@gov.bc.ca

Pesticide applicator certificates can be obtained under the category 'Industrial Vegetation Management' to manage weeds on industrial land, roads, power lines, railways, and pipeline rights-of-way for control of noxious weeds on private or public land. However, since cherry laurel is not a regulated noxious weed in the Metro Vancouver region, the 'Landscape' certification category is needed for herbicide use on public and private lands. Assistant applicator training is also available and the online course and exam are free.

It is best practice for personnel supervising or monitoring pesticide contracts to also maintain a pesticide applicator licence so they are familiar with certification requirements.

For more information on how to obtain a licence and the requirements when working under the provincial *Integrated Pest Management Act* and Regulation, please review the Noxious Weed & Vegetation Management section on this webpage: gov.bc.ca/PestManagement.

HERBICIDE LABELS

Individual herbicide labels must always be reviewed thoroughly prior to use to ensure precautions, application rates, and all use directions, specific site and application directions are strictly followed. Under the federal *Pest Control Products Act* and the BC Integrated Pest Management Regulation, **persons are legally required to use pesticides (including herbicides) only for the use described on the label and in accordance with the instructions on that label**. Failure to follow label directions could cause damage to the environment, create poor control results, or pose a danger to health. Contravention of laws and regulations may lead to cancellation or suspension of a licence or certification, requirement to obtain a qualified monitor to assess work, additional reporting requirements, a stop work order, or prohibition from acquiring authorization in the future. A conviction of an offence under legislation may also carry a fine or imprisonment.

Herbicide labels include information on both the front and back. The front typically includes trade or product name, formulation, class, purpose, registration number, and precautionary symbols. Instructions on how to use the pesticide and what to do in order to protect the health and safety of both the applicator and public are provided on the back (BC Ministry of Environment, 2011).

Labels are also available from the Pest Management Regulatory Agency's online pesticide label search or mobile application as a separate document. These label documents may include booklets or material safety data sheets (MSDS) that provide additional information about a pesticide product. Restrictions on site conditions, soil types, and proximity to water may be listed. If the herbicide label is more restrictive than Provincial legislation, the label must be followed.

HERBICIDE OPTIONS

Although not specifically listed on the labels for the following herbicides, cherry laurel may be treated under the general application provision for woody plants. Information is from King County (2021) and Hood Canal Cooperative Weed Management Area (2024).

ACTIVE INGREDIENT (EXAMPLE BRAND NAMES)+	APPLICATION	PERSISTENCE	GROWTH STAGE++	TYPE+++
Glyphosate § (many products)	cut stump, stem injection, foliar application	non-residual*	actively growing	non-selective
Triclopyr (example: Garlon™)	cut stump, frilling, foliar application	residual	actively growing (just before cut)	selective, no effect on grasses
Imazapyr (example: Arsenal™)	cut stump, frilling, foliar application	residual	actively growing (just before cut)	non-selective

+ The mention of a specific product or brand name of pesticide in this document is not, and should not be construed as, an endorsement or recommendation for the use of that product.

++ Active growing periods vary from year to year depending on weather and other factors. There may be more than one active growing period for a plant in a year.

+++ Herbicides that control all vegetation are non-selective, while those that control certain types of vegetation (e.g., only grasses or only broadleaf plants) are termed selective.

§ Glyphosate can impact other trees with roots within or adjacent to the treatment area.

* Non-residual herbicides are active only on growing plant tissue and have little or no persistence in the soil whereas residual herbicides persist in the soil, remaining effective over an extended period.

APPLYING PESTICIDE IN RIPARIAN AREAS

Provincial legislation prohibits the use of herbicides within 10 metres of natural water courses and 30 metres of domestic or agricultural water sources on public lands. On private lands herbicide labels need to be followed (which means for glyphosate products treatment can happen up to the water's edge) and other restrictions may apply (e.g. industrial sites, forestry sites, golf courses, etc.). On public lands, glyphosate is the only active ingredient that can be applied within the 10 metre Pesticide-Free Zone (PFZ)[3] in British Columbia in accordance with the *Integrated Pest Management Act* and Regulation and all public land Pesticide Management Plans (PMPs). A plant must be either a listed Noxious Weed (under the *Weed Control Act*) or appear in the *Forest and Range Practices Act* Invasive Plants Regulation to be treated within the 10 metre PFZ. **Cherry laurel is not listed and therefore glyphosate and other herbicides can only be applied on cherry laurel up to 10 metres away from the high water mark (HWM)[4]**. The 30 metre no-treatment zone around a water supply intake or well used for domestic or agricultural purposes may be reduced if the licencee or PMP holder is "reasonably satisfied" that a smaller no-treatment zone is sufficient to ensure that pesticide from the use will not enter the intake or well.

When managing cherry laurel with herbicide in riparian areas:

- Observe and mark all PFZs while on site.
- The HWM should be determined by careful evaluation by the applicator.
- Distances in PFZs should be measured as horizontal distance.
- Herbicides restricted in a PFZ must not enter these zones by leaching (lateral mobility) through soil or by drift of spray mist or droplets.
- Treatments should be conducted when water levels are low (e.g. summer months) to reduce risk.
- Note that efficacy may be dependent on site conditions, including moisture in the soil.

3 The Pesticide-Free Zone (PFZ) is an area of land that must not be treated with pesticide and must be protected from pesticide moving into it, under the *Integrated Pest Management Act* and Regulation.

4 The High Water Mark (HWM) is defined as the visible high water mark of any lake, stream, wetland or other body of water where the presence and action of the water are so common and usual and so long continued in all ordinary years as to mark upon the soil of the bed of the lake, river stream, or other body of water a character distinct from that of the banks, both in vegetation and in the nature of the soil itself. Typical features may include, a natural line or "mark" impressed on the bank or shore, indicated by erosion, shelving, changes in soil characteristics, destruction of terrestrial vegetation, or other distinctive physical characteristics. The area below the high water mark includes the active floodplain (BC Ministry of Environment, 2011).

APPLICATION METHODS

Herbicide may be applied to cherry laurel using the following methods:

- **Cut stump application** can be used for large plants in combination with cutting (see Manual/Mechanical Control section for additional information on cutting). The plant should be cut as close to the ground as possible (Hood Canal Cooperative Weed Management Area, 2024). Immediately after cutting the trunk, the cut surface of the stump should be painted or sprayed with herbicide (King County, 2021). If there is a delay in applying herbicide after cutting the stump and new shoots form, they can also be sprayed (a surfactant is recommended) (King County, 2021).
- **Frilling** (also called hack and squirt) involves chipping notches around the trunk and applying herbicide to the fresh cuts (King County, 2021). This method can be used on large plants that have not been cut down (King County, 2021). Notches can be made using a chainsaw, hand saw or hatchet (Hood Canal Cooperative Weed Management Area, 2024). Cuts should be made around the trunk, below the last living branch (Hood Canal Cooperative Weed Management Area, 2024). Herbicide should be sprayed or applied to the exposed area of the trunk according to the herbicide label.
- **Stem injection** can be used on large plants that have not been cut down (King County, 2021). This method involves the insertion of herbicide-filled capsules or shells evenly around the base of the trunk with an injection lance (such as EZ-Ject®). The number of capsules injected into the trunk depends on the herbicide product and the DBH (diameter at breast height) (EZ-Ject®, 2024). The capsules must penetrate through the outer layer of bark into the next tissue layer to be effective (EZ-Ject®, 2024). All branches should be removed below the application point. This method can be used year-round and in all weather conditions except when the bark is frozen (EZ-Ject®, 2024). This method may require several weeks or months to show signs of plant death and death of surrounding sprouts.
- **Foliar application** can be used for seedlings but is not recommended for larger plants due to the thick, waxy leaves that reduce herbicide absorption (King County, 2021). The addition of a surfactant may improve absorption (King County, 2021).

CULTURAL: NOT AVAILABLE

There are no documented cultural control methods for cherry laurel. Due to the toxicity of cherry laurel, targeted grazing is not a suitable management option for this species. Cherry laurel is also reported to be unpalatable to livestock (State of Victoria - Agriculture Victoria, 2020).

BIOLOGICAL: NOT AVAILABLE

There are currently no biocontrol options available in British Columbia for cherry laurel. Although the plant is susceptible to bacterial and fungal pathogens (Schulze & Contreras, 2017), this characteristic has not been investigated for biological control.

CONTROL SUMMARY COLOUR LEGEND

GREEN: RECOMMENDED

ORANGE: CAUTION

RED: NOT RECOMMENDED OR NOT AVAILABLE

CONTROL SUMMARY

The following table provides a summary and comparison of control methods for cherry laurel.

CONTROL STRATEGY	TECHNIQUES	APPLICABLE SITE TYPE	PROS	CONS
Manual	**Pulling**	Seedlings or small plants	Selective, non-chemical, can be managed by volunteers, inexpensive	Labour intensive, may create soil disturbance, must remove entire plant, must deal with biomass
	Cutting plus removing new stems from stump	Mature plants, trees	Selective, non-chemical	Labour intensive, regrowth may occur for several years
Manual/ Mechanical	**Cutting plus digging out stumps**	Mature plants, trees; areas accessible by machine	Non-chemical	Labour intensive, causes soil disturbance, regrowth will occur if stump is not removed entirely, may require trained staff or specialty equipment
Chemical	**Cut stump application**	Mature plants, trees	Selective with appropriate herbicide and application, may prevent regrowth of cut stems, less disturbance of surrounding environment	Unintended environmental/health impacts, high public concern, weather dependent, requires trained staff
Manual	**Girdling**	Mature plants, trees	Selective, non-chemical	Plant death is slow and may take several years, requires trained staff
	Flower removal	All plants with flowering branches within reach	Selective, non-chemical, prevents seed production	Will not kill the plants
Chemical	**Filling**	Mature plants that have not been cut down	Selective with appropriate herbicide and application, less disturbance of surrounding environment	Unintended environmental/health impacts, high public concern, weather dependent, requires trained staff, requires specialized equipment and herbicide
	Stem injection	All plants except seedlings that have not been cut down	Selective with appropriate herbicide and application, can be used all year and in all weather conditions except freezing, less disturbance of surrounding environment	Unintended environmental/health impacts, high public concern, requires trained staff, requires specialized equipment and herbicide
	Foliar application	Seedlings	Selective with appropriate herbicide and application, less disturbance of surrounding environment, less labour intensive	Unintended environmental/health impacts, high public concern, weather dependent, requires trained staff, can only be used on seedlings
Cultural	**Grazing**	None		Not a suitable management option for this species, potential toxicity
Biological	**No biological control agents are currently available for distribution in British Columbia**			

Disposal

ON SITE DISPOSAL

Pulled or cut stems exposed to moist soil may produce roots and continue growing and should be removed offsite (King County, 2021). Cut stumps can be left onsite if they are turned upside down and all soil removed from the roots (King County, 2021).

OFF SITE DISPOSAL

In the Metro Vancouver region, several facilities accept cherry laurel plants and/or infested soil. Please consult this disposal facility list for current details.

PLEASE CONTACT ALL FACILITIES BEFOREHAND TO CONFIRM THEY CAN PROPERLY HANDLE THE MATERIAL.

CLEANING AND DISINFECTION[5]

Before leaving a site, all visible plant parts and soil from vehicles, equipment, and gear should be removed and rinsed if possible. When back at a works yard or wash station, vehicles should be cleaned and disinfected using the following steps:

- Wash with 180 °F water at 6 gpm, 2000 psi*, with a contact time of ≥ 10 seconds on all surfaces to remove dirt and organic matter such as vegetation parts or seeds. Pay special attention to undercarriages, chassis, wheel-wells, radiators, grills, tracks, buckets, chip-boxes, blades, and flail-mowing chains.
- Use compressed air to remove vegetation from grills and radiators.
- Sweep/vacuum interior of vehicles paying special attention to floor mats, pedals, and seats.
- Steam clean poor access areas (e.g., inside trailer tubes) – 200 psi @ 300 °F (149°C).
- Fully rinse detergent residue from equipment prior to leaving the facility.

* Appropriate self-serve and mobile hot power-wash companies in the Metro Vancouver area include: Omega Power Washing, Eco Klean Truck Wash, RG Truck Wash, Ravens Mobile Pressure Washing, Hydrotech Powerwashing, Platinum Pressure Washing Inc, and Alblaster Pressure Washing. Wash stations should be monitored regularly for cherry laurel growth.

Follow-up Monitoring

Whatever control method is used, follow-up monitoring and maintenance treatments are components of an integrated management plan or approach. Depending on the management technique used, multiple treatments may be required over a period of months or years. For methods involving cutting, one of the stump management methods should be used and the cut stump should be monitored for regrowth (King County, 2021). Chemical treatments can be repeated as directed on the herbicide label to control any subsequent growth.

5 Adapted from Metro Vancouver 2017 Water Services Equipment Cleaning Procedures and Inspection Protocols.

Restoration

Restoration is recommended to create competition, control cherry laurel re-growth, and replace lost habitat. Applying mulch to the treatment area can reduce seedling growth (King County, 2021). Removal of the stumps may leave holes in the ground, which should be filled with soil or replacement trees or shrubs to stabilize the area and prevent erosion (King County, 2021). Planting should not take place until management activities are completed, especially if the management techniques are expected to cause soil disturbance, for example digging the stumps.

Examples of common competitive native species prescribed in Metro Vancouver sites are summarized in the table below based on site moisture.

WET SITES	MOIST SITES	DRY SITES
SHRUBS		
Salmonberry	Salmonberry	Thimbleberry
Hardhack	Willow	Nootka rose
Willow	Red osier dogwood	Red flowering currant
Red osier dogwood	Red elderberry	Snowberry
Pacific ninebark	Vine maple	Tall Oregon grape
	Indian plum	Oceanspray
TREES		
Western red cedar	Western red cedar	Douglas-fir
Red alder	Red alder	Red alder

Replacement species should be chosen based on the ecology of the site by a qualified environmental professional. Local biologists, environmental professionals, agronomists, agrologists, native and domestic forage specialists, seed companies, and plant nurseries are all good sources for localized recommendations for regional native species and regionally adapted domestic species, based on site usage. Native grass seed mixes are also available. There are several science-based resources available to guide restoration efforts, such as the South Coast Conservation Program's Diversity by Design restoration planning toolkit.

Revegetation of the site to a domestic or cultured non-native plant species composition may be considered in some circumstances. Often domestic species establish faster and grow more prolifically, which aids in resisting cherry laurel re-invasion.

Cherry laurel sites are often found in areas with existing, or potential, wildlife populations (e.g., deer, beaver, muskrat, vole, etc.) that can damage restoration plantings. Therefore, any revegetation plan must consider impacts from wildlife and utilize appropriate mitigation measures to protect the restoration and existing native plantings (e.g., tree wrapping, exclusion caging/fencing, vole guards, etc.).

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Additional Resources

For more information please refer to the following resources.

- BC Ministry of Forests, Lands, and Natural Resource Operations, Invasive Alien Plant Program (IAPP). www.gov.bc.ca/invasive-species
- Grow Green Guide. www.growgreenguide.ca
- Grow Me Instead. http://bcinvasives.ca/resources/programs/plant-wise/
- King County Cherry laurel identification and control. https://kingcounty.gov/en/legacy/services/environment/animals-and-plants/noxious-weeds/weed-identification/english-laurel
- Pesticides and Pest Management. Province of British Columbia https://www2.gov.bc.ca/gov/content/environment/pesticides-pest-management

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To submit edits or additions to this report, contact Laurie Bates-Frymel, Senior Planner at 604-436-6787 or laurie.bates-frymel@metrovancouver.org.


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BEST MANAGEMENT PRACTICES FOR

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Metrotower III, 4515 Central Boulevard,
Burnaby, BC, V5H 0C6
metrovancouver.org

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Contents

Introduction

The impacts of invasive species on ecological, human, and economic health are of concern in the Metro Vancouver region. Successful control of invasive species requires concerted and targeted efforts by many players. This document - "**Best Management Practices for Common Periwinkle in the Metro Vancouver Region**" - is one of a series of species-specific guides developed for use by practitioners (e.g., local government staff, crews, project managers, contractors, consultants, developers, stewardship groups, and others who have a role in invasive species management) in the region. Together, these best practices provide a compendium of guidance that has been tested locally by many researchers and operational experts.

Common periwinkle[1] is a low-growing trailing evergreen plant that was introduced to North America in the 1700s as an ornamental plant (Evergreen, 2015). It is native to northern Spain, western France, and parts of central and southern Europe (Khanavi, Pourmoslemi, Farahanikia, Hadjiakhoondi, & Ostad, 2010). It has escaped cultivation in BC and spread into forests, forming dense groundcover and crowding out native plants.

Common periwinkle is sought by gardeners as a flowering, evergreen groundcover, especially for shady areas. It is available in different varieties, propagated for particular characteristics, such as plant size, leaf colour, and resistance to pests (Landon & Banko, 2005). Common periwinkle is one of the top six invasive plants still sold throughout BC (Invasive Species Council of BC, 2023). Ironically, much of the research conducted on periwinkle worldwide has focused on improving propagation success (Landon & Banko, 2005).

Common periwinkle contains the chemical compound vincamine which is used to treat cancer (Dhyani, et al., 2022) and is found in alternative medicine products for circulatory diseases, hypertension, digestive upset, nosebleeds, bruising, and memory disorders (Khanavi, Pourmoslemi, Farahanikia, Hadjiakhoondi, & Ostad, 2010).

Worldwide there are seven Vinca species (Khanavi, Pourmoslemi, Farahanikia, Hadjiakhoondi, & Ostad, 2010), none of which are native to Canada. Although Vinca minor is the focus of this document, a close relative, Vinca major (also considered invasive locally), is described in detail as it occupies similar habitats in Metro Vancouver and the same management techniques apply.

Academic institutions, government, and non-government organizations continue to study this species in British Columbia. As researchers and practitioners learn more about the biology and control of common periwinkle, it is anticipated that the recommended best management practices will change. This document will be updated to reflect these changes as the information becomes available. Please check metrovancouver.org regularly to obtain the most recent version of these best management practices.

1 Common periwinkle (*Vinca minor*) is also known by the common names Vinca, periwinkle, small periwinkle, lesser periwinkle, dwarf periwinkle, creeping periwinkle, myrtle and small myrtle. It is referred to as 'common periwinkle' in this document.

REGULATORY STATUS

Although common periwinkle is an invasive plant of concern in the Metro Vancouver region, it is not currently regulated anywhere in British Columbia.

IMPACTS

Indigenous Peoples have an intrinsic relationship with the natural world, built on reciprocity and stewardship. Many native plants and animals have cultural and spiritual significance for Indigenous Peoples, in addition to being important food and medicine sources. Indigenous communities in British Columbia have collectively called for invasive species prevention, management, and control due to their impact on infrastructure, the economy, human health, ecosystems, and cultural practices. Further collaboration with Indigenous Peoples will deepen our understanding about the impacts of invasive species, such as common periwinkle, on Indigenous ways of life and our shared environment.

Common periwinkle forms a dense groundcover resulting in extensive mats on forest floors, entangling, displacing, and excluding most other plants (USDA Forest Service, 2006). As well as blocking light, common periwinkle produces allelopathic chemicals that prevent the germination and growth of tree seedlings (Darcy & Burkart, 2002). In riparian areas, common periwinkle can reduce native species richness, abundance, and seedling establishment (Cushman & Gaffney, 2010).

The presence of common periwinkle in forests impacts ground dwelling spider populations, which are important predators of soil microhabitats, suggesting that common periwinkle influences ecosystem-level processes such as decomposition (Bultman & DeWitt, 2008).

REPRODUCTION AND SPREAD

Common periwinkle is sold widely in garden centres as a shade-loving groundcover and once established it is highly competitive (Toronto Master Gardeners, 2021). Yard waste dumping is another source of common periwinkle infestations (Stone, 2009).

Common periwinkle spreads vegetatively by stolons (slender runners that grow horizontally along the ground) that root at the nodes when exposed to moist soil (USDA Natural Resources Conservation Service, 2002). Plant stems and stolons form a dense, tangled mat close to the ground. Commercially, common periwinkle is usually propagated from stem cuttings as it easily roots from stem pieces with single nodes (Landon & Banko, 2005). In aquatic habitats, when common periwinkle stem fragments are transported downstream and then come in contact with soil, they may take root (DiTomaso & Kyser, 2013).

Seeds likely do not contribute to the spread of common periwinkle in North America. References suggest that either common periwinkle produces unfertile seeds, they rarely grow to maturity, or they are rarely produced outside of the native range (Evergreen, 2015; Bean & Russo, 1986; Conservation Halton, 2022; Stone, 2009).

At a common periwinkle infestation, moving the leaves aside reveals a dense mat of stems and stolons

CREDIT: ISCMV

HABITAT AND DISTRIBUTION

Common periwinkle is adapted to mild climates and a range of soil conditions, but it prefers partial shade and ample moisture (USDA Natural Resources Conservation Service, 2002). It grows vigorously in riparian areas and other moist habitats. It also grows in forests, disturbed sites, cemeteries, abandoned home sites, underneath hedges, and along roadsides and trails, but it is most common in gardens and the wildland urban interface (Evergreen, 2015; USDA Forest Service, 2006; Invasive Species Council of BC, 2017).

Common periwinkle is frequently found on Vancouver Island, the Gulf Islands, the Lower Mainland and rarely in southwestern BC (Invasive Species Council of BC, 2017). It is considered invasive across the Eastern United States (USDA Forest Service, 2006) and widespread in California, Washington and Oregon states (Cushman & Gaffney, 2010).

CLIMATE CHANGE ADAPTATION

Climate models predict that the Metro Vancouver region will experience warmer temperatures; a decrease in snowpack; longer dry spells in summer months; more precipitation in autumn, winter and spring; more intense extreme events; and an extended growing season. In the past, our region had an average of 252 days in the growing season. In lower elevations, 45 days will be added to the growing season by the 2050s, and 56 days by the 2080s, resulting in nearly a year-round growing season of 357 days on average. In higher elevation ecosystems the growing season length will increase by 50% to 325 days by the 2080s (Metro Vancouver, 2016). These changes will stress many sensitive ecosystems, increasing their vulnerability to competition from invasive species.

Common periwinkle's climate tolerance outside its native range is not well understood (Stone, 2009), but its ability to survive in a variety of soil conditions and habitats will likely influence its capacity to adapt to future climate changes. It is speculated that this plant may benefit from our future climate in several ways:

- **Extreme weather events:** Although Vinca species may temporarily be impacted by extreme weather conditions such as dry or cold, it can quickly resprout and regain any loss (Bean & Russo, 1986).
- **Drought tolerance:** Vinca species are somewhat drought tolerant (Stone, 2009).
- **Increased precipitation and flooding:** If periwinkle stem fragments are transported by flood waters elsewhere, they may take root in soil downstream (DiTomaso & Kyser, 2013).

With these kinds of competitive advantages, this species is more adaptable than native species in a variety of ecosystems. Its ability to reproduce in multiple ways and ability to spread quickly suggest that it will be able to withstand, and possibly thrive, with changing climate conditions.

Identification

Unless otherwise noted, the following identification information was collected from Evergreen (2015), USDA Forest Service (2006), and Stone (2009).

Lifecycle: Perennial, usually evergreen, trailing and vining groundcover.

Stem: Slender, wiry, hairless, branching, dark green at the base to light green with red tinge towards the end. Stolons grow up to 1 metre long along the ground in any direction away from a node, while flowering stems grow upright and only up to 30 centimetres tall. Upon maturity, the stems become somewhat woody and tough to break. Stems are usually hollow and release a milky fluid when broken (Bean & Russo, 1986).

Leaves: Shiny, thick, dark green, egg or oval shaped, tapering at both ends with edges slightly rolled under, approximately 2.5-4 centimetres long and 1-2.5 centimetres wide; grow in opposite arrangement; leaf. Veins often appear white and some varieties are variegated. The leaves may turn yellow in full sun and high heat. The outermost layer of leaf tissue (cuticle) is waxy.

Flowers: Showy, pale blue to lavender in colour (rarely white), with 5 petals in a pinwheel shape, up to 3 centimetres wide. Flowers grow in the leaf axils (the joint where a leaf attaches to the stem) and are usually solitary. Blooms from March to June and intermittently throughout the summer.

Fruits: Inconspicuous, cylindrical seed pods up to 5 centimetres long, becoming dry and split, releasing 3-5 seeds. Seeds are sparsely produced, and some references suggest they are infertile or rarely grow to maturity. Seed viability is unknown (USDA Natural Resources Conservation Service, 2002).

Roots: Light-coloured, extending 3-8 centimetres (Stone, 2009).

The following photos show common periwinkle plant parts.

Leaves
CREDIT: ISCMV

Opposite leaf arrangement
CREDIT: ISCMV

Pinwheel-shaped flower
CREDIT: ISCMV

Seeds
CREDIT: STEVE HURST, USDA NRCS PLANTS DATABASE, BUGWOOD.ORG

Stolon with stems and roots emerging from nodes
CREDIT: ISCMV

SIMILAR SPECIES

The species most commonly mistaken for common periwinkle are listed below.

NATIVE SPECIES

- **Kinnickinnick/bearberry (*Arctostaphylos uva-ursi*)** is a low-growing and sometimes spreading shrub with reddish-brown peeling bark (Klinkenberg, 2024). It has alternate, evergreen, leathery leaves 1-3 centimetres long; upside-down urn-shaped pinkish-white flowers in clusters; and bright red berries (Klinkenberg, 2024). This plant occurs throughout BC, usually in dry, rocky, exposed forests (Klinkenberg, 2024).
- **Yerba buena (*Clinopodium douglasii*)** is an aromatic perennial trailing plant that grows from a woody rhizome (Klinkenberg, 2024). Like common periwinkle, it can also form mats. Four-angled stems have sparse hairs and grow to 1 metre long. Leave are opposite, egg-shaped with rounded tips and irregularly toothed edges (Klinkenberg, 2024). Conspicuous white tube-shaped flowers grow from leaf axils. It grows in open coniferous forests but is relatively uncommon in the Metro Vancouver region (Klinkenberg, 2024).

NON NATIVE SPECIES

- **Large periwinkle (*Vinca major*)** is a closely related species to common periwinkle (additional information in the text box on the next page).
- **Winter creeper (*Euonymus fortunei*)** is a stout, evergreen shrub available in garden centres. It is a groundcover, but can be shaped by pruning, and if planted beside a wall or other support, it will climb (Okanagan Xeriscape Association, 2024). The leaves are glossy, leathery, and varieties range in colour from bright green to variegated with white and yellow. Some varieties do not flower, and others produce small, green, inconspicuous flowers. It is non-invasive and often recommended as an alternative to invasive groundcovers such as ivy and periwinkle (Invasive Species Council of BC, 2021).
- **Virginia creeper (*Parthenocissus quinquefolia*)** is an evergreen vine that grows as a ground cover and climbs trees and buildings. The leaves are alternate and composed of five leaflets, in palmate arrangement (with leaf stems originating from a single central point), turning bright red in the fall (Canadian Wildlife Federation, 2024). White flowers form in the summer, producing blue fruits in the fall. In Metro Vancouver, this plant has been found invading sensitive dune ecosystems, after escaping from adjacent gardens (Gasior, 2024).

Kinnikinnick

CREDIT: KAEMAT, FLICKR

Yerba Buena

CREDIT: J. MAUGHN, FLICKR

Non-variegated variety of winter creeper

CREDIT: J. H. MILLER, USDA FOREST SERVICE, BUGWOOD.ORG

Virginia creeper

CREDIT: B. KANZE, FLICKR

Vinca major (large periwinkle, big periwinkle, bigleaf periwinkle, greater periwinkle)

Large periwinkle is also an invasive plant of concern in Metro Vancouver. It is less hardy and less widespread in the region compared to common periwinkle, but has the potential to spread in coastal areas of BC (Evergreen, 2015). *Vinca major* is the most problematic *Vinca* species in California and the Eastern United States (Stone, 2009). Both *Vinca* species are available in garden centres in Canada, but common periwinkle may be more commonly sold (Conservation Halton, 2022).

As the common and scientific names imply, *Vinca major* is the larger of the periwinkles, by overall size and size of individual features. It has erect flowering stems 0.25-0.5 metres long and trailing non-flowering stems 1 metre long (Bean & Russo, 1986). The leaves are oppositely arranged and look very similar to common periwinkle, but are larger at approximately 2.5-4 centimetres long and 1-2.5 centimetres wide, and more triangular or heart-shaped (Stone, 2009). Up to four flowers grow from the axil of every other leaf (versus single flowers per axil in common periwinkle) (Bean & Russo, 1986). Large periwinkle flowers are similar in shape and colour to those of common periwinkle, but larger at approximately 4-5 centimetres wide. The Sea to Sky Invasive Species Council has developed an Identification and Comparison Guide for small versus large periwinkle.

Like common periwinkle, large periwinkle can survive in a wide range of light and soil conditions, but it is less tolerant to cold winters and hot, dry weather (Bean & Russo, 1986).

As *Vinca major* is thought to have evolved from *Vinca minor* or a close relative (Bean & Russo, 1986), many references available for invasive *Vincas* should cover both species. For example, the management strategies outlined in this document also hold true for large periwinkle.

Vinca major

CREDIT: ISCMV

Vinca major

CREDIT: ISCMV

Tracking

The provincial government maintains InvasivesBC, an invasive species database, map and mobile data collection application available for use by all land managers, contractors, government agencies and non-profit organizations completing surveys and/or management activities on invasive species in BC. Many agencies, including local governments, have their own internal invasive species inventory and mapping protocols that are used by staff, contractors, and, in some cases, the public. For example, the City of North Vancouver has its own system called AlienMap. Agencies in British Columbia that do not enter data into IAPP are encouraged to check it regularly because it contains public reports and data from other agencies and it is important to consider as much data as possible when making management decisions. The Map Display module of IAPP is publicly accessible.

When carrying out a common periwinkle inventory it is useful to record the following information as it will later inform treatment plans:

- Size and density of infestation;
- Location in relation to the 10 metre Pesticide Free Zone adjacent to water courses;
- Location in relation to other water sources, such as wells;
- Whether it is growing around desired vegetation or structures..

Reporting

Since common periwinkle is widespread throughout the Metro Vancouver region and does not pose an imminent health or safety risk, there is generally little value in reporting individual occurrences.

Common periwinkle blanketing the forest understory in a local park

CREDIT: ISCMV

Prevention and Control Strategies

Effective invasive plant management may include a variety of control techniques ranging from prevention, chemical, manual, mechanical, biological, and/or cultural methods. Each method is described below in order of effectiveness.

STRATEGY COLOUR LEGEND

GREEN: RECOMMENDED

ORANGE: CAUTION

RED: NOT RECOMMENDED OR NOT AVAILABLE

PREVENTION: IMPERATIVE

Prevention is the most economical and effective way to reduce the spread of common periwinkle over the long term.

When working in or adjacent to common periwinkle, it is best to inspect and remove plants, plant parts, and seeds from personal gear, clothing, pets, vehicles, and equipment and ensure soil, gravel, and other fill materials are not contaminated with common periwinkle before leaving an infested area. Plants, plant parts, and seeds should be tarped or bagged before transport to an appropriate disposal site (see Disposal section).

Since common periwinkle invasion is attributed to vegetative spread, the best way to prevent establishment is to avoid planting it, especially in areas where periwinkles are known to thrive (Stone, 2009). When selecting plants for a site, do not purchase, trade, or transplant common periwinkle. The Invasive Species Council of BC's 'Grow Me Instead' Program or Metro Vancouver's Grow Green website provide recommendations for non-invasive, drought-tolerant plants, and garden design ideas. All materials (e.g., topsoil, gravel, mulch, compost, wood chips, plant stock) should be weed-free. Common periwinkle can be introduced via these materials and sites where they are used should be monitored carefully for any growth (Crosby, 2018).

Healthy green spaces are more resistant to invasion by invasive plants, so it is also important to maintain or establish healthy plant communities.

MANUAL/MECHANICAL: RECOMMENDED

For the first three manual control methods listed below, experts suggest first using a rake to raise and loosen the stolons (Bean & Russo, 1986) or a hand tiller to loosen roots and soil (Nombrado, 2024). For all the methods listed in this section, applying mulch can slow any regrowth (see Restoration section).

- **Pulling** by hand repeatedly will eventually deplete the plant of resources (Evergreen, 2015; Bean & Russo, 1986). Care must be taken to remove all stems, stolons, and root nodes (DiTomaso & Kyser, 2013). This is the most widely recommended control method for common periwinkle, although it is very time-consuming and may be difficult to achieve for large sites. Common periwinkle is a suitable target plant for community weed pulls using this technique.
- **Digging** may be required for established sites where hand pulling alone will not release the roots (USDA Forest Service, 2006). Digging can also be used to remove entire sections of common periwinkle where the plants have established as dense mats (Yong, 2024). The City of Burnaby has had success using a spade or shovel to cut sections of mats, pull/peel the edges back exposing the roots, and work the roots from the ground to release the entire mat (Yong, 2024). This method can be repeated for large infestations, but regrowth can be expected at the edges (Yong, 2024). This method is time-consuming and causes soil disturbance.

- **Mowing** (or line trimming/weed eating) common periwinkle close to the ground may slow spread but will not eradicate the plant, which requires removal of the stems and roots (Bean & Russo, 1986). Mowing must be undertaken regularly to keep up with regrowth and will not likely eradicate the plants because it does not remove underground plant material.
- **Covering** small infestations for 4-6 months after hand pulling or mowing can help discourage regrowth (Stone, 2009). Tarps, landscape fabric or cardboard can be applied. This method is not successful on its own and may be challenging to implement around existing desired vegetation.

REMOVAL TIMING

Manual/mechanical control methods can be undertaken anytime, but they are often initiated in the spring as soon as new growth appears. Manual/mechanical control methods should be repeated throughout the growing season.

APPLYING MANUAL/MECHANICAL CONTROL METHODS IN RIPARIAN AREAS

Common periwinkle often grows in large contiguous patches right up to the edge of water courses. Consider the impact of control techniques and the resulting bare soil on the adjacent aquatic environment. Schedule removal works during a period of least risk to fish species, outside of the fish window. Adhere to Provincial and Federal riparian regulations. It is recommended to consult with a qualified environmental professional when working around water bodies.

CHEMICAL: CAUTION

When alternative methods to prevent or control invasive plants are unsuccessful, professionals often turn to herbicides. Although some trials have been successful, the thick leaves of Vinca are not ideal for chemical control (Bean & Russo, 1986). This method is best used as a follow-up treatment to manual control (Bean & Russo, 1986), or when manual control methods cannot be used. Damage caused by pulling or mowing may increase the uptake of the herbicide, which is usually prevented by the leaf's thick cuticle (Bean & Russo, 1986).

This method should be used with caution for the following reasons (Crosby, 2018):

1. Weather conditions greatly influence treatment efficacy;
2. Common periwinkle often grows in riparian areas where pesticide use is restricted; and
3. Since common periwinkle growth is often closely associated with other plants, chemical control can easily damage non-target species (Province of BC, 2002).

With the exception of substances listed on Schedule 2 of the BC Integrated Pest Management Regulation, the use of herbicides is highly regulated in British Columbia. Site characteristics must be considered with herbicide prescribed, based on site goals and objectives and in accordance with legal requirements. This summary of BC's *Integrated Pest Management Act* provides an overview of the provincial legislation.

PESTICIDE LICENCE AND CERTIFICATION

A valid pesticide licence is required to:

- offer a service to apply most pesticides;
- apply most pesticides on public land including local government lands[2]; and
- apply pesticides to landscaped areas on private land, including outside office buildings and other facilities.

Pesticides (e.g., herbicides, insecticides, fungicides) are regulated by the Federal and Provincial governments, and municipal governments often have pesticide bylaws.

- Health Canada evaluates and approves chemical pest control products as per the Pest Control Products Act.
- The BC *Integrated Pest Management Act* sets out the requirements for the use and sale of pesticides in British Columbia. This Act is administered by the Ministry of Environment and Climate Change Strategy.
- Several municipalities have adopted bylaws that prohibit the use of certain pesticides.

Everyone who uses pesticides must be familiar with all relevant laws.

ONLY companies or practitioners with a valid Pesticide Licence and staff who are certified applicators (or working under a certified applicator) may apply herbicide on invasive plants located on public lands in British Columbia. Applicators must be either the land manager/owner or have permission from the land manager/owner prior to herbicide application.

On private property the owner may obtain a Residential Applicators Certificate (for Domestic class products only) or use a qualified company. Residents do not require a Residential Applicator Certificate for certain uses of domestic class glyphosate including treatment of plants that are poisonous for people to touch, invasive plants and noxious weeds listed in legislation, and weeds growing through cracks in hard surfaces such as asphalt or concrete. Refer to the 'Pesticides & Pest Management' and 'Home Pesticide Use' webpages listed in the Additional Resources Section for more information.

Questions? Contact the BC Integrated Pest Management Program: Telephone: (250) 387-9537

Email: bc.ipm@gov.bc.ca

2 on up to 50 ha/year by a single organization. Organizations looking to treat over 50 hectares of land per year are also required to submit a Pest Management Plan and obtain a Pesticide Use Notice confirmation..

Pesticide applicator certificates can be obtained under the category 'Industrial Vegetation Management' to manage weeds on industrial land, roads, power lines, railways, and pipeline rights-of-way for control of noxious weeds on private or public land. However, since common periwinkle is not a regulated noxious weed in the Metro Vancouver region, the 'Landscape' certification category is needed for herbicide use on public and private lands. Assistant applicator training is also available and the online course and exam are free.

It is best practice for personnel supervising or monitoring pesticide contracts to also maintain a pesticide applicator licence so they are familiar with certification requirements.

For more information on how to obtain a licence and the requirements when working under the provincial *Integrated Pest Management Act and Regulation*, please review the Noxious Weed & Vegetation Management section on this webpage: gov.bc.ca/PestManagement.

HERBICIDE LABELS

Individual herbicide labels must always be reviewed thoroughly prior to use to ensure precautions, application rates, and all use directions, specific site and application directions are strictly followed. Under the federal *Pest Control Products Act* and the BC *Integrated Pest Management Regulation*, **persons are legally required to use pesticides (including herbicides) only for the use described on the label and in accordance with the instructions on that label**. Failure to follow label directions could cause damage to the environment, create poor control results, or pose a danger to health. Contravention of laws and regulations may lead to cancellation or suspension of a licence or certification, requirement to obtain a qualified monitor to assess work, additional reporting requirements, a stop work order, or prohibition from acquiring authorization in the future. A conviction of an offence under legislation may also carry a fine or imprisonment.

Herbicide labels include information on both the front and back. The front typically includes trade or product name, formulation, class, purpose, registration number, and precautionary symbols. Instructions on how to use the pesticide and what to do in order to protect the health and safety of both the applicator and public are provided on the back (BC Ministry of Environment, 2011).

Labels are also available from the Pest Management Regulatory Agency's online pesticide label search or mobile application as a separate document. These label documents may include booklets or material safety data sheets (MSDS) that provide additional information about a pesticide product. Restrictions on site conditions, soil types, and proximity to water may be listed. If the herbicide label is more restrictive than Provincial legislation, the label must be followed.

HERBICIDE OPTIONS

Although not specifically listed on the labels for the following herbicides, common periwinkle may be treated under the general application provision for perennial broadleaved plants. The following herbicides can be used on common periwinkle. Unless otherwise noted, information is from DiTomaso & Kyser (2013). Herbicides are listed in order of recommendation for use on common periwinkle (glyphosate at the top is most effective).

ACTIVE INGREDIENT (EXAMPLE BRAND NAMES)+	APPLICATION	PERSISTENCE	GROWTH STAGE++	TYPE+++	COMMENT
Glyphosate§ (many products)	foliar application	non-residual*	actively growing	non-selective	Apply late summer to early fall for best results when using this method on its own (O'Driscoll, 2009)
Triclopyr (example: Garlon™)	foliar application	residual	actively growing	selective, no effect on grasses	Apply in spring for best results when using this method on its own; will not impact grasses
Imazapyr (example: Arsenal™)	foliar application	residual	actively growing	non-selective	Apply late summer to early fall for best results when using this method on its own; may leave bare ground around plants after treatment

+ The mention of a specific product or brand name of pesticide in this document is not, and should not be construed as, an endorsement or recommendation for the use of that product.

++ Active growing periods vary from year to year depending on weather and other factors. There may be more than one active growing period for a plant in a year.

+++ Herbicides that control all vegetation are non-selective, while those that control certain types of vegetation (e.g., only grasses or only broadleaf plants) are termed selective.

§ Glyphosate can impact trees with roots within or adjacent to the treatment area.

* Non-residual herbicides are active only on growing plant tissue have little or no persistence in the soil whereas residual herbicides persist in the soil, remaining effective over an extended period.

APPLYING PESTICIDE IN RIPARIAN AREAS

Provincial legislation prohibits the use of herbicides within 10 metres of natural water courses and 30 metres of domestic or agricultural water sources on public lands. On private lands herbicide labels need to be followed (which means for glyphosate products treatment can happen up to the water's edge) and other restrictions may apply (e.g. industrial sites, forestry sites, golf courses, etc.). On public lands, glyphosate is the only active ingredient that can be applied within the 10 metre Pesticide-Free Zone (PFZ)[3] in British Columbia in accordance with the *Integrated Pest Management Act* and Regulation and all public land Pesticide Management Plans (PMPs). A plant must be either a listed Noxious Weed (under the *Weed Control Act*) or appear in the *Forest and Range Practices Act* Invasive Plants Regulation to be treated within the 10 metre PFZ. **Common periwinkle is not listed and therefore glyphosate and other herbicides can only be applied on common periwinkle up to 10 metres away from the high water mark (HWM)[4]**. The 30 metre no-treatment zone around a water supply intake or well used for domestic or agricultural purposes may be reduced if the licencee or PMP holder is "reasonably satisfied" that a smaller no-treatment zone is sufficient to ensure that pesticide from the use will not enter the intake or well.

When managing common periwinkle with herbicide in riparian areas:

- Observe and mark all PFZs while on site.
- The HWM should be determined by careful evaluation by the applicator.
- Distances in PFZs should be measured as horizontal distance.
- Herbicides restricted in a PFZ must not enter these zones by leaching (lateral mobility) through soil or by drift of spray mist or droplets.
- Treatments should be conducted when water levels are low (e.g. summer months) to reduce risk.
- Note that efficacy may be dependent on site conditions, including moisture in the soil.

3 The Pesticide-Free Zone (PFZ) is an area of land that must not be treated with pesticide and must be protected from pesticide moving into it, under the *Integrated Pest Management Act* and Regulation.

4 The High Water Mark (HWM) is defined as the visible high water mark of any lake, stream, wetland or other body of water where the presence and action of the water are so common and usual and so long continued in all ordinary years as to mark upon the soil of the bed of the lake, river stream, or other body of water a character distinct from that of the banks, both in vegetation and in the nature of the soil itself. Typical features may include, a natural line or "mark" impressed on the bank or shore, indicated by erosion, shelving, changes in soil characteristics, destruction of terrestrial vegetation, or other distinctive physical characteristics. The area below the high water mark includes the active floodplain (BC Ministry of Environment, 2011).

APPLICATION METHODS

Foliar application can be undertaken by hand or backpack sprayer. This treatment is best used as a follow-up method within 5-10 minutes after manual/mechanical control (Bean & Russo, 1986). This method can also be used for spot treatment of isolated plants (Stone, 2009). When used on its own, the best timing for herbicide application is herbicide-dependent (see herbicide table above). No matter what herbicide is used, it may take several months for the leaves to show damage (O'Driscoll, 2009).

CULTURAL: NOT AVAILABLE

There are no documented cultural control methods for common periwinkle (Stone, 2009).

- **Grazing** opportunities are limited in urban areas due to municipal bylaws regulating agricultural animals, the high probability of interface with the public, and the damage animals could cause to riparian areas and other sensitive sites with multiple land uses. Common periwinkle is reportedly unpalatable to livestock (Stone, 2009) and not grazed by Canada geese (Conover, 1991). Grazing is not recommended as a management option for this species in Metro Vancouver.

BIOLOGICAL: NOT AVAILABLE

A stem blight fungus (*Phoma exigua var. exigua*) is a natural pest of common periwinkle that causes dieback of new growth in the spring (USDA Forest Service, 2006). Although this is a serious disease of common periwinkle, it is mostly of concern for commercial growers of the plant, and the fungus has not been explored for biocontrol purposes (Stone, 2009). There are no biological control agents currently available in BC for common periwinkle.

Common periwinkle growing underneath a hedge

CREDIT: ISCMV

CONTROL SUMMARY

The following table provides a summary and comparison of control methods for butterfly bush.

CONTROL STRATEGY	TECHNIQUES	APPLICABLE SITE TYPE	PROS	CONS
Manual	**Pulling**	Any site	Most recommended control method for this species, selective, non-chemical, inexpensive	Labour intensive, regrowth may occur for several years, may create soil disturbance, must remove entire plant, must deal with biomass
	Digging	Any site, sites where pulling is not successful, or large matted sites	Selective, non-chemical, inexpensive	
Mechanical	**Mowing**	Any site where mowing equipment is accessible	Non-chemical	Labour intensive, regrowth may occur for several years, may require trained staff and specialty equipment, will not eliminate the plants
Manual	**Covering**	Small infestations, follow-up treatment after manual control	Selective, non-chemical	Challenging to implement around existing vegetation, not successful on its own
Chemical	**Foliar application**	Follow-up to manual control method or spot control of isolated sites	Selective with appropriate herbicide and application, less labour intensive	Unintended environmental/health impacts, high public concern, weather dependent, requires trained staff, most successful when used with other methods
Cultural	**Grazing**	None		Not a suitable management option for this species in Metro Vancouver
Biological	**No biological control agents are currently available for common periwinkle**			

CONTROL SUMMARY COLOUR LEGEND

GREEN: RECOMMENDED

ORANGE: CAUTION

RED: NOT RECOMMENDED OR NOT AVAILABLE

Disposal

ON SITE DISPOSAL

Since common periwinkle spreads by stem, stolon and root fragments, on site disposal is not recommended.

OFF SITE DISPOSAL

In the Metro Vancouver region, several facilities accept common periwinkle plants and/or infested soil. Please consult this disposal facility list for current details.

PLEASE CONTACT ALL FACILITIES BEFOREHAND TO CONFIRM THEY CAN PROPERLY HANDLE THE MATERIAL.

CLEANING AND DISINFECTION[5]

Before leaving a site, all visible plant parts and soil from vehicles, equipment, and gear should be removed and rinsed if possible. When back at a works yard or wash station, vehicles should be cleaned and disinfected using the following steps:

- Wash with 180 °F water at 6 gpm, 2000 psi*, with a contact time of ≥ 10 seconds on all surfaces to remove dirt and organic matter such as vegetation parts or seeds. Pay special attention to undercarriages, chassis, wheel-wells, radiators, grills, tracks, buckets, chip-boxes, blades, and flail-mowing chains.
- Use compressed air to remove vegetation from grills and radiators.
- Sweep/vacuum interior of vehicles paying special attention to floor mats, pedals, and seats.
- Steam clean poor access areas (e.g., inside trailer tubes) – 200 psi @ 300 °F (149°C).
- Fully rinse detergent residue from equipment prior to leaving the facility

* Appropriate self-serve and mobile hot power-wash companies in the Metro Vancouver area include: Omega Power Washing, Eco Klean Truck Wash, RG Truck Wash, Ravens Mobile Pressure Washing, Hydrotech Powerwashing, Platinum Pressure Washing Inc, and Alblaster Pressure Washing. Wash stations should be monitored regularly for common periwinkle growth.

Follow-up Monitoring

Whatever control method is used, follow-up monitoring and maintenance treatments are components of an integrated management plan or approach. Manually/mechanically controlled sites may take repeated efforts over several years (DiTomaso & Kyser, 2013). During the growing season following first treatments, the common periwinkle plants may be sparser and more difficult to find amongst other plants and leaf litter (Stone, 2009). Sites should be monitored closely for several years after treatment.

5 Adapted from Metro Vancouver 2017 Water Services Equipment Cleaning Procedures and Inspection Protocols.

Restoration

Heavily mulching after manual/mechanical removal can decrease the likelihood of regrowth (Evergreen, 2015).

Examples of common competitive native species prescribed in Metro Vancouver sites are summarized in the table below based on site moisture.

WET SITES	MOIST SITES	DRY SITES
SHRUBS		
Salmonberry	Salmonberry	Thimbleberry
Hardhack	Willow	Nootka rose
Willow	Red osier dogwood	Red flowering currant
Red osier dogwood	Red elderberry	Snowberry
Pacific ninebark	Vine maple	Tall Oregon grape
	Indian plum	Oceanspray
TREES		
Western red cedar	Western red cedar	Douglas-fir
Red alder	Red alder	Red alder

Replacement species should be chosen based on the ecology of the site by a qualified environmental professional. Local biologists, environmental professionals, agronomists, agrologists, native and domestic forage specialists, seed companies, and plant nurseries are all good sources for localized recommendations for regional native species and regionally adapted domestic species, based on site usage. Native grass seed mixes are also available. There are several science-based resources available to guide restoration efforts, such as the South Coast Conservation Program's Diversity by Design restoration planning toolkit.

Revegetation of the site to a domestic or cultured non-native plant species composition may be considered in some circumstances. Often domestic species establish faster and grow more prolifically, which aids in resisting common periwinkle re-invasion. There are many native and non-invasive groundcovers that offer similar characteristics as common periwinkle, including: dull Oregon grape (*Mahonia nervosa*), sweet violet (*Viola odorata*), redwood sorrel (*Oxalis oregana*), coral bells (*Heuchera micrantha*), bunchberry (*Cornus canadensis*), false lily of the valley (*Maianthemum dilatum*), kinnickinnick (*Arctostaphylos uva-ursi*), lowfast cotoneaster (*Cotoneaster dammeri* 'Lowfast'), wild ginger (*Asarum canadense*), foamflower (*Tiarella trifoliata*), and native ferns.

Common periwinkle sites are often found in areas with existing, or potential, wildlife populations (e.g., deer, beaver, muskrat, vole, etc.) that can damage restoration plantings. Therefore, any revegetation plan must consider impacts from wildlife and utilize appropriate mitigation measures to protect the restoration and existing native plantings (e.g., tree wrapping, exclusion caging/fencing, vole guards, etc.).

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Additional Resources

For more information please refer to the following resources.

- BC Ministry of Forests, Lands, and Natural Resource Operations, Invasive Alien Plant Program (IAPP). www.gov.bc.ca/invasive-species
- Grow Green Guide. www.growgreenguide.ca
- Grow Me Instead. http://bcinvasives.ca/resources/programs/plant-wise/
- Invasive Species Council of BC. (2017). Common Periwinkle Factsheet. https://bcinvasives.ca/wp-content/uploads/2021/01/Periwinkle.pdf
- Pesticides and Pest Management. Province of British Columbia https://www2.gov.bc.ca/gov/content/environment/pesticides-pest-management
- Sea to Sky Invasive Species Council (2021). Small Periwinkle Factsheet. https://ssisc.ca/wp-content/uploads/2021/09/Small-Periwinkle-Vinca-minor-Factsheet-2021.pdf

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To submit edits or additions to this report, contact Laurie Bates-Frymel, Senior Planner at 604-436-6787 or laurie.bates-frymel@metrovancouver.org.

Common periwinkle growing along a driveway

CREDIT: ISCMV


metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

TACKLING Bamboo

Invasive species have significant impacts on the environment, human health, infrastructure and the economy in the Metro Vancouver region.

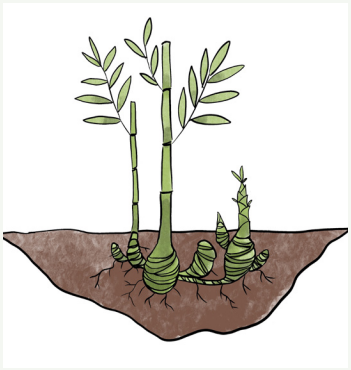
Bamboos are a large group of fast-growing evergreen grasses that are often grown as ornamental plants and commercial crops for fabric, biofuel, paper pulp, and construction materials. Unfortunately, bamboo has escaped cultivation worldwide and is commonly found in landscaped areas, forests, and streams in Metro Vancouver. Most local bamboo species originated from China and Japan.

IMPACTS

Bamboos can escape from gardens and invade neighbouring properties. They can grow through cracks in building foundations and damage roads. In natural areas, they compete with native plants and cause seedling death due to root competition. Along streams, falling bamboo leaves can decrease water quality and impact drainage. Once established, bamboo plants are challenging to control.

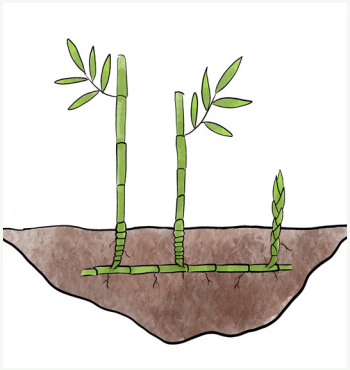
IDENTIFICATION

- **Growth Form:** Bamboo is categorized into two groups depending on the growth habit of the underground stems (rhizomes)
  - **Clumping bamboo** grows as dense, distinct clumps that don't spread far
  - **Running bamboo** grows horizontally, forming new underground stems that extend long distances ; this group has a higher risk of being invasive



Cross section of clumping bamboo, with minimal outward spread and slow growth

CREDIT: I. GASIOR



Cross section of running bamboo, with multiple stems arising from horizontal rhizomes

CREDIT: I. GASIOR

Mature, woody bamboo stems with segments

CREDIT: ISCMV

Leaves

CREDIT: ISCMV

- **Stems:** Segmented, straight, woody, mostly hollow stems that grow from rhizomes
- **Leaves:** Narrow and pointed at the tip, 5-15 centimetres long, arranged in a fan-like pattern on branches
- **Flowers & Seeds:** Bamboos rarely reproduce by flowers and seeds and these plant parts are not likely to be observed

CONTROL METHODS

To prevent further spread across the region and beyond, it is best not to purchase, trade, grow or propagate bamboo. If bamboo is already present in a garden, it is critical to prevent the plant from invading adjacent yards, parks and natural areas. Effective invasive plant management typically includes a variety of control methods. The following table summarizes the recommended techniques for controlling bamboo on private property or where permission has been granted by the landowner or manager. Other methods, such as creating a barrier to contain the bamboo and prevent further spread, may be used by professionals.

CONTROL METHOD	TECHNIQUES	SUITABLE SITES	NOTES
Manual	**Digging**	Small stands of clumping or running bamboo	• Use a shovel or pickaxe to remove as much of the plant as possible, including the underground stems and roots
Mechanical	**Excavation**	Large stands of clumping or running bamboo where heavy equipment is accessible	• Remove as much of the plant as possible, including the underground stems and roots • This method causes soil disturbance
Manual/ mechanical	**Repeated cutting or mowing**	Any site	• Cut and remove mature stems, then cut or mow new stems that appear every month, increasing to every 2 weeks during July and August • This method gradually exhausts the plants' energy reserves

To achieve success, all underground stems and roots must be removed and disposed of appropriately. Control of established bamboo is labour intensive, requiring many years of repeated treatments.

How Can You Help?

- Do not purchase, trade, or grow bamboo.
- Control invasive plants and replace them with a non-invasive alternative. Check out **growgreenguide.ca** for suggestions.
- Remove any plant parts or seeds from clothing, pets, tools, vehicles, etc.
- Do not place invasive plants in your backyard composter as the temperature will not become hot enough to destroy the seeds and roots.
- To reduce the spread of invasive species, dispose of yard waste and soil appropriately. Visit your municipality's website for more information.
- Download the '**Report Invasives BC**' app to identify and report invasive species.

For the complete set of best management practices for bamboo, and other key invasive species, visit **MetroVancouver.org** and search 'Invasive Species'.

At this site, running bamboo has escaped from a residential property and is spreading down the fence line

CREDIT: ISCMV

TACKLING

Cherry Laurel

(Prunus laurocerasus)

Invasive species have significant impacts on the environment, human health, infrastructure and the economy in the Metro Vancouver region.

Cherry laurel is a fast-growing woody tree or shrub that is a commonly planted in gardens or as a hedge. It is native to southwestern Asia and southeastern Europe, and has escaped cultivation in many areas, including southwestern BC.

IMPACTS

Cherry laurel leaves, stems and seeds are toxic for humans and pets to ingest. In forests, cherry laurel competes with native plants by forming a dense cover that shades tree seedlings and shrubs. On residential properties, cherry laurel can quickly become a challenge to control, and fruit litter can be unsightly and spread seeds to natural areas.

IDENTIFICATION

- **Lifecycle:** Erect, spreading tree or shrub, up to 10 metres tall
- **Stems:** Twigs are green and smooth with a bitter almond odour when crushed, bark becomes woody and brown as the plant grows
- **Leaves:** Evergreen, thick, dark green and shiny on top, alternating on either side of the stem; oblong-shaped coming to an abrupt point at the end of the leaves
- **Flowers:** Small, white, fragrant flowers in upright clusters in spring

Bark

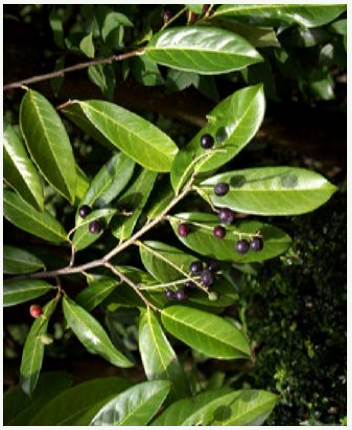
CREDIT: ISCMV

Leaf

CREDIT: ISCMV

Flower stalks grow upright from branches

CREDIT: ISCMV



Cherries (fruits)

CREDIT: MANUEL M. V. VIA FLICKR

- **Seeds:** Small, purple-black cherries form in mid-summer; each cherry contains one pit (seed) that is poisonous to humans and pets, although they may be eaten by some birds and other animals

CONTROL METHODS

To prevent further spread across the region and beyond, it is best not to purchase, trade, grow or propagate cherry laurel. If this plant is already present, it is critical to ensure it does not invade adjacent yards, parks, and natural areas. Effective invasive plant management typically includes a variety of control methods. The following table summarizes the recommended techniques for controlling cherry laurel on private property or where permission has been granted by the landowner or manager. Other methods may be used by professionals. **When handling cherry laurel, it is important to wear gloves and protective clothing. Hands should be washed thoroughly after activities, especially before eating.**

CONTROL METHOD	TECHNIQUES	SUITABLE SITES	NOTES
Manual	**Hand pulling**	Seedlings or small plants	• Remove as much of the plant as possible, including the roots • Easiest when soil is moist • Can be completed throughout the year • May disturb seeds in soil and encourage growth of new plants • Return to the site periodically and remove new plants
	Cutting and continuous removal of new stems from stump	Mature plants and trees	• Cut stems and trunks as close to the ground as possible using a hand tool or chainsaw • Cut or break any stems that grow from the cut surface regularly throughout the year • May take several years before the plant dies

As cut cherry laurel branches and stems may produce roots and continue to grow, all plant parts should be moved offsite and disposed of appropriately. It is best to replant the area with native or non-invasive plants and cover the soil with mulch to reduce seedling growth.

How Can You Help?

- Do not purchase, trade or grow cherry laurel. Non-invasive alternatives are available that can provide a continuous hedge or screen.
- Control invasive plants and replace them with a non-invasive alternative. Check out **growgreenguide.ca** for suggestions.
- Do not place invasive plants in your backyard composter as the temperature will not become hot enough to destroy the seeds and roots.
- To reduce the spread of invasive species, dispose of yard waste and soil appropriately. Visit your municipality's website for more information.
- Download the '**Report Invasives BC**' app to identify and report invasive species.
- Join a stewardship group and help remove invasive species from local parks.

For the complete set of best management practices for cherry laurel, and other key invasive species, visit **MetroVancouver.org** and search 'Invasive Species'.

Large, overgrown cherry laurel hedge

CREDIT: ISCMV

TACKLING

Common Periwinkle

(Vinca minor)

Invasive species have significant impacts on the environment, human health, infrastructure and the economy in the Metro Vancouver region.

Common periwinkle (also known as Vinca, periwinkle, and small periwinkle) is a low-growing trailing evergreen plant that was introduced to North America in the 1700s as a garden ornamental and medicinal herb. It has escaped cultivation in BC and spread into forests, forming dense groundcover and crowding out native plants. Unfortunately, many garden centres still sell several varieties of periwinkle, including *Vinca major*, a close relative of common periwinkle that is also considered to be invasive in Metro Vancouver.

IMPACTS

Common periwinkle spreads rapidly and forms dense mats that block sunlight. It also produces chemicals that prevent the germination and growth of tree seedlings. Common periwinkle grows vigorously in disturbed areas, forests, cemeteries, abandoned home sites and along roadsides, trails and streams, but is most common in gardens and forest edges adjacent to residential properties.

IDENTIFICATION

- **Lifecycle:** Perennial, evergreen trailing groundcover
- **Stems:** Slender, smooth, and branching; flowering stems grow upright to 30 centimetres tall; stolons (stems that grow horizontally along the ground) grow up to 1 metre long

Leaves

CREDIT: ISCMV

Pinwheel-shaped flower

CREDIT: ISCMV

Large periwinkle (*Vinca major*), a closely related invasive species, is taller with larger flowers and larger leaves that are triangular or heart-shaped.

CREDIT: S. HARVEY, FLICKR

- **Leaves:** Shiny, thick, dark green, egg or oval shaped, approximately 2.5-4 centimetres long, arranged oppositely along the stem; leaf veins are often white; some varieties are variegated
- **Flowers:** Showy, pale blue to lavender (rarely white) with 5 petals in a pinwheel shape, up to 3 centimetres wide; blooms from March to June and intermittently throughout the summer
- **Seeds:** Cylindrical seed pods up to 5 centimetres long; seeds are rarely seen

CONTROL METHODS

To prevent further spread across the region and beyond, it is best not to purchase, trade, grow or propagate periwinkle. If this plant is already present, it is critical to ensure it does not invade adjacent yards, parks, or natural areas. Effective invasive plant management typically includes a variety of control methods. The following table summarizes the recommended techniques for controlling common periwinkle on private property or where permission has been granted by the landowner or manager. Other methods may be used by professionals.

CONTROL METHOD	TECHNIQUES	SUITABLE SITES	NOTES
Manual	**Pulling**	Any site	• This is the most recommended control method for this plant • Remove as much of the plant as possible, including the stems, stolons, and roots
	Digging	Any site, sites where pulling is not successful, or large matted sites	• Digging can help release roots from the soil • Remove as much of the plant as possible, including the stems, stolons, and roots

Applying mulch after removal can decrease the likelihood of regrowth. Following treatment, the plants may be more sparse and challenging to find amongst other plants or dead leaves. Sites should be monitored closely for several years after treatment.

How Can You Help?

- Do not purchase, trade, or grow common or large periwinkle. Non-invasive groundcovers are available that offer similar characteristics.
- Control invasive plants and replace them with a non-invasive alternative. Check out **growgreenguide.ca** for suggestions.
- Do not place invasive plants in your backyard composter as the temperature will not become hot enough to destroy the seeds and roots.
- To reduce the spread of invasive species, dispose of yard waste and soil appropriately. Visit your municipality's website for more information.
- Download the '**Report Invasives BC**' app to identify and report invasive species.
- Join a stewardship group and help remove invasive species from local parks.

For the complete set of best management practices for common periwinkle, and other key invasive species, visit **MetroVancouver.org** and search 'Invasive Species'.

Common periwinkle spreading at the edge of a forest

CREDIT: ISCMV

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: MVRD Board of Directors

From: Mayors Committee

Date: September 12, 2024 Meeting Date: September 27, 2024

Subject: **Invited Presentation from Larry Thomas, President, Greater Vancouver Fire Chiefs Association**

MAYORS COMMITTEE RECOMMENDATION

That the MVRD Board approve a letter to be sent to the Provincial Government requesting: 1) that implementation of changes to the BC Building Code to allow single egress stair buildings be paused until safety considerations are reviewed as requested by the Greater Vancouver Fire Chiefs, and 2) that the Province commit to utilizing standard code change processes and incorporating the safeguards provided by the consultation.

At its September 12, 2024 meeting, the Mayors Committee considered a presentation from Larry Thomas, President, Greater Vancouver Fire Chiefs Association, regarding Review of Draft Code Language for Enabling Single Egress Stair Buildings, titled "Single Egress Exit Stairs", dated September 12, 2024. The Committee subsequently passed the recommendation as presented above in underline style.

This matter is now before the Board for its consideration.

ATTACHMENTS

1. "Single Egress Exit Stairs", dated September 12, 2024.

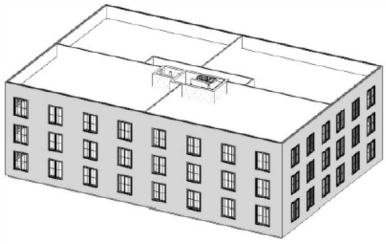
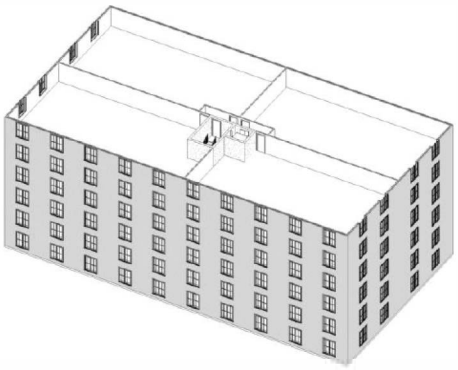
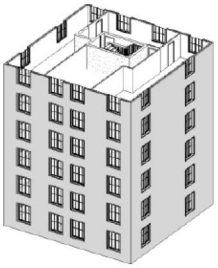
70621799

Single Egress Exit Stairs

BC Building Code Amendment
By Ministerial Order
Metro Vancouver Mayors Council
September 12, 2024

Greater Vancouver Fire Chiefs Association

JENSEN HUGHES REPORT

Canada 	USA (IBC Model Code) 
Seattle 	New York City 

JENSEN HUGHES REPORT

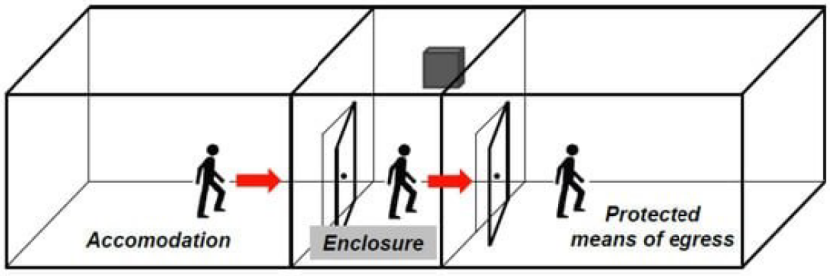
Brief Overview of code changes

- Eliminate the requirement for a second egress stairway
- Maximum height set to 6 storeys, maximum occupants per floor = 24
- Add automatic door closers to unit doors and increase fire rating to 45 minutes
- Increase exit stairway width to 1500 mm or 4.9 feet

JENSEN HUGHES REPORT

Brief Overview of code changes

- Allow for 2-hour fire rated drywall to protect the exit stairway
- Allow for a 3 ft. by 5 ft. vestibule (enclosure between hallway and exit stair to protect from smoke incursion)
- Require stair to exit directly to street on the front of building
- Require sprinklers to the NFPA 13 Standard
- Maximum distance from unit to stair set to 6 m or 19.7 ft.



Cost to Rent a housing unit?

Cost to Own a housing unit?

What is Affordable Housing?

Subsidized rent for a housing unit?

Cheaply built housing units?

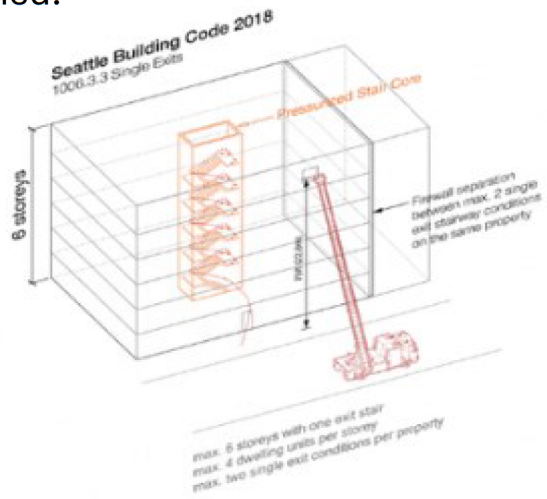
Greenwood Gardens 14831 104th Ave, Surrey, BC

Suite Types & Rates

Type/Number	Bath	Price
1 / Bedroom	1 Bath	Starting at: $2,000
2 / Bedroom	1 Bath	Starting at: $2,350
3 / Bedroom	1 Bath	Starting at: $2,700

SEATTLE has these single stair buildings

Karen Grove, Seattle's executive director of fire prevention, who reports to the city's fire marshal. "The city building department, the fire marshal, and myself are **all against the single exit stair as the code for everyone because we feel that most fire jurisdictions are not situated like we are in Seattle**," Grove explained.



SEATTLE has these single stair buildings

"We were comfortable with this in Seattle because we have a hydrant on every corner. We have a well-funded municipal career fire department with outstanding response times. We have a good complement of aerial ladders distributed throughout the city that we could put quickly on scene if we need to affect a rescue." This kind of context, she said, is often missing in the single-stair debate. "**My concern is that all of these advocates for single exit stairs can misuse the Seattle experience to say there is no risk. And I think that would be a mistake because for other jurisdictions, I would think this could be quite risky**," Grove said.

Top Three Causes of Fires

1. People
2. People
3. People

Behaviours of people during an emergency is largely unpredictable.

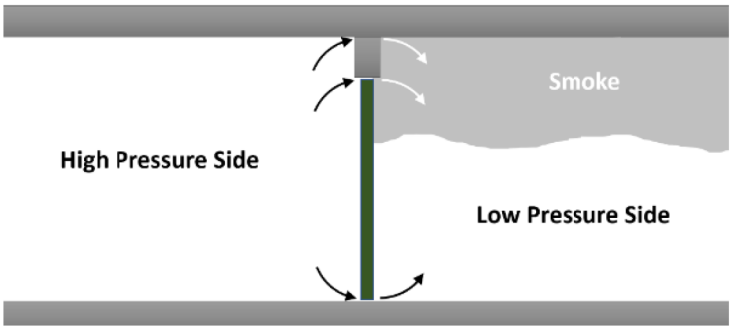
Low frequency events with high consequences =

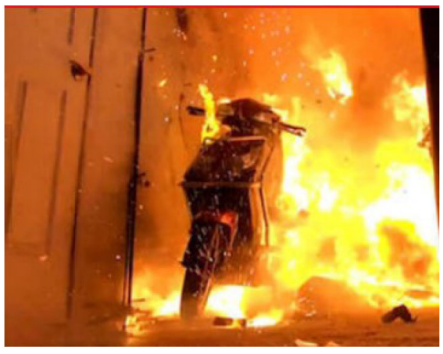
INCREASED RISK

Fires do occur in sprinklered buildings

Single Points of Failure

1. Sprinkler system
2. Egress stair construction type
3. Smoke control
4. Egress pathway compromised





Adequate Fire Response and Adequate Fire Prevention

How many cities and towns in BC can say they have adequate fire response for medium to high-risk buildings with multiple residents?

How many fire departments in BC or in Metro Vancouver can assemble up to 32 firefighters on scene at a multi-residential fire in a 6-storey building within 480 seconds of leaving the station?

How many fire departments in BC or Metro Vancouver have enough fire inspectors to increase the frequency of inspections, as recommended for these SES medium to high-risk buildings for ensuring code compliance and system maintenance?

Fire Operations in stairway

Ladder Rescues

The Canadian Board for Harmonized Construction Codes (CBHCC) is responsible for developing Canada's National Model Codes, including the National Building Code (NBC).

The development of the National Model Codes is a public, collaborative, and consensus-based process. It is informed by standards, evidence, and research, with input from industry, the regulatory community, and interested stakeholder groups. Changes to the National Model Codes are developed by technical committees of volunteers that focus on specific technical topics.

The Province of BC signed on to the harmonized construction codes and as a result cannot make amendments after January 2025.

Thank You

References:

[State Fire Marshalls Position on Single Exit Stairway in Multi-Family Buildings]

[Single stair Egress Report by Len Garis]

[Ontario Fire Chiefs Position on single egress stairs]

[International Fire Chiefs Position Statement on reducing egress stairs in buildings higher than 3 storey]

[IAFF and Metro Chiefs joint statement on single exit stairways]

[Canadian Association Fire Chiefs letter to the BC Minister of Housing]

[BC Chiefs of Police statement supporting the fire chiefs]

[Jensen Hughes report to Ministry of Housing]

Greater Vancouver Fire Chiefs Association

To: Invest Vancouver Management Board

From: Jacquie Griffiths, President, Invest Vancouver
Sue Mah, Vice President of Collaboration, Invest Vancouver

Date: August 19, 2024 Meeting Date: September 13, 2024

Subject: **Global Promotion at Web Summit Vancouver 2025**

RECOMMENDATION

That the MVRD Board endorse Metro Vancouver's participation, through Invest Vancouver, in securing a regional presence for the Metro Vancouver region at Web Summit Vancouver 2025.

EXECUTIVE SUMMARY

Web Summit Vancouver is expected to welcome over 15,000 attendees from around the world to the Metro Vancouver region for three consecutive years starting in May 2025. This premier tech conference represents an unprecedented opportunity to showcase the region's tech sector to over 800 global investors and multinational firms to attract strategic investment that will further the creation of high-quality jobs and increase prosperity for the residents of the Metro Vancouver region. When Toronto hosted this conference in the last few years, it generated more than $188 million of economic impact; contributing impressive wealth to their regional economy. It is anticipated that Web Summit Vancouver could generate an economic impact of over $279 million to the Metro Vancouver regional economy including capturing foreign direct investment in alignment with Invest Vancouver's mandate.

To capitalize on opportunities posed by the conference, securing a regional presence at the event will require repurposing $150k from Invest Vancouver's approved 2024 budget as well as an additional request of $150k for budget 2025. These funds would be used to ensure a strong regional presence through activations, trade floor exhibition, business to business networking sessions, hosted delegations and tours to promote the Metro Vancouver regional economy to a global audience. The funds will complement the investment of the Province of BC, PacifiCan, City of Vancouver, and other partners who have committed to contributing over $17 million to the event. Invest Vancouver will collaborate with partners and member jurisdictions to amplify investment attraction efforts and maximize results in lead generation and landed investments.

PURPOSE

To provide an opportunity for the MVRD Board to endorse Metro Vancouver's participation in the Web Summit Vancouver conference through Invest Vancouver to showcase and promote the Metro Vancouver regional economy to global investors with the goal of attracting foreign direct investment to facilitate the creation of high-quality jobs for the residents of the region.

BACKGROUND

This report is advanced in coordination with the endorsed Invest Vancouver 2024 Annual Plan and in alignment of goals outlined in the 2022-2026 Board Strategic Plan adopted by the MVRD Board.

As part of its goals outlined in the above plans, Invest Vancouver strives to promote strategic investment opportunities in key sectors to global investors through presence and profile at events and initiatives within the region.

Web Summit hosts the largest international tech conferences globally and is known for its influential impact on investment attraction and economic development. Recognizing this potential, Invest Vancouver supported the bid process as part of a coalition led by Destination Vancouver. The coalition includes the Province of BC, PacifiCan, City of Vancouver and other stakeholders. The coalition was successful in their bid, and on June 13, 2024, Web Summit announced that they will be hosting their North American conference in the City of Vancouver for three consecutive years, starting in 2025.

The event is expected to attract more than 15,000 attendees annually and will have a profound economic impact for the regional and provincial economy. Partners around the region are investing in the event as it is a critical fulcrum for high tech investment growth for the Metro Vancouver region. Discussions with stakeholders including the Invest Vancouver Advisory Committee confirm that a regional perspective at the event is needed to facilitate foreign direct investment and stay competitive amongst competing jurisdictions.

COLLISION CONFERENCE HOSTED BY THE CITY OF TORONTO

Web Summit's Collision Conference was hosted in Toronto for the past four years. The conference was the fastest growing tech conference in North America. It convened thousands of international tech leaders, unicorn founders, investors, and others to Toronto. This conference provided Toronto the opportunity to showcase its technology industry and highlight its growth and innovation.

Toronto's most recent Collision Conference in 2024 brought together 40,000 delegates from more than 117 countries to foster connections, spur innovation, and explore investment opportunities within the tech sector. As a result, the conference laid the foundation for significant activity related to FDI attraction as well as increased interest in Canada through company expansions and relocations. It also promoted international trade, partnerships and venture capital investment in Canadian companies, and boosted the Toronto and Canadian innovation ecosystems. It is estimated that Toronto's Collision Conferences hosted in 2019, 2022, and 2023 created $188 million of economic impact over the course of three years, contributing impressive wealth to the regional economy.

WEB SUMMIT VANCOUVER

The Province of BC, PacifiCan, City of Vancouver, and other partners have provided financial commitments to bring the Collision Conference to the Metro Vancouver region, recognizing that an event of this caliber will have significant regional impact to our tech ecosystem and regional economy as it did for the City of Toronto. The commitment across multiple levels of government represents an investment of over $17 million (Table 1).

Table 1: Public Investment Requested or Committed

	Requested	Committed		
Year	**Metro Vancouver**	**City of Vancouver**	**Province of BC**	**PacifiCan**
One-time initiation	$150,000	$250,000	$6.6 million	$6.6 million
2025	$150,000			
2026	TBD			
2027	TBD			

The event has been rebranded to "Web Summit Vancouver" and will remain in the region for three consecutive years. Web Summit Vancouver 2025 will run from May 27-30, 2025 at the Vancouver Convention Centre.

Promoting the Metro Vancouver Region at Web Summit Vancouver

Web Summit Vancouver provides a unique opportunity to showcase the Metro Vancouver region's thriving innovative economy, tech sector, and supportive ecosystem. The Metro Vancouver region is home to more than 11,000 tech companies that employ over 220,000 residents. The region's tech industry is one of the fastest growing sectors in the province, and has grown at twice the rate of the overall economy since 2009. It is important to support its growth and continued success to advance prosperity to the residents of the region.

Despite the region's many attributes including a diverse and growing talent pool, industry-leading research and development, and cutting-edge innovation, Invest Vancouver's own 2024 research on the region's high-tech sector found that many international technology firms are not yet aware of the region's advantages in the tech sector. As a result, they do not consider the region as a viable location for expansion. To maximize investment attraction, more multinational technology firms need to consider the Metro Vancouver region. Raising the profile of the region and its value proposition will increase the number of firms interested in the region.

An activation to promote the entire region through promotional activities will cost an estimated $300k (Table 2). Invest Vancouver would like to repurpose $150k from its 2024 budget and request an additional $150k in funding for budget year 2025 to build out a strong strategy for investment attraction. Invest Vancouver's financial commitment will go towards implementation of a trade floor exhibit, business to business meetings, marketing and promotion, and hosted delegations and tours.

Table 2: Estimated Costs for 2025 Activation Activities

Activity	**Cost**
Trade floor presence	$100,000
Marketing and Promotion	$50,000
Business to Business Meetings and Hosting	$50,000
Forums, Workshops and Events	$100,000

Working in partnership with organizations and other orders of government to showcase the tech industry and regional ecosystem, Metro Vancouver, through Invest Vancouver, can maximize results through co-investment and collaboration. Invest Vancouver will endeavor to work with like-minded

partners to promote the Metro Vancouver region's opportunities and value proposition as a diverse and talented hub for technological, innovation and excellence.

ALTERNATIVES

1. That the MVRD Board endorse Metro Vancouver's participation, through Invest Vancouver, in securing a regional presence for the Metro Vancouver region at Web Summit Vancouver 2025.
2. That the MVRD Board receive for information the report dated August 19, 2024, titled "Global Promotion at Web Summit Vancouver 2025".

FINANCIAL IMPLICATIONS

Funds are necessary to secure a presence and implement an activation at the 2025 Web Summit Vancouver conference. If the Board chooses Alternative 1, Invest Vancouver will repurpose $150k in existing funds from the 2024 approved budget, and also budget an additional $150k for 2025 to realize this opportunity. The funds will be used to secure a regional presence at the conference, implement an activation across the region to promote our high tech industry to a global audience, and further investment attraction efforts to scale our regional economy.

If the Board chooses Alternative 2, not to endorse Metro Vancouver's participation and funding, there is a lost opportunity in bringing a regional perspective and presence to the conference in promoting the region's high tech industry to a global audience. Co-investing with other orders of government will maximize results in investment attraction; and should Metro Vancouver decline the opportunity, the ability to attract foreign direct investment would be lost, particularly to competing jurisdictions who will be at the tech conference.

CONCLUSION

Web Summit Vancouver is an important event to promote the Metro Vancouver region's tech industry to a global audience to attract foreign direct investment and facilitate the creation of high-quality jobs to increase prosperity for the residents of the region. Web Summit Vancouver is expected to attract over 15,000 delegates from around the globe including innovators, tech professionals, unicorn founders, investors, startups, and media redefining the global tech industry.

An event of this magnitude and caliber will have significant impact to our regional tech ecosystem and economy and put Metro Vancouver's tech hub on the global stage with international investors and multinational companies. If the Board chooses to endorse this opportunity, $150k from the current 2024 approved budget will need to be repurposed, and an additional $150k would be put into the 2025 budget.

REFERENCES

1. City of Vancouver In-Camera Council Meeting Decision Release – 2025-2027 Vancouver Collision Conference
2. Destination Vancouver Press Release
3. Invest Vancouver Press Release
4. Web Summit Press Release
5. Web Summit Vancouver Website

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To: Invest Vancouver Management Board

From: Lejla Uzicanin, Vice President of Data, Research and Policy, Invest Vancouver
Gregory Freeman, Senior Economist, Invest Vancouver

Date: August 19, 2024 Meeting Date: September 13, 2024

Subject: **Impact of Foreign Direct Investment in British Columbia**

RECOMMENDATION

That the MVRD Board:

a) Receive for information the report dated August 19, 2024, titled "Impact of Foreign Direct Investment in British Columbia" as findings to inform strategic investment attraction efforts to facilitate the creation of high-quality jobs in the Metro Vancouver region;
b) direct staff to forward the *Impact of Foreign Direct Investment in British Columbia* research report to member jurisdictions for information with an offer for Council presentations upon request; and
c) direct staff to forward a copy of the *Impact of Foreign Direct Investment in British Columbia* research report to the Province of BC's Ministry of Jobs, Economic Development and Innovation and to the federal Ministry of Innovation, Science and Economic Development, Global Affairs Canada, and PacifiCan.

EXECUTIVE SUMMARY

Invest Vancouver promotes the Metro Vancouver region as a destination for foreign direct investment (FDI). To inform these efforts, Invest Vancouver analyzed the impact of FDI in BC, including both the employment and contributions to gross domestic product (GDP), and is providing the *Impact of Foreign Direct Investment in British Columbia* research report to share the findings. The picture that emerges is positive, as BC significantly increased its share of foreign multinational enterprises (MNE) employment, with foreign MNEs employing 349,028 people in 2022 and contributing $37.1 billion to GDP in 2021 (most recent data available).

From 2016 to 2022, BC's foreign MNE employment growth rate was the highest in the country at 46.3 per cent compared to 14.3 per cent for Canada. By market, US-owned firms were the largest source of foreign MNE employment, accounting for two-thirds of the total. MNE employment from multiple non-US foreign multiple countries grew quickly, with Sweden and China leading. The findings of the research report will help inform further investment attraction strategies.

PURPOSE

To provide the Invest Vancouver Management Board and MVRD Board with the *Impact of Foreign Direct Investment in British Columbia* research report, and to share its findings to member jurisdictions, the Province of BC's Ministry of Jobs, Economic Development and Innovation, the federal Ministry of Innovation, Science and Economic Development, Global Affairs Canada, and PacifiCan as a way to inform foreign investment attraction activities.

BACKGROUND

The *Impact of Foreign Direct Investment in British Columbia* research report (Attachment 1) is a deliverable identified in the Invest Vancouver Management Board 2024 Work Plan and Invest Vancouver's 2024 Annual Plan that were endorsed by the MVRD Board at its February 23, 2024 meeting.

FOREIGN DIRECT INVESTMENT IMPACT ON BRITISH COLUMBIA'S ECONOMY

Foreign direct investment (FDI) can be beneficial for the regions where it lands, creating jobs and generating economic activity. Foreign Multinational Enterprises (MNEs) in Canada tend to be more productive and innovative than Canadian firms.[1] Additionally, many FDI-supported jobs are in technology- and knowledge-intensive fields, which typically offer relatively well-paid positions. The MNEs investing in BC are a key driver of employment growth in the province. They often introduce global best practices and cutting-edge technologies, promoting skill development and training among local employees, which can boost productivity and competitiveness.

To develop insights that will improve FDI attraction strategies, Invest Vancouver prepared the research report to expand on the previously published *Foreign Direct Investment in British Columbia* report in October 2022, which provides a study of the impacts of FDI. The BC Activities of Multinational Enterprises (AMNE) dataset covers employment at foreign MNEs, 2016 to 2022, by market and sector, and contributions to GDP from 2016 to 2021. For the first time, the data supports trend analysis in employment and contributions to GDP produced by the activities of foreign MNEs in the province. The findings show overall positive growth, demonstrating that BC has benefitted from FDI attraction.

BC's share of Canada's foreign MNE employment continues to grow

FDI has a positive impact on employment in the province, with foreign MNEs employing 349,028 people in 2022 across BC. From 2016 to 2022, the number of jobs at BC MNEs increased by 46.3%, first among Canadian provinces and territories and outpacing employment growth in the total BC economy across all industries (+16.6%). BC's increase of 110,457 foreign MNE jobs represents 1 in 3 of all foreign MNE jobs gained nationwide during the period and the second most after Ontario. As a result of this relatively rapid growth, BC's share of Canadian employment at foreign MNEs increased from 10.6% in 2016 to 13.5% in 2022.

Firms in professional services account for an increasing share of jobs at BC MNEs

By industry classification, the *professional, scientific and technical services* sector was the fastest growing among BC foreign MNEs.[2] From 2016 to 2022, employment increased by 191.4% to 67,952 jobs and accounted for 40.4% of the total increase in BC MNE jobs. Following this remarkable growth, nearly one in every five provincial MNE jobs was in *professional, scientific and technical services*, up from about 1 in 10 in 2016. Firms in the sector, which is concentrated in the Metro Vancouver region, offer quality employment opportunities, typically providing significantly higher

[1] OECD "FDI Qualities Review of Canada" (2024).

[2] The sector encompasses computer systems design; architectural, engineering, and related services; scientific research and development services; management, scientific, and technical consulting; accounting and related services; legal services; specialized design services; advertising and related services; and others.

compensation (an average of $86,524 per year in BC) compared to the provincial average of $60,319 across all sectors.[3]

US-owned firms account for two-thirds of foreign MNE employment in BC
By country, US-owned firms accounted for two-thirds of foreign MNE employment in BC in 2022, after growing by 40.8% to 231,434 jobs. Meanwhile, non-US MNE jobs increased even faster, growing by 58.5% to 117,594. The UK, Sweden, Japan, and France were the largest non-US sources of MNE jobs; Sweden (+886%) and China (+832%) were the fastest growing.

The retail-heavy mix in BC lowers its share of national GDP contributions from foreign MNEs
The two most recent years of available GDP data (2020 and 2021) cover the pandemic-induced economic shock and subsequent uneven recovery. The unusual conditions caused by the pandemic and its immediate aftermath necessitate a cautious handling of year-over-year changes. Nonetheless, in 2021, the data for contributions to GDP (value added) show a strong rebound following the pandemic-related downturn in 2020. In 2021, foreign MNEs contributed $37.1 billion to BC's GDP, up from $25.7 billion in 2016.

BC's share of national GDP contributions from foreign MNEs was 10.1% in 2021, considerably lower than its 13.0% share of national MNE employment that year. The discrepancy arises because BC foreign MNEs are more concentrated in retail, suggesting the need to focus investment attraction on industries with higher productivity.

Turning business intelligence into FDI attraction strategies
The analysis indicates promising directions for future FDI attraction, which will benefit from additional investigation of MNE activity. Promising directions for future FDI attraction include further investigation into foreign MNE activity and FDI projects by **type**, **country**, and **industry classification**.

- **Type of FDI:** Analyzing the composition of the employment gains is crucial. How much is contributed by new branches, the expansion of existing operations, or the acquisition of existing Canadian firms? For instance, if employment growth is driven by expansion, what were the initial steps that led these firms to establish a presence in BC? Did they begin as small initial forays that expanded over time, or did they enter the market with a significant operation and continue to grow? Identifying these patterns should inform strategies to enhance the attraction of new foreign MNEs and support the expansion of those already established.

- **Country:** Understanding the motivations behind FDI growth by country can offer valuable insights. For example, firms in Nordic countries may be attracted to BC due to its focus on sustainability and the green economy. If so, this message could be leveraged to attract firms from other countries with similar values. In contrast, the rapid employment growth at Chinese-owned MNEs might be driven by personal connections and established Canadian

[3] Provincial wage data by sector from Lightcast Q3 2023 Data Set (May 2024).

contacts, particularly in cities like Vancouver and Toronto. Identifying these motivations within markets can help tailor investment attraction strategies to address the values and needs of specific countries.

- **Industry Classification**: The *professional, scientific, and technical services* sector is a significant source of foreign MNE employment growth in BC. This sector includes a wide range of services such as legal, accounting, architecture, engineering, specialized design, computer systems design, management consulting, scientific research and development, advertising, and public relations. Identifying which specific industry groups are driving this growth should be a priority for targeted investment attraction. Additionally, understanding whether the type of FDI (greenfield, acquisition, brownfield, or reinvestment/expansion) varies within these industry groups can further refine these strategies. Even within some of the slower-growing sectors, such as *manufacturing*, there may be specific subsector success stories, such as firms working on various aspects of the hydrogen value chain, that warrant further investigation. Invest Vancouver will continue to delve into specific high potential areas to identify areas where the region's value proposition intersects with the location priorities of foreign MNEs.

ALTERNATIVES

1. That the MVRD Board:
   a) Receive for information the report dated August 19, 2024, titled "Impact of Foreign Direct Investment in British Columbia" as findings to inform strategic investment attraction efforts in order to facilitate the creation of high-quality jobs in the Metro Vancouver region;
   b) direct staff to forward the *Impact of Foreign Direct Investment in British Columbia* research report to member jurisdictions for information with an offer for Council presentations upon request; and
   c) direct staff to forward a copy of the *Impact of Foreign Direct Investment in British Columbia* research report to the Province of BC's Ministry of Jobs, Economic Development and Innovation and to the federal Ministry of Innovation, Science and Economic Development, Global Affairs Canada, and PacifiCan.

2. That the MVRD Board receive for information the report dated August 19, 2024, and titled "Impact of Foreign Direct Investment in British Columbia".

FINANCIAL IMPLICATIONS

All activities associated with the research report were completed within the Invest Vancouver's 2024 board approved budget. The custom set of data used for analysis was made available through the Regional Planning and Housing Services Department.

CONCLUSION

The substantial impact of foreign MNEs' activities on employment and GDP in the province underscores the importance of attracting FDI and highlights the value of a regional service like Invest Vancouver. A precise understanding of FDI flows, including sector and market specifics, will

enhance the effectiveness of investment attraction efforts. The business intelligence generated by the *Impact of Foreign Direct Investment in British Columbia* research report will inform Invest Vancouver's investment attraction strategy.

Staff recommends that the research be distributed to partners at the municipal, provincial, and federal levels to inform and guide other organizations involved in attracting foreign direct investment on future activities. Going forward, Invest Vancouver will continue to investigate the areas identified in the research report to better understand opportunities and the best ways to target FDI, ensuring that strategies are effective and aligned with regional economic goals. This ongoing investigation will help identify high-potential sectors and markets, allowing Invest Vancouver to tailor its targeted investment attraction strategy to attract investments that foster job creation, innovation, and sustainable growth in the region.

ATTACHMENTS

1. *Impact of Foreign Direct Investment in BC* research report
2. Presentation re: *Impact of Foreign Direct Investment in BC*

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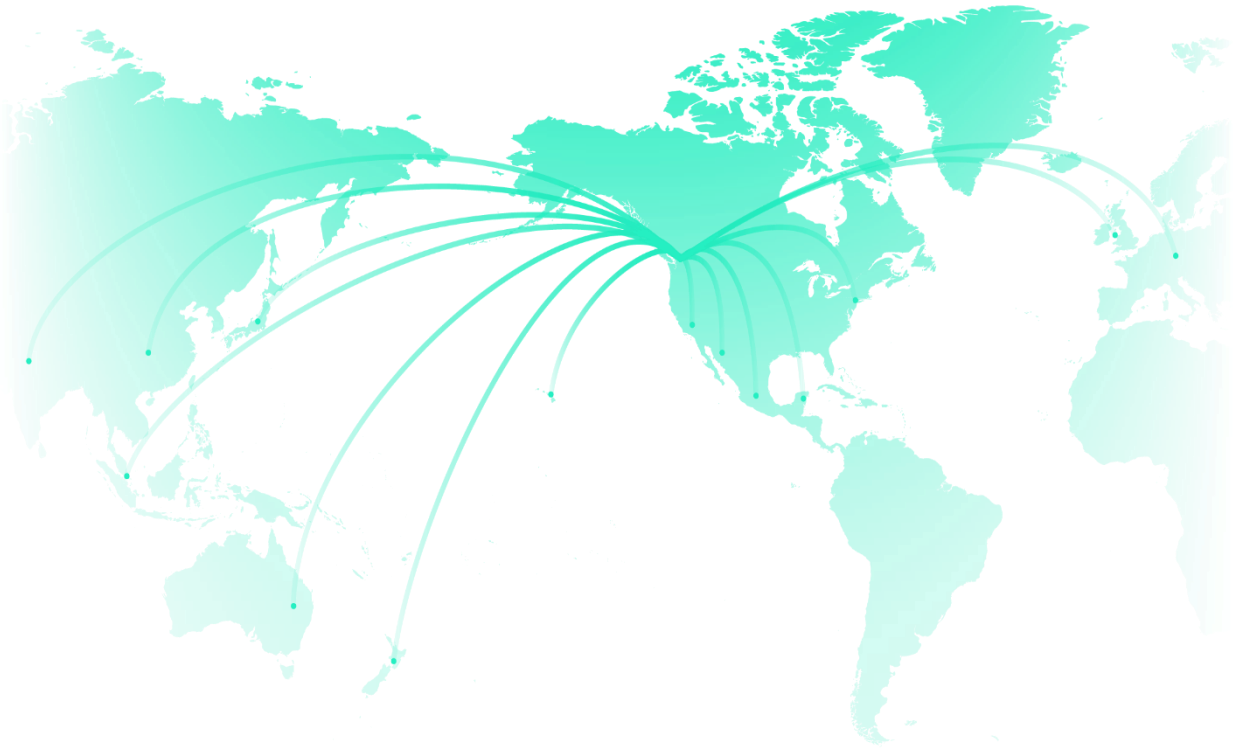
INVEST VANCOUVER
A service of metrovancouver



Impact of Foreign Direct Investment in British Columbia

JULY 2024

Prepared by Invest Vancouver, a service of Metro Vancouver

Indigenous Territorial Recognition
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: q̓ icə̓y̓ (Katzie), q̓ ʷɑ:n̓ƛ̓ ən̓ (Kwantlen), kʷikʷəƛ̓ əm (Kwikwetlem), máthxwi (Matsqui), xʷməθkʷəy̓ əm (Musqueam), qiqéyt (Qayqayt), se’mya’me (Semiahmoo), Sḵwx̱ wú7mesh Úxwumixw (Squamish), scəw̓aθən məsteyəxʷ (Tsawwassen) and səlilwətaɬ (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.

About Metro Vancouver
Metro Vancouver is a diverse organization that plans for and delivers regional utility services, including water, sewers, and wastewater treatment, and solid waste management. It also regulates air quality, plans for urban growth, manages a regional parks system, delivers affordable housing, provides an economic development service through Invest Vancouver, and serves as a regional federation. The organization is a federation of 21 municipalities, one electoral area, and one treaty First Nation located in the region of the same name.

About Invest Vancouver
Invest Vancouver is Metro Vancouver’s regional economic development service. By attracting strategic investment in key export-oriented industries, conducting research and policy analysis, and fostering collaboration on a local, national, and global scale, Invest Vancouver is facilitating the creation of high-quality jobs to achieve a resilient regional economy that delivers prosperity for all residents of the Metro Vancouver region. Working closely with leaders across all levels of government in the region and beyond, Invest Vancouver is addressing regional concerns to increase economic resilience, strengthening strategic export-oriented industries, attracting word-class companies, and laying the foundation for a region where every resident can thrive in today’s rapidly evolving global economy. Our data-driven, objective research aims to provide actionable intelligence to position the region for success.

For any questions about the report contact: info@investvancouver.ca

Acknowledgements
Invest Vancouver thanks Metro Vancouver’s Regional Planning and Housing Services Department for purchasing the custom dataset used in this report and extends its gratitude to the StatCan AMNE team and their colleagues for the helpful feedback and review of our analysis.

Contents

Key Findings

Foreign direct investment (FDI) can create connections to diverse markets, stimulate the development of local supply chains, and foster competition. Small, open economies like the Metro Vancouver region and British Columbia (BC) benefit from FDI that increases local economic activity, enhances employment opportunities, and strengthens the tax base. The remarkable impact of FDI in BC is visible in employment and GDP contributions from the activities of foreign multinational enterprises (MNEs).

From 2016 to 2022:

- **Foreign MNE employment in BC (+46.3%) increased significantly more than in Canada (+14.3%).** BC ranked first in percentage change in foreign MNE employment among Canadian provinces and territories.
- **BC accounted for 1 in 3 of the foreign MNE jobs gained in Canada,** the second largest gain (+110,457) in such jobs after Ontario (+182,761). Quebec was third (+35,351 jobs).
- **The *professional, scientific and technical services* sector accounted for 40.4% of all foreign MNE employment gains in BC,** increasing by 191.4% to 67,952 jobs. Nearly one in every five foreign MNE jobs in the province was in *professional, scientific and technical services* in 2022, up from about one in 10 in 2016. Jobs in the sector tend to pay well: the average annual salary in BC is 43.4% higher than the overall provincial average.
- **The fastest growing sources of foreign MNE employment in BC were Sweden (+886%) and China (+832%).** US-owned firms accounted for two-thirds of foreign MNE employment in BC in 2022; the United Kingdom, Sweden, Japan, and France were the largest non-US sources. US MNE jobs grew by 40.8% to 231,434 jobs; non-US foreign MNE jobs increased even faster, growing by 58.5% to 117,594 jobs.
- **Overall, foreign MNEs employed 349,028 people in BC, ranking third in Canada.** Ontario was first with 1,313,325 foreign MNE jobs, followed by Quebec (413,815).
- **The contribution to GDP from foreign MNEs increased by 44.7% to $37.1 billion in 2021** (the latest available). BC's share of national GDP contributions from foreign MNEs was 10.1% in 2021, considerably lower than its 13.0% share of national MNE employment that year. The discrepancy arises because BC foreign MNEs are more concentrated in retail, suggesting the need to focus investment attraction on industries with higher productivity.

The rapid increase in employment at foreign MNEs and their growing contributions to GDP in the province highlights the importance of attracting FDI. Invest Vancouver promotes the region to foreign firms and investors as a destination for FDI, targeting select, export-oriented industries where local advantages such as a skilled workforce and specialized talent offer greater competitiveness in global markets. Almost by definition, such firms need to have above average productivity to be globally competitive. This report provides data-driven intelligence on the impact of FDI through the activities of foreign MNEs in BC and suggests pathways to more effective investment attraction strategies, which will ultimately benefit the BC economy.

Report Overview

Introduction

Foreign direct investment (FDI) can be beneficial for the regions where it lands, creating jobs and generating economic activity. Foreign multinational enterprises (MNEs) in Canada tend to be more productive and innovative than Canadian firms.[1] Additionally, many FDI-supported jobs are in technology- and knowledge-intensive fields, which typically offer relatively well-paid positions. The MNEs investing in BC are a key driver of employment growth in the province. They often introduce global best practices and cutting-edge technologies, promoting skill development and training among local employees, which can boost productivity and competitiveness.

To develop insights that will improve FDI attraction strategies, this report expands on the *Foreign Direct Investment in British Columbia* October 2022 study of the downstream impacts of FDI. For the first time, the data support trend analysis in employment and contributions to gross domestic product (GDP) produced by the activities of foreign MNEs in the province. The picture that emerges is positive, demonstrating that BC has benefitted from FDI attraction. Foreign MNEs in BC employed 349,028 people in 2022, up 46.3% since 2016.

The rest of this overview defines FDI; explains how FDI is measured and analyzed; summarizes financial metrics for FDI flows; and introduces the Statistics Canada (StatCan) BC Activities of Multinational Enterprises (AMNE) dataset.

The body of the report analyzes the StatCan BC AMNE dataset in two sections:

- The first section describes the employment impact, from 2016 to 2022, of foreign MNEs in BC.[2] This includes BC's share of national MNE employment; employment trends (growth and share) by industry classification; jobs by source country; and a breakdown of US and non-US foreign MNE jobs by industry classification.

- The second section covers foreign MNE contributions to GDP, from 2016 to 2021.[3] This includes national context; GDP contributions by industry classification and productivity implications; and, the source of contributions by country.

The report concludes with a discussion of how Invest Vancouver will convert the resulting business intelligence into FDI attraction strategies and suggests areas for further exploration.

[1] OECD "FDI Qualities Review of Canada" (2024).

[2] This is the most granular data available.

[3] StatCan has not yet released the relevant provincial data for 2022.

Foreign direct investment makes headlines one project at a time

FDI occurs when an individual or firm from one country invests in a business in another and the investor has significant control or influence over the business's decisions.[4] Firms engage in FDI strategies for a variety of reasons, including gaining access to markets; securing natural resources; acquiring technology and intellectual property; connecting to other nearby countries through geographic proximity, transportation infrastructure, and trade agreements; accessing specialized expertise; and leveraging low-cost environments and favorable economic policies.

FDI can take various forms, including greenfield investments (initiating new operations from the ground up) and brownfield investments (making acquisitions, and renovating or expanding existing facilities).

In 2024, for instance:

- Lumotive, a US-based manufacturer of 3D sensors, and Wayve, a UK-based developer of AI software for autonomous driving, both established a presence in Canada by opening research and development offices in the Metro Vancouver region.
- SandboxAq, a US-based spinoff of Google-parent Alphabet, acquired Vancouver-based Good Chemistry, a firm that specializes in quantum chemistry simulation for designing materials and drugs.
- Amgen, an American biotechnology giant, expanded its Canadian operations with a $27 million investment in its Burnaby research facility.

Some FDI projects, like those mentioned above, are public knowledge. Invest Vancouver worked with Lumotive and Wayve during their respective location searches; the acquisition of Good Chemistry was covered by the media and is included in data from the commercial service PitchBook; and the Amgen project generated media coverage. Yet, the investing firms are not required to announce their activity, so a comprehensive, project-by-project list of FDI investments does not exist.[5] In the absence of such a list, Invest Vancouver focuses on the cumulative contributions to provincial employment and GDP that result from the aggregate impact of all the new operations, expansions, and acquisitions.

Two approaches to tracking FDI

StatCan measures and analyzes FDI in aggregate using two approaches.

1. The first treats FDI as a flow of capital across international boundaries, tracking it with mandatory reporting of financial metrics such as the quarterly inflows of foreign capital into Canadian businesses and the total value of foreign investments in Canadian businesses.

[4] The foreign firm's investment may establish effective control or substantial influence over the Canadian operation's decision-making processes (as in an acquisition) or maintain it (as in an expansion to an existing operation). Direct investment is one of four functional categories (along with portfolio investment, reserves assets and other investment) of financial assets and liabilities in a country's international investment position, i.e. what it owns (its external assets) and what it owes to non-residents (its external liabilities). In contrast to the other three functional categories, in direct investments the investor has a significant influence on the management of an enterprise, including investments where there is a controlling interest. Statistics Canada, "Canada's International Investment Position (IIP)."

[5] fDi Markets tracks investment projects globally using news publications, industry organizations, and other public sources, which makes it useful but not comprehensive.

2. The second approach, the one adopted for this report, considers the impact of FDI as a set of activities carried out by foreign-controlled firms, measured by their contributions to GDP and employment.

To illustrate the difference between the two approaches, consider a foreign firm investing in a new operation in Canada. From a capital flow perspective, the focus is the inflow of funds and its effect on the balance of payments (the record of economic transactions between residents of a country and the rest of the world), and the effect on Canada's international investment position (the value and composition of the country's external financial assets and liabilities). Considering the investment as a set of activities, in contrast, shifts the focus to the impact of firm's operations on the economy. These might include job creation, contributions to GDP, technology transfer, supply chain development, knowledge spillovers, and contributions to innovation. The employment and GDP contributions from foreign MNEs covered in this report underscore the positive impact and importance of attracting FDI.

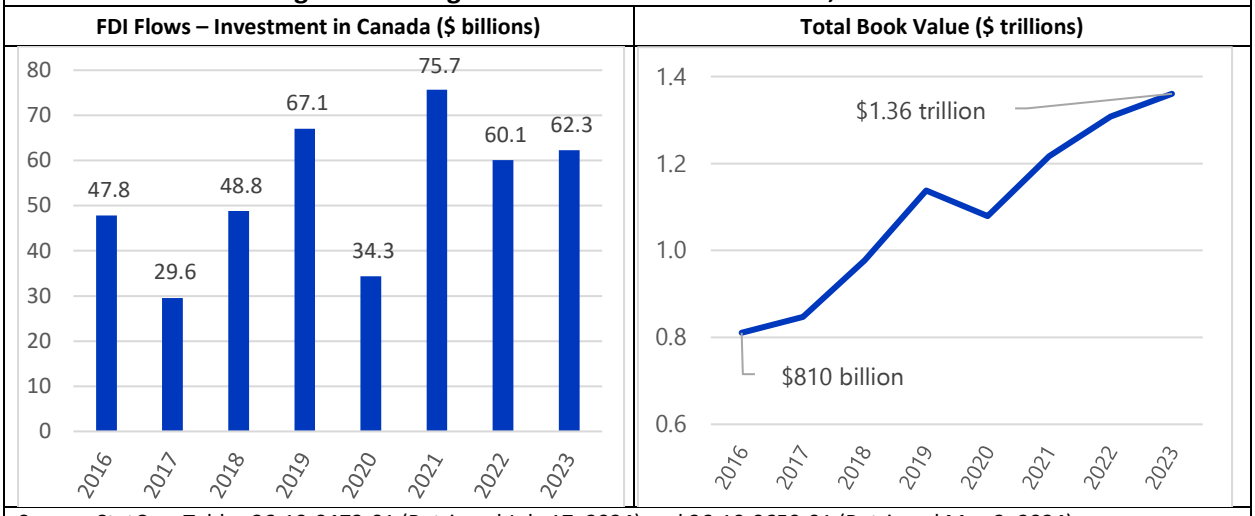
FDI measured as a flow of capital across international boundaries

Invest in Canada provides in-depth coverage of the financial metrics used to track FDI as a capital flow, which are briefly summarized in Figure 1.[6] The net annual flows of FDI into Canada for the period 2016 to 2023 were volatile, ranging from a low of $29.6 billion in 2017 to a high of $75.7 billion in 2021. The total book value of foreign investments in Canadian businesses, a financial metric that tracks the cumulative value of direct investments in Canada up to a given point in time, rose from $810 billion in 2016 to $1.36 trillion in 2023. These national statistics cannot be disaggregated for sub-national levels, which means provincial, census metropolitan area, and municipal details are not available.[7] As demonstrated by the positive annual inflows and increasing total book value, investors continue to choose to invest in Canada.

[6] See Figures A1 and A2 in the appendix for the annual FDI flows and total FDI stock by country of origin. For a detailed analysis of these financial metrics, see FDI Report 2023 | Invest in Canada (investcanada.ca).

[7] To reduce the response burden of mandatory reporting, firms are only required to report consolidated balance sheets with data aggregated for all of their Canadian establishments.

Figure 1: Foreign Direct Investment in Canada, 2016-2023[8]



Source: StatCan. Tables 36-10-0473-01 (Retrieved July 17, 2024) and 36-10-0659-01 (Retrieved May 2, 2024).

FDI analyzed as a set of activities of foreign-controlled firms

The second StatCan approach provides a clearer picture of the role of FDI in the provincial economy because the *Activities of Multinational Enterprises* (AMNE) dataset measures the downstream impact of FDI in terms of the jobs and contributions to GDP produced by the activities of foreign MNEs.[9] MNEs include both foreign multinationals (firms in Canada controlled by a foreign parent, i.e. greater than 50% foreign ownership of voting shares) and Canadian multinationals (Canadian-controlled firms with a foreign affiliate). Some foreign multinational enterprises operating in British Columbia are immediately foreign-owned but have an ultimate Canadian parent (known as round-tripping).

At the national level, the contributions of foreign MNEs to gross domestic product (GDP), employment, and gross fixed capital formation are broken out by industry, and by country of origin.[10] Metro Vancouver purchased provincial AMNE data specific to BC, hereafter referred to as the *StatCan BC AMNE dataset*. StatCan does not release sub-provincial AMNE data, so data covering just the Metro Vancouver region is unavailable.

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[8] The yearly changes in overall investment position (the total book value in the second chart in Figure 1) are not necessarily equivalent to changes in the overall flow of the volume of investment (the FDI flows in the first chart in Figure 1). "[T]hese changes in position occasionally reflect both a transactional component [the FDI flows] and a revaluation component [adjustments for currency fluctuations] that can give rise to changes in the investment stock without an accompanying change in the flow." Guy Gellatly and Ryan Macdonald, "Canada's International Investment Position: Recent Trends and Implications for Aggregate Measure of Income and Wealth," *Economic Analysis (EA) Research Paper Series*, Statistics Canada, February 2012, p. 12.

[9] Lipsey recommends this approach. R. E. Lipsey, "Home- and Host-Country Effects of Foreign Direct Investment," in *Challenges to Globalization: Analyzing the Economics*, ed. R. E. Baldwin and L. A. Winters (Chicago: University of Chicago Press, 2004), 333-382.

[10] For national level AMNE data see Activities of Multinational Enterprises: Interactive Tool (statcan.gc.ca) **GDP** is the total unduplicated value of the goods and services produced in a region. Gross Domestic Product (statcan.gc.ca) **Employment** is the number of jobs Labour statistics consistent with the System of National Accounts (SNA), by job category and industry (statcan.gc.ca). **Gross fixed capital formation** is any new or existing acquisition of non-financial assets, minus the value of disposals of non-financial assets Gross Capital Formation (statcan.gc.ca).

In the StatCan BC AMNE dataset:

- The primary unit of analysis of MNEs is the *establishment*.[11]
- Establishments are assigned to one of twenty groups of related industries called *sectors*.[12]
- Government Business Enterprises, which by definition are not foreign-owned, are excluded.
- Statistics Canada may suppress data for sectors and countries to maintain firm confidentiality, especially where one or two large firms dominate.
- The data is specific to BC. For firms with activity in more than one province, the impacts of the non-BC activities are excluded.

As noted above, the rest of this report focuses on the downstream impacts of FDI through the activities of foreign-controlled companies in BC, specifically the resulting employment and contributions to GDP.[13]

Employment Contributions from the Activities of Multinational Enterprises in BC

BC's share of Canada's foreign MNE employment continues to grow[14]

BC's share of Canadian employment at foreign MNEs increased from 10.6% in 2016 to 13.5% in 2022, reflecting a percentage increase in foreign MNE jobs that was significantly greater in the province than in the country as a whole, as shown in Figure 2. For comparison, BC's share of all Canadian jobs in the corporate sector during the period increased from 12.9% to 14.2%.[15]

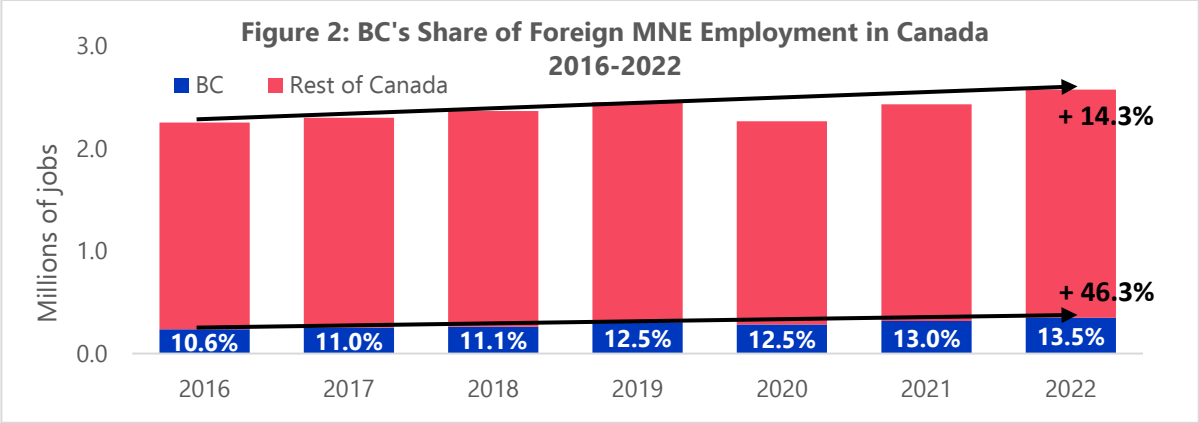
[11] StatCan defines an establishment as the most homogenous unit of production for which a business keeps accounting records. An establishment is typically the smallest entity or group of entities that: (a) produces a uniform set of goods or services; (b) operates within a single province; and (c) provides data on the value of its output, the cost of key inputs, and the cost and quantity of labor used in production. Business register data (statcan.gc.ca).

[12] A *sector* is the broadest category of the North American Industry Classification System (NAICS). The NAICS hierarchy consists of five levels of increasing specificity: *sector, subsector, industry group, NAICS industry, national industry.* Establishments are assigned to NAICS sectors based on their business register NAICS code.

[13] The StatCan BC AMNE dataset also includes data on gross fixed capital formation, a metric that exhibits considerable annual fluctuation. This report focuses on employment and contributions to GDP (value added), i.e. how the capital formation ultimately translates into economic activity. The gross fixed capital formation data is included in the Appendix.

[14] Figures on this page from StatCan AMNE dataset.

[15] Foreign MNEs belong to the portion of the economy comprised of businesses with a distinct legal identity (the corporate sector). They are not part of the non-corporate sector (unincorporated businesses, sole proprietorships, partnerships, and informal enterprises), the public sector (the portion of the economy owned, operated and controlled by the government) or the non-profit sector (which is neither part of the government nor operated for profit).



Source: StatCan. Table 36-10-0620-01 Activities of multinational enterprises in Canada, Canadian and foreign multinationals, by province, sector and industry, establishment level

The MNE job numbers underscore the province's attractiveness as a destination for foreign investment:

- **Foreign MNE employment in BC (+46.3%) increased significantly more than in Canada (+14.3%).** It also outpaced employment growth in the total economy across all industries, which increased 16.6% in BC and 8.2% in Canada.
- **BC accounted for one third of the increase in jobs at foreign MNEs in Canada.**
- **BC ranked first in percentage change (+46.3%) and had the second largest absolute gain in foreign MNE jobs** among Canadian provinces and territories.[16] Ontario gained the most MNE jobs (+182,761), BC was second (+110,457), and Quebec was third (+35,351).
- **BC was third in Canada in total foreign MNE jobs in 2022.** Ontario was first with 1,313,325 foreign MNE jobs, followed by Quebec (413,815) and BC (349,028). The Canadian total was 2,576,262 foreign MNE jobs.

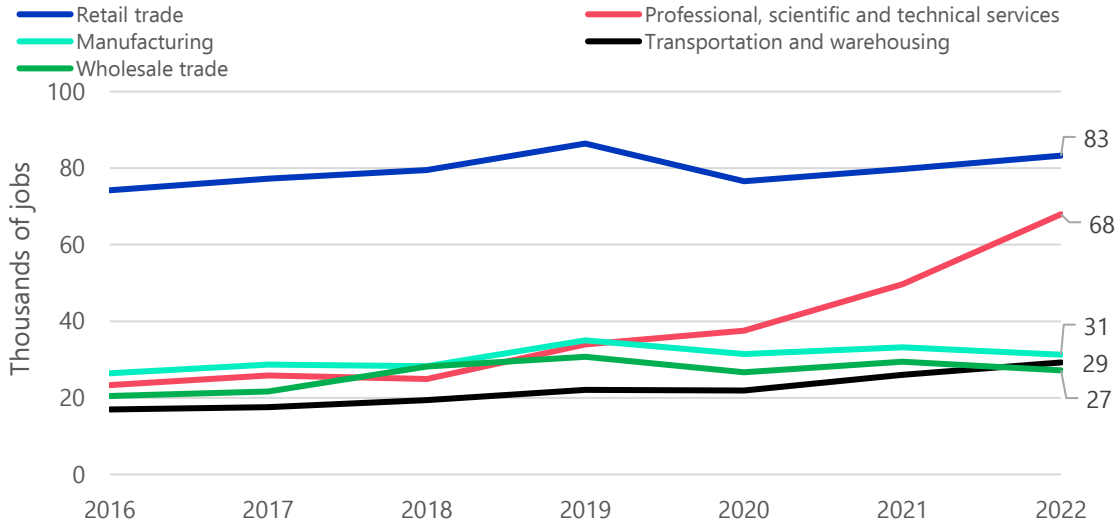
In 2022, almost one in five jobs (18.2%) at incorporated businesses in the province was at a foreign MNE, up from 15.0% in 2016. These are just the *direct* jobs, i.e. the people who work at those firms. When considering employment, it is important to note the broader impact of foreign MNEs. Foreign MNEs also support a growing number of additional *indirect* and *induced* jobs. Foreign MNEs sustain indirect jobs when they purchase goods and services from suppliers based in BC and Canada. Employees of foreign MNEs and their suppliers create induced jobs when they spend their wages.

[16] See Figure A3 in the appendix for MNE jobs by province.

Firms in professional, scientific and technical services are driving growth

From 2016 to 2022, the *professional, scientific and technical services* sector was the fastest growing among BC foreign MNEs, as shown in Figure 3. Employment in this sector increased by 191.4%, rising from 23,322 to 67,952 jobs. This growth accounted for 40.4% of the total foreign MNE employment increase during the period. Firms in the province's *professional, scientific and technical services* sector, which is concentrated in the Metro Vancouver region, rely on the highly specialized knowledge and skills of their well-educated and often licensed workforce.[17] The sector offers quality employment opportunities, typically providing significantly higher compensation (an average of $86,524 per year in BC) compared to the provincial average of $60,319 across all sectors.[18]

Figure 3: Foreign MNE Contributions to BC Employment, 2016-2022, Top 5 Sectors



Source: StatCan BC AMNE dataset

Figure 3 also shows:

- *Transportation and warehousing* increased by 72.4% to 29,235 jobs. The average salary in the sector in BC is $66,845.
- Employment at foreign MNEs engaged in *wholesale trade* grew by 32.8% to 27,190 jobs, while the number of jobs at foreign MNEs in *manufacturing* expanded by 18.4% to 31,278. The average salary in *wholesale trade* is $68,852; in *manufacturing,* it is $63,862.
- Jobs in *retail trade* increased by 12.1% to 83,223, making it the largest but slowest-growing sector among the five largest sectors for foreign MNE employment in BC. The average salary in the *retail trade* sector in BC is $39,120, the only one of the top five sectors for foreign MNE employment to pay below the overall provincial average.

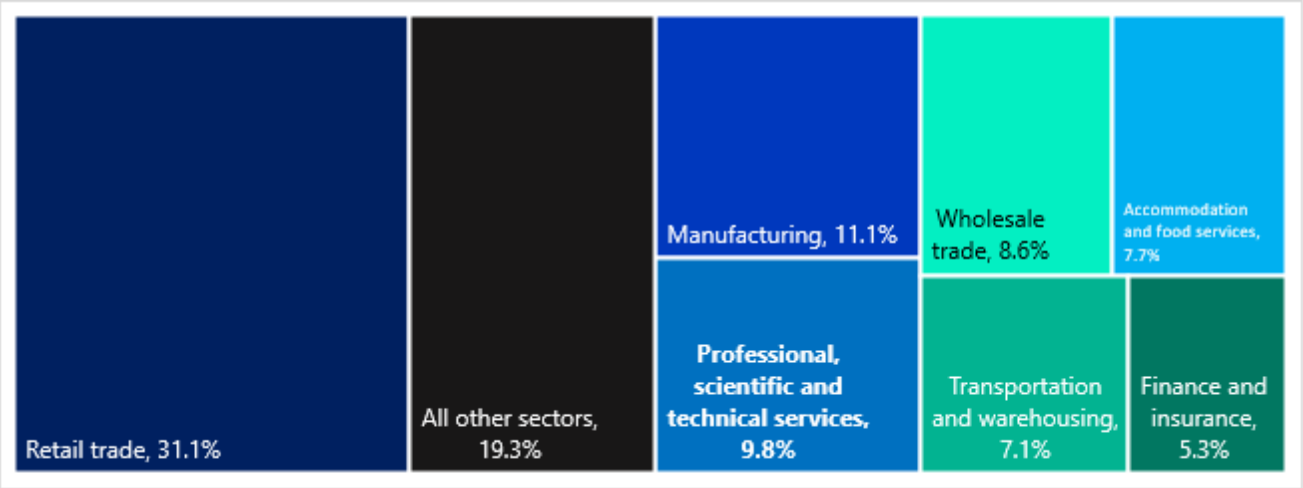
[17] The sector encompasses computer systems design; architectural, engineering, and related services; scientific research and development services; management, scientific, and technical consulting; accounting and related services; legal services; specialized design services; advertising and related services; and others.

[18] Moreover, MNEs generally pay more than domestically owned firms do and the presence of foreign firms raises wages. See, for example, BDO Canada "Foreign direct investment in the Canadian economy" (2023). Provincial wage data by sector from Lightcast Q3 2023 Data Set (May 2024).

Firms in professional services account for an increasing share of jobs at BC MNEs

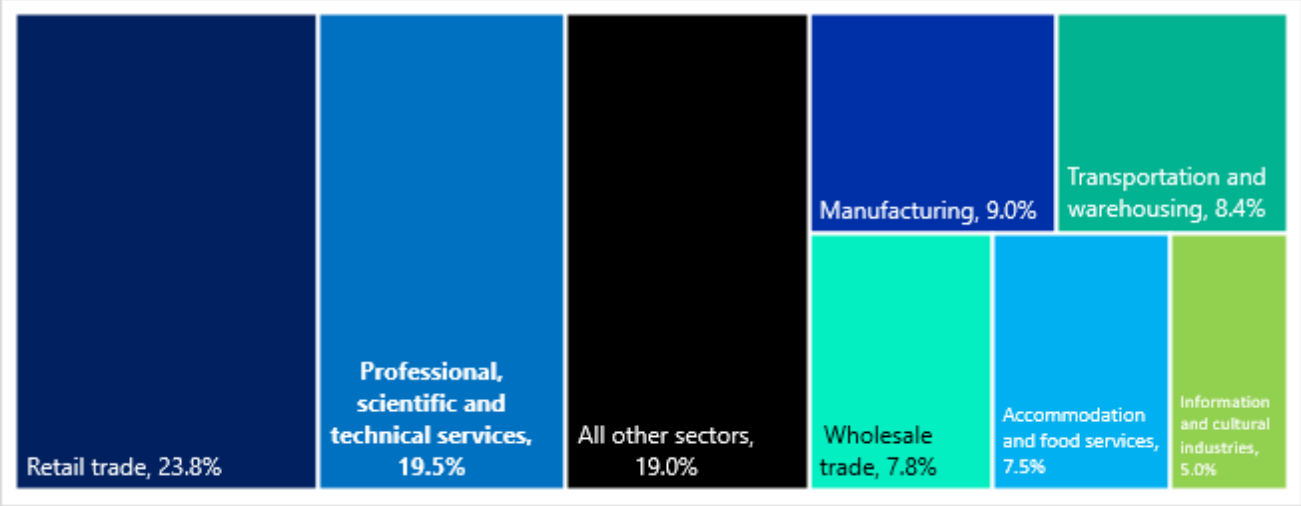
The increase in jobs at foreign-owned firms in the *professional, scientific and technical services* sector has significantly altered the composition of BC's foreign MNE workforce in a relatively short time, as shown in Figures 4 and 5. The sector accounted for 1 in 5 foreign MNE jobs in the province in 2022, up from one in 10 in 2016. Employment at foreign MNEs in *retail trade* was up slightly during the period, but the sector's share of provincial foreign MNE employment fell by 7.3 percentage points to 23.8%.

Figure 4: Foreign MNE Contributions to BC Employment in 2016 – Share by Sector



Source: StatCan BC AMNE dataset

Figure 5: Foreign MNE Contributions to BC Employment in 2022 – Share by Sector[19]



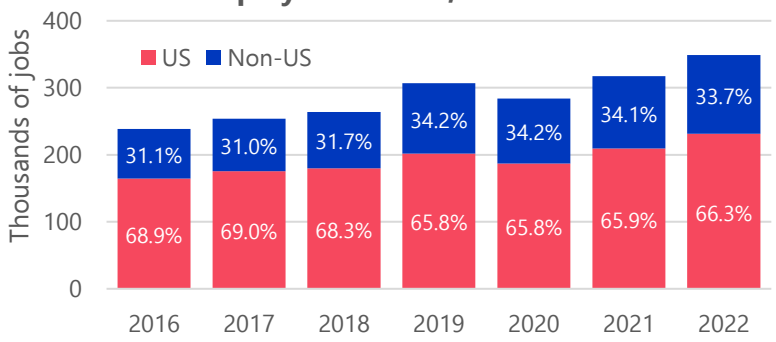
Source: StatCan BC AMNE dataset

[19] The top five sectors for MNE employment in Canada in 2022 were manufacturing (20.6%), retail trade (16.8%), professional, scientific and technical services (13.9%), wholesale trade (11.5%), and administrative and support, waste management and remediation (7.3%).

US-owned firms account for two-thirds of foreign MNE employment in BC

Employment at US-owned MNEs in BC grew by 40.8%, rising from 164,369 jobs in 2016 to 231,434 jobs in 2022, as shown in Figure 6. This impressive growth occurred despite the global pandemic. During the same period, employment at BC foreign MNEs with non-US owners increased by 58.5%, from 74,402 to 117,594 jobs. Thus, while employment at US MNEs grew, employment at non-US foreign MNEs grew even faster. Consequently, the US share of foreign MNE employment in BC fell slightly to two-thirds (66.3%).

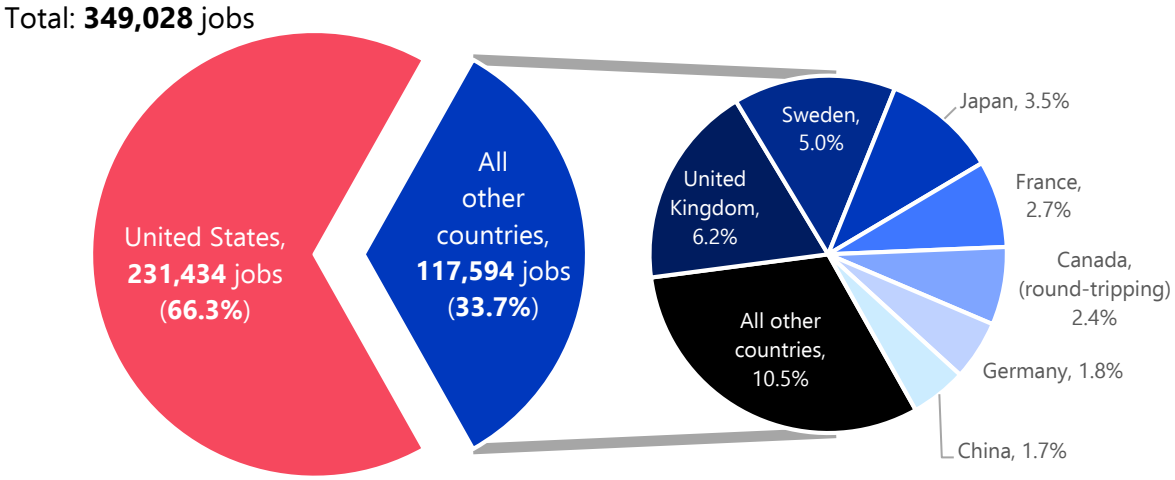
Figure 6: US-owned Share of foreign MNE Employment in BC, 2016-2022



Source: StatCan BC AMNE dataset

Figure 7 presents a breakdown of the employment contribution from non-US foreign MNEs. The United Kingdom, Sweden, Japan, and France are the largest non-US sources of foreign MNE jobs. After US firms, those from the United Kingdom accounted for the most jobs in 2022 (18.4% of the 117,594 non-US foreign MNE jobs, 6.2% of all foreign MNE jobs).

Figure 7: Foreign MNE Contributions to BC Employment, Share by Country (2022)

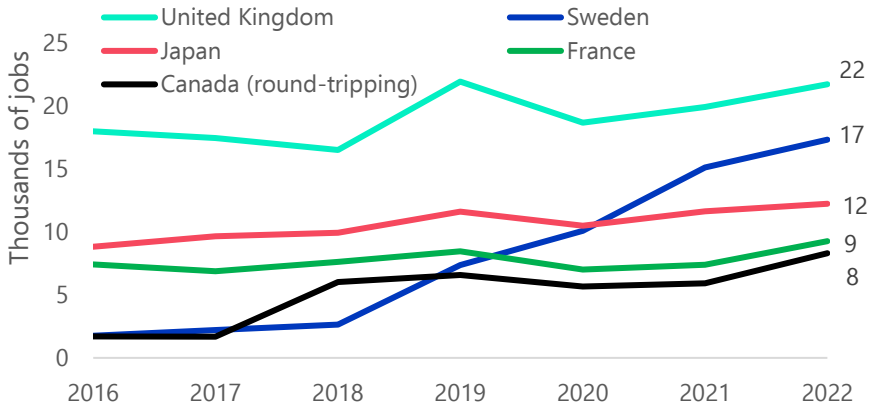


Source: StatCan BC AMNE dataset

Rising BC employment at foreign-owned firms from Sweden, China, the UK and more

Among the five largest non-American sources of foreign MNE employment in BC, the greatest percentage increases in employment for the period 2016 to 2022 were from Swedish and Canadian round-tripping[20] enterprises, as shown in Figure 8. Notably, Sweden (+885.7%) and China (+832.1%) had the largest percentage gains in contributions to BC employment at foreign MNEs, as shown in Figure 9. Employment contributions from MNEs from both countries grew from relatively small starting positions in 2016 but finished 2022 among the seven largest non-US sources of foreign MNE employment in BC.

Figure 8: Largest non-US Sources of Foreign MNE Employment in BC, 2016-2022



Source: StatCan BC AMNE dataset

Figure 9: Top Sources of BC Foreign MNE Employment, Ranked by % Change in Jobs since 2016

Country	Jobs in 2022	% change 2016-2022	Country	Jobs in 2022	% change 2016-2022
Sweden	17,299	885.7%	United Kingdom	21,693	20.8%
China	5,956	832.1%	Norway	1,378	19.2%
Canada (round-tripping)	8,295	389.7%	Italy	1,455	18.6%
Indonesia	2,006	110.5%	Ireland	3,471	17.4%
Denmark	1,653	80.5%	Germany	6,334	4.8%
Singapore	1,239	74.3%	Switzerland	4,535	1.2%
Australia	4,239	66.6%	Spain	1,384	-1.8%
Belgium	1,815	64.9%	Netherlands	3,488	-2.6%
United States	231,434	40.8%	Hong Kong	2,403	-4.1%
Japan	12,217	38.7%	All other countries	7,483	17.8%
France	9,251	25.0%			
Total				**349,028**	**46.3%**

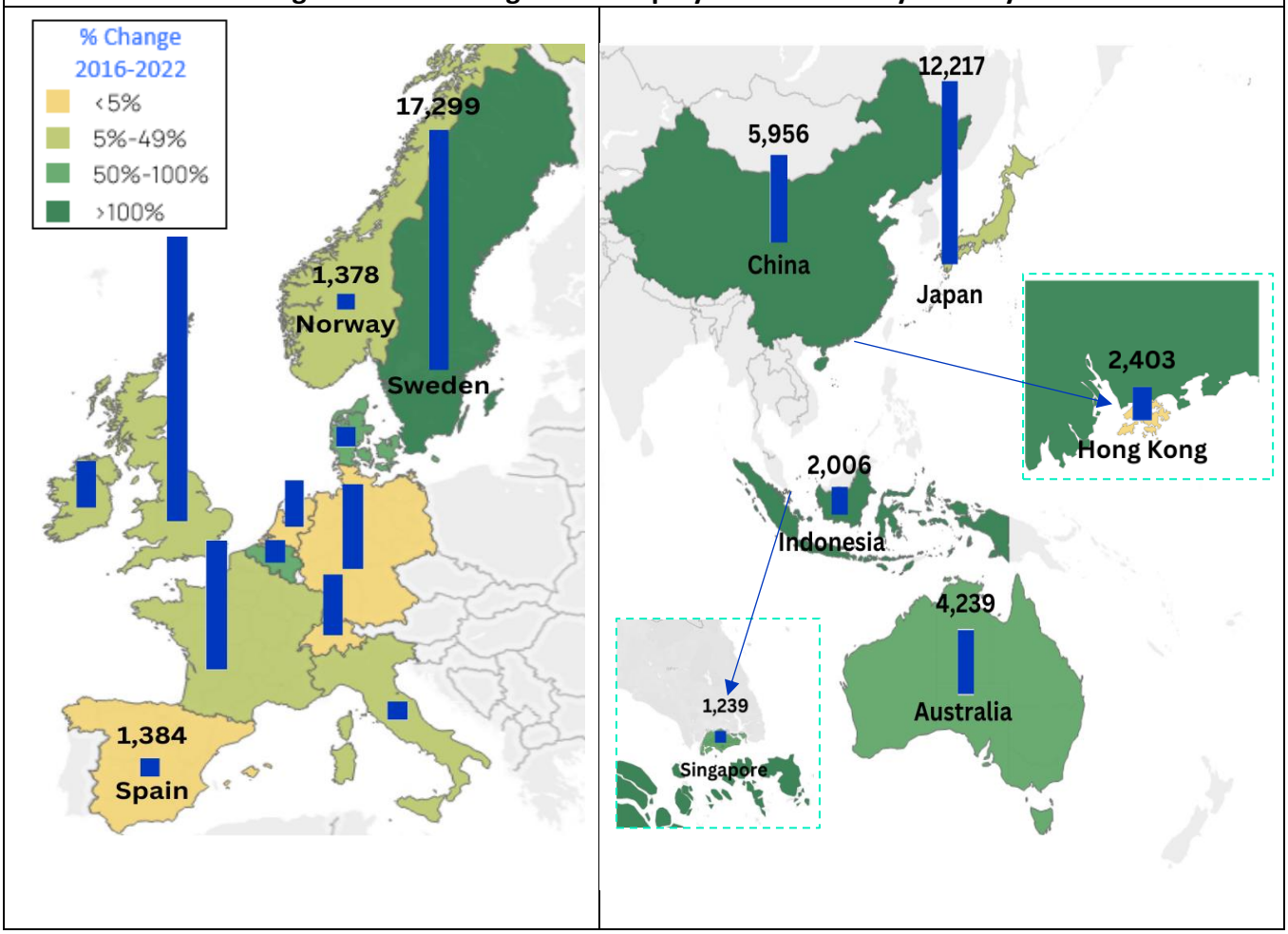
Source: StatCan BC AMNE dataset

[20] Foreign-owned enterprises that have an ultimate Canadian parent.

Global sources of foreign MNE employment in BC

For a visual representation of the sources of BC employment at foreign MNEs, Figure 10 presents the number of jobs in BC in 2022 broken out by home country of the firms for multinationals with headquarters in Europe and the Indo-Pacific. The shading of the country represents the change since 2016, with darker shades of green indicating greater percentage increases. (No data is available for the countries in grey.)

Figure 10: BC Foreign MNE Employment in 2022 by Country



Source: StatCan BC AMNE dataset

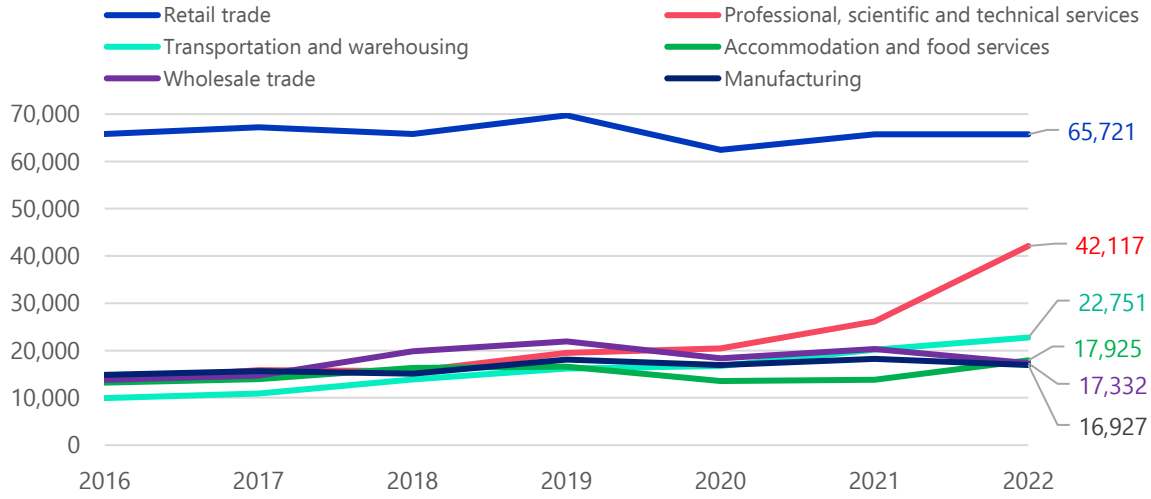
In aggregate, MNEs from the twelve European countries in the map on the left side of Figure 10 employed 73,756 people in BC in 2022, an increase of 47.5% since 2016. Firms from the six countries in the Indo-Pacific map contributed 28,060 jobs in BC, a 73.6% increase.

US MNE job growth in BC lead by professional services and transportation

So far, MNE employment has been examined ***by industry classification*** (by sector, ignoring distinctions among countries), and ***by country*** of firm ownership (ignoring the sectors). Here, the focus shifts to foreign MNE employment by **country *and* sector**. Figure 11 breaks down US MNE employment by sector. Figure 12 does the same for all non-US countries in aggregate. Ideally, the breakdown would isolate individual countries, but non-US data is more limited because StatCan redacts the data or does not make it available. As shown previously, the share of BC MNE jobs from countries other than the US is comparatively quite small.

US MNEs in BC's *professional, scientific and technical services* sector contributed 28,364 more jobs in 2022 than in 2016, as shown in Figure 11, marking a rise of 206.2%. The next largest increase was in the *transportation and warehousing* sector, which added 12,809 jobs for a gain of 128.8%.

Figure 11: US-owned MNEs' Contribution to BC Employment Top Sectors (2016-2022)



Source: StatCan BC AMNE dataset

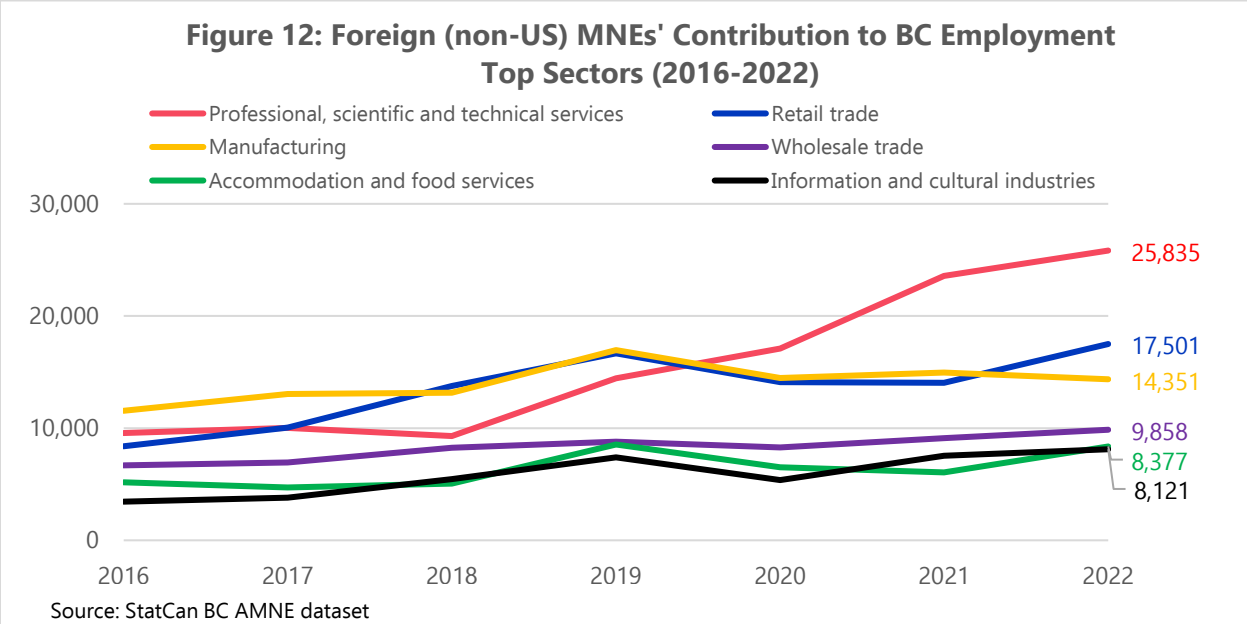
Combined, employment in the top sectors (Figure 11) grew by 39.1% to 182,773 jobs in 2022. Meanwhile, the remaining sectors saw a 47.9% increase to 48,620 jobs, split as follows:[21]

- **9,885** in *administrative and support, waste management and remediation services* (+34.0%)
- **9,317** in *information and cultural industries* (+86.1%)
- **7,084** in *finance and insurance* (+84.0%)
- **5,404** in *construction* (+62.6%)
- **4,167** in *arts, entertainment and recreation* (-30.5%)
- **3,875** in *real estate and rental and leasing* (+44.4%)
- **3,259** in *other services except public administration* (+38.0%)
- **1,832** in *agriculture, forestry, fishing and hunting* (+73.8%)
- **1,782** in *health care and social assistance* (+1,104.1%)
- **1,697** in *mining, quarrying, and oil and gas extraction* (+293.7%)
- **318** in *educational services* (-50.8%)

[21] The breakdown sums to 41 fewer jobs than the total BC employment at US MNEs because StatCan suppresses the minimal employment figures in the *utilities* and *management of companies and enterprises* sectors.

BC foreign MNE job growth at non-US firms driven by professional services and more

Non-US foreign MNEs in BC in the *professional, scientific and technical services* sector also expanded their employment contribution, accounting for the largest (+16,267 jobs) and fastest (+170.0%) increase from 2016 to 2022. Here, the next largest increase (+9,114 jobs) during the same period was in the *retail trade* sector, which increased by 108.7%, as shown in Figure 12. The next fastest increase (+135.5%) was in the *information and cultural industries* sector, which added 4,672 jobs.



Employment in the top sectors (Figure 12) grew by 87.6% to 84,043 jobs in 2022. Meanwhile, the remaining sectors saw a 15.3% increase to 33,325 jobs, split as follows:[22]

6,483 in *transportation and warehousing* (-7.6%)
5,878 in *finance and insurance* (-33.8%)
5,232 in *administrative and support, waste management and remediation services* (26.5%)
4,680 in *construction* (18.9%)
3,094 in *mining, quarrying, and oil and gas extraction* (175.8%)
2,973 in *health care and social assistance* (16,416.7%)[23]
1,214 in *other services except public administration* (-11.5%)
1,045 in *agriculture, forestry, fishing and hunting* (76.8%)
1,002 in *real estate and rental and leasing* (24.9%)
930 in *arts, entertainment and recreation* (57.6%)
794 in *educational services* (+79.2%)

See the appendix for additional breakdowns of MNE jobs by country by sector for the United Kingdom, Japan, and France.

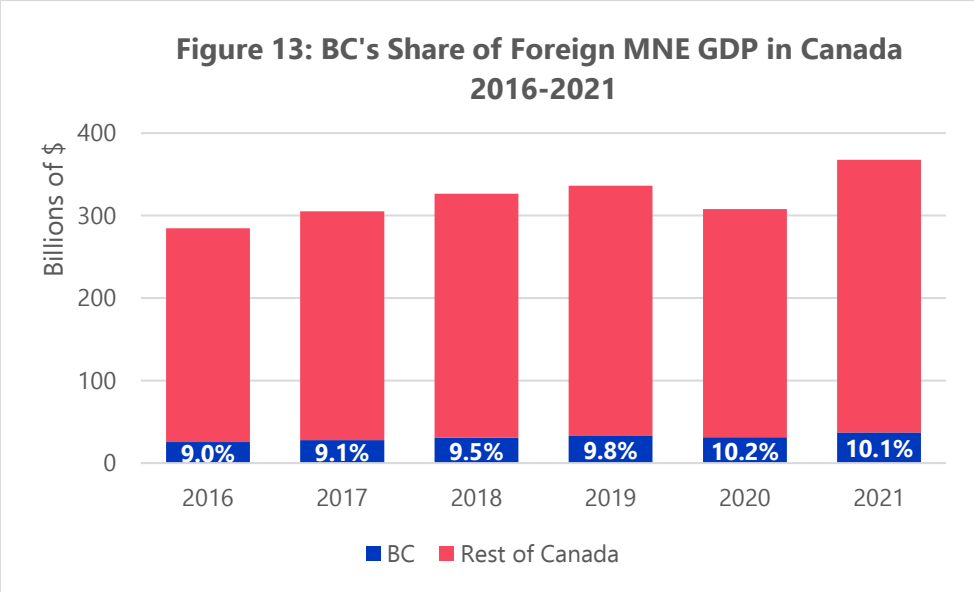
[22] The breakdown sums to 226 fewer jobs than the total BC employment at non-US MNEs because StatCan suppresses the minimal employment figures in the *utilities* and *management of companies and enterprises* sectors.
[23] In 2016, there were 18 non-US MNE jobs in BC in the sector.

Contributions to GDP from the Activities of Multinational Enterprises in BC

The most recent AMNE data available for provincial GDP contributions is from 2021, a year when the economic shock caused by the global pandemic transitioned to recovery. Despite the challenges, the overall rebound was strong. Nationally, GDP contributions from foreign multinationals increased by 19.5% in 2021 compared to 2020; in BC, the increase was 18.7%. However, the recovery was uneven. Home renovations, exercise equipment sales, biotechnology investment, and software, for example, all outperformed areas exposed to supply chain disruptions, limitations on accessing local recreation and hospitality services, and travel restrictions. Due to the unusual conditions caused by the pandemic and its immediate aftermath, year-over-year changes are emphasized less in this section to avoid drawing misleading conclusions.

The retail-heavy mix in BC lowers its share of national GDP contributions from foreign MNEs

Prior to the pandemic, BC's share of GDP from foreign MNEs in Canada was increasing, as shown in Figure 13. After the pandemic-induced decline in 2020, foreign MNE contributions to Canadian GDP rebounded to about $370 billion in 2021, with $37.1 billion (10.1%) from BC. However, BC's share of national MNE employment that year was 13.0%. This discrepancy arises because manufacturing contributes more to GDP than retail, and foreign MNE activity in the rest of Canada is more concentrated in manufacturing than it is in BC. In BC, the largest foreign MNE sectors by employment are *retail trade*; *professional, scientific and technical services*; and *manufacturing*. Nationally (including BC), they are *manufacturing; retail trade; and professional, scientific and technical services*. This highlights the unique economic landscape of BC, where the distribution of foreign MNE activities differs significantly from the rest of the country.

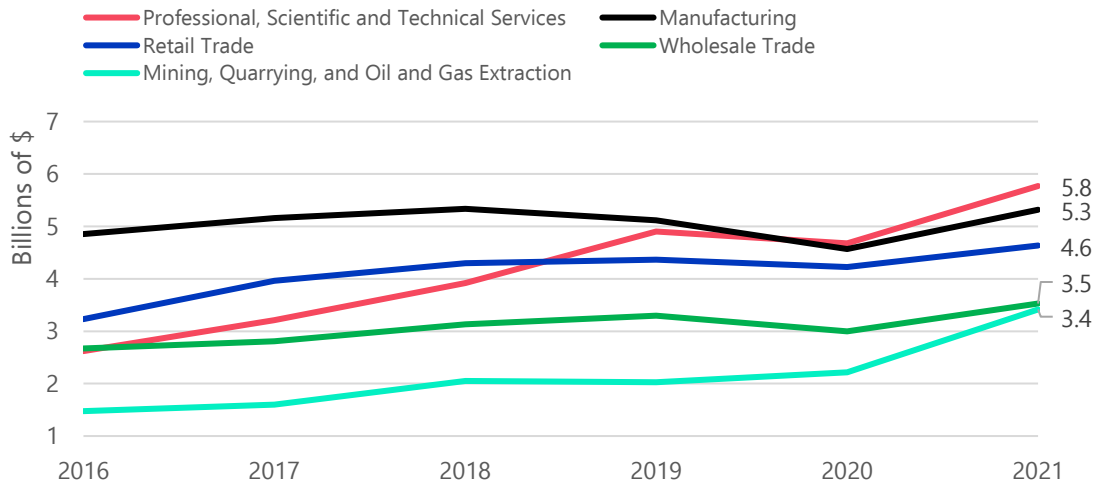


Source: StatCan. Table 36-10-0620-01 Activities of multinational enterprises in Canada, Canadian and foreign multinationals, by province, sector and industry, establishment level

Mixed growth in GDP contributions from the largest MNE sectors

In 2021, the data for contributions to GDP (value added) show a strong rebound following the pandemic-related downturn in 2020. Among foreign MNEs in BC, firms in the *professional, scientific and technical services* sector collectively contributed $5.8 billion to provincial GDP in 2021. The sector's 120.1% increase, 2016 to 2021, moved it from fourth to first as a source of foreign MNE contributions to GDP. The *mining, quarrying, and oil and gas extraction* sector had the largest percentage increase (+131.5%) and moved into the top five foreign MNE sectors, ahead of *finance and insurance*. Value added from foreign MNEs in the *manufacturing* sector grew much slower (+9.6%) but it ranked second with a $5.3 billion contribution to GDP. The *retail trade* sector slipped from second to third largest foreign MNE contributor to GDP, despite a 43.5% rise in value added to $4.64 billion. In comparison, value added by foreign MNEs in the *wholesale trade* sector rose by 32.1% to $3.5 billion.

Figure 14: Foreign MNE Contributions to BC GDP, 2016-2021, Top 5 Sectors



Source: StatCan BC AMNE dataset

Foreign MNE productivity varies significantly across sectors

The five sectors with the largest contributions to foreign MNE GDP *(professional, scientific and technical services; manufacturing; retail trade; wholesale trade;* and *mining, quarrying, and oil and gas extraction*) have significantly different shares of foreign MNE employment, as shown in Figure 15.

- The *professional, scientific and technical services* (15.5% GDP, 15.6% employment) and *wholesale trade* (9.5% of GDP, 9.3% of employment) sectors have a balanced economic impact.
- The *manufacturing* sector contributes 14.3% of foreign MNE GDP, while employing 10.5% of the foreign MNE workforce, indicating high productivity. This suggests advanced technology, automation, and capital investment boost economic output per worker.
- The *retail trade* sector employs a large share of the foreign MNE workforce (25.1%) but contributes comparatively less to GDP (12.5%), indicating its labour-intensive and low-productivity nature. Similarly, the *accommodation and food services* sector has a low GDP

contribution (2.3%) but higher employment (6.3%), reflecting its labor-intensive, low-wage structure.

- Two sectors stand out for their disproportionate GDP contributions: *finance and insurance* (8.0% of GDP, 4.4% of employment from the activities of foreign MNEs) and the highly capital-intensive *mining, quarrying, and oil and gas extraction* sector, where there are relatively few jobs (1.7% of foreign MNE employment) compared to its value added contributions (9.2% of foreign MNE GDP).
- The *information and cultural industries* sector (6.2% of GDP, 5.2% employment) shows high productivity, as does the *construction* sector, which contributes 4.5% of GDP using 2.9% of the foreign MNE workforce.
- The *transportation and warehousing* sector (7.0% GDP, 8.2% employment) shows less value-added activity per worker.
- The "All other sectors" row in Figure 15 includes seven sectors, each contributing no more than 1.2% to foreign MNE GDP contributions and 1.5% to foreign MNE employment.

Figure 15: Foreign MNE Contributions to the BC Economy in 2021 – Percentage Share by Sector

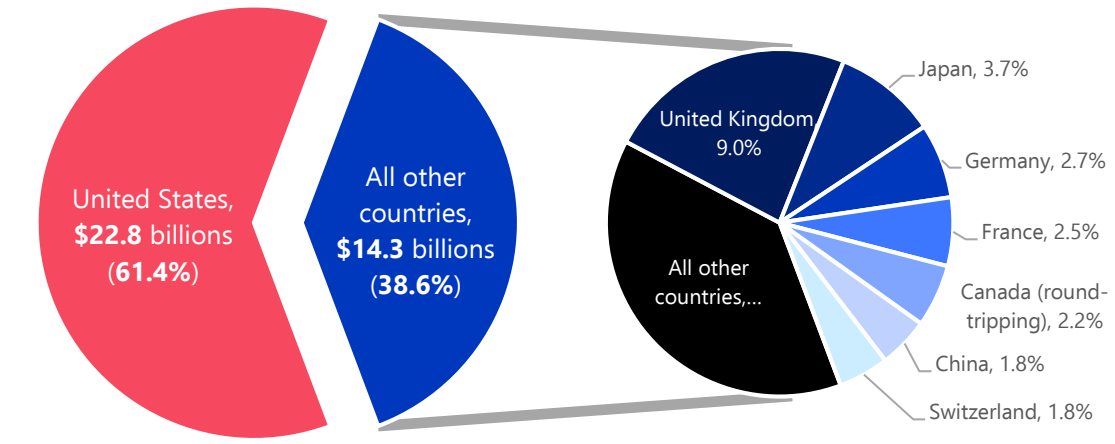
Sector	GDP %	Jobs %
Professional, scientific and technical services	15.5%	15.6%
Manufacturing	14.3%	10.5%
Retail trade	12.5%	25.1%
Wholesale trade	9.5%	9.3%
Mining, quarrying, and oil and gas extraction	9.2%	1.7%
Finance and insurance	8.0%	4.4%
Transportation and warehousing	7.0%	8.2%
Information and cultural industries	6.2%	5.2%
Construction	4.5%	2.9%
Administrative and support, waste management and remediation services	3.9%	4.1%
Real estate and rental and leasing	2.5%	1.5%
Accommodation and food services	2.3%	6.3%
All other sectors	4.6%	5.3%
Total	**100.0%**	**100.0%**

Source: StatCan BC AMNE dataset

US-owned firms are the largest source of foreign MNE contributions to GDP in BC

Foreign-owned MNEs contributed $37.1 billion to BC GDP in 2021, including $22.8 billion from US-owned firms, as shown in Figure 16.

Figure 16: Foreign MNE contributions to BC GDP by Country (2021)



Source: StatCan BC AMNE dataset

Contributions to BC GDP from non-US Foreign MNEs in 2021 ($, millions)

$3,334 United Kingdom
$1,381 Japan
$998 Germany
$915 France
$835 Canada (round-tripping)
$676 China
$672 Switzerland
$632 Sweden
$623 Netherlands
$555 Belgium
$533 Australia
$406 Indonesia
$368 Singapore
$295 Ireland
$279 Hong Kong
$223 Norway
$190 Italy
$134 Denmark
$52 Spain
All other countries: **$1,214**

Turning business intelligence into FDI attraction strategies

Canada continues to be a prime destination for FDI, as highlighted by a recent study by the Organization for Economic Co-operation and Development (OECD).[24] Over the past decade, FDI as a percentage of Canada's GDP has steadily increased, surpassing that of most other OECD countries. The study also reveals that foreign MNEs in Canada are more productive and innovative than Canadian firms. Moreover, many FDI-supported jobs are in technology- and knowledge-intensive fields, which typically offer relatively well-paid, full-time, permanent positions. Additionally, it revealed that FDI helps advance the country's sustainable development goals and generates positive spillover effects for domestic firms.

As confirmed by data presented in this report, BC has benefitted from FDI based on the employment generated by investments made by foreign MNEs. The successful attraction of FDI in BC has significantly increased its share of foreign MNE employment in Canada. The path to continued success will be challenging as other countries and regions aggressively compete for FDI and its associated benefits. This report will inform the ongoing refinement of Invest Vancouver's attraction strategy.

For example, the United States is the largest source of foreign MNE employment in BC, and the number of BC workers employed by American MNEs continues to grow. The US is one of Invest Vancouver's key markets, particularly in regions like the Cascadia Corridor and California that have deep connections to BC in high-growth industries such as the Life Sciences, Digital Media and Entertainment (notably film production, animation, visual effects, and gaming) and High-tech Services such as Software as a Service and cybersecurity.

Similarly, the *professional, scientific and technical services* sector, a key component of High-tech Services, saw the largest foreign MNE employment gains. High-tech Services is one of Invest Vancouver's key target industries as it is a regional strength and has exhibited rapid employment gains since the 2009. Promoting the region's value proposition to international firms in High-tech Services and supporting their investments in the region remains a priority.

Going forward, further refinement and deepening the findings from the report will provide the directions for future FDI attraction with specific focus on foreign MNE activity and FDI projects by **type**, **country**, and **industry classification**.

- **Type of FDI:** Analyzing the composition of the employment gains is crucial. How much is contributed by new branches, the expansion of existing operations, or the acquisition of existing Canadian firms? For instance, if employment growth is driven by expansion, what were the initial steps that led these firms to establish a presence in BC? Did they begin as small initial forays that expanded over time, or did they enter the market with a significant operation and continue to grow? Identifying these patterns should inform strategies to enhance the attraction of new foreign MNEs and support the expansion of those already established.

[24] OECD "FDI Qualities Review of Canada" (2024).

- **Country:** Understanding the motivations behind FDI growth by country can offer valuable insights. For example, firms in Nordic countries may be attracted to BC due to its focus on sustainability and the green economy. If so, this message could be leveraged to attract firms from other countries with similar values. In contrast, the rapid employment growth at Chinese-owned MNEs might be driven by personal connections and established Canadian contacts, particularly in cities like Vancouver and Toronto. Identifying these motivations within markets could help tailor investment attraction strategies to address the needs of specific countries. Leveraging funding from the federal government's CanExport program, Invest Vancouver is investigating specific markets identified in this report.

- **Industry Classification:** The *professional, scientific and technical services* sector is a significant source of foreign MNE employment growth in BC. This sector includes a wide range of services such as legal, accounting, architecture, engineering, specialized design, computer systems design, management consulting, scientific research and development, advertising, and public relations. Identifying which specific industry groups are driving this growth should be a priority for targeted investment attraction. Additionally, understanding whether the type of FDI (greenfield, acquisition, brownfield, or reinvestment/expansion) varies within these industry groups can further refine these strategies. Even within some of the slower-growing sectors, such as *manufacturing*, there may be specific subsector success stories, such as firms working on various aspects of the hydrogen value chain, that warrant further investigation. Continuing to delve into specific high potential areas will support investment attraction strategies to identify areas where the region's value proposition intersects with the location priorities of foreign MNEs.

This report provides data-driven intelligence on the downstream impact of FDI through the activities of foreign MNEs in BC and suggests pathways to more effective investment attraction strategies, which will ultimately benefit the BC economy.

Appendix

A1: Total Net FDI Flows in Canada, 2016-2023 ($ millions), ranked by 2023 value by region

Country	2016	2017	2018	2019	2020	2021	2022	2023
United States	24,744	16,397	21,227	23,853	14,546	31,770	26,291	37,133
Netherlands	6,394	(1,258)	5,914	5,820	6,412	10,564	11,066	5,572
Switzerland	12,724	(4,256)	(1,210)	8,151	(4,352)	2,924	277	4,031
Germany	491	668	610	929	802	1,719	804	3,797
Japan	1,339	1,007	863	2,236	593	(164)	(1,913)	3,586
Australia	(661)	491	2,423	7,285	(1,539)	883	5,156	1,654
Luxembourg	2,144	3,373	(392)	2,579	(4,188)	4,585	9,126	1,472
Brazil	589	1,426	1,626	1,534	1,496	1,249	1,411	1,198
Barbados	372	597	701	27	266	480	1,517	1,072
United Kingdom	(2,350)	3,757	3,731	2,997	3,678	8,350	1,835	152
Hong Kong	1,575	(273)	1,978	(805)	(1,111)	(578)	1,769	12
Mexico	(68)	249	32	(13)	174	87	57	(14)
Cayman Islands	326	229	282	3,458	456	6,858	(402)	(18)
China	7,546	2,543	3,238	1,176	83	(185)	(1,183)	(631)
France	567	792	2,276	2,043	1,368	3,463	2,456	(784)
All other countries	(7,935)	3,805	5,505	5,795	15,644	3,707	1,833	4,078
Total	47,796	29,550	48,803	67,061	34,325	75,711	60,099	62,310

Source: StatCan. Table 36-10-0473-01 Balance of international payments, flows of Canadian direct investment abroad and foreign direct investment in Canada, by selected countries (x 1,000,000). Retrieved on July 17, 2024

A2: Foreign Direct Investment ($ millions) in Canada, 2016-2023, ranked by 2023 value by region

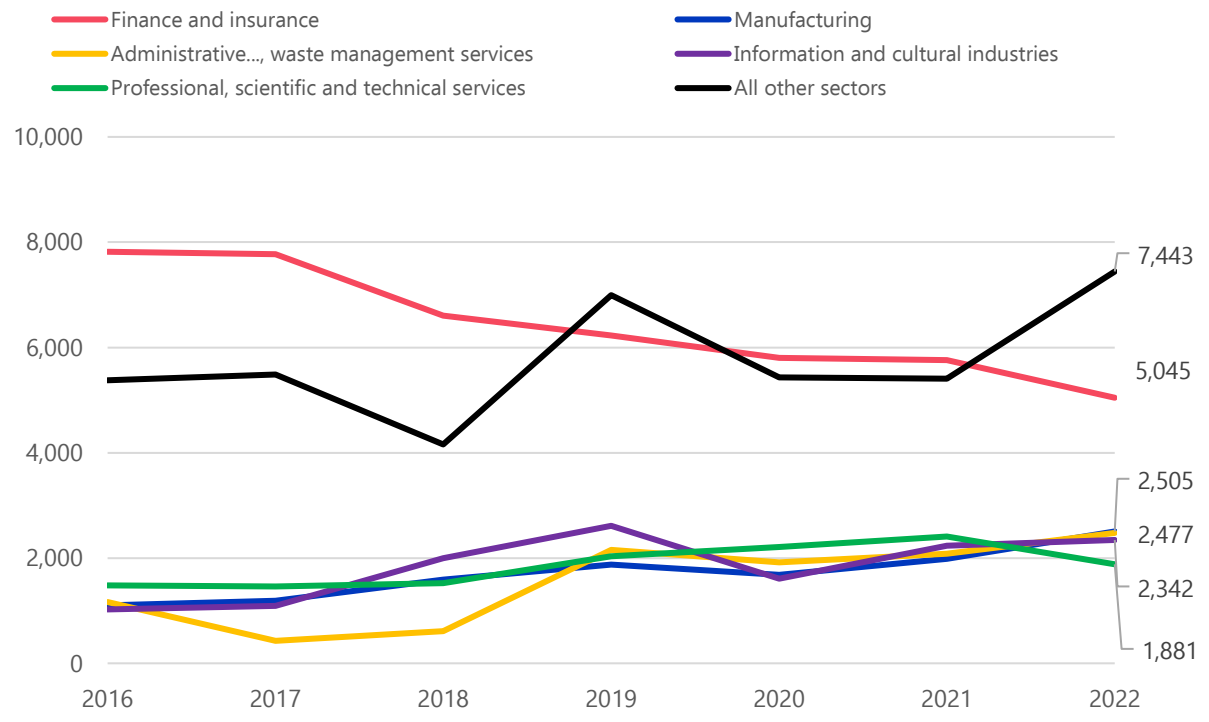
Countries or regions	2016	2017	2018	2019	2020	2021	2022	2023
United States	376,760	402,090	464,599	466,441	463,301	544,384	582,744	618,238
Netherlands	102,655	103,505	137,652	143,650	133,542	157,167	167,306	172,943
United Kingdom	46,658	41,285	61,631	77,056	86,165	93,262	100,960	106,630
Luxembourg	51,490	57,023	52,483	73,008	63,753	65,226	69,424	70,929
Unallocated countries				57,025	53,245	61,994	69,615	69,612
Japan	27,888	30,069	33,258	30,523	31,502	34,396	33,234	36,708
Switzerland	41,449	44,190	40,603	47,251	40,122	29,732	35,806	35,840
Hong Kong	14,707	20,140	24,933	35,049	28,303	29,546	32,518	32,766
Caribbean				38,046	28,642	28,543	30,961	31,472
Australia	10,304	8,997	11,799	25,938	22,874	18,762	25,611	27,221
China	15,220	15,927	21,489	25,245	20,880	25,720	25,480	24,871
Germany	15,943	16,128	16,355	21,710	21,903	24,489	21,881	24,287
Other Europe				14,740	13,459	17,381	18,390	18,414
Other Asia and Oceania				8,816	8,849	13,464	13,422	13,704
South Korea	2,079	2,510	3,498	5,765	5,972	5,965	7,856	8,178
Singapore	298	322	1,115	4,882	2,404	2,745	3,676	7,904
Sweden	2,355	2,214	1,920	5,109	4,920	5,152	6,733	7,656
United Arab Emirates	3,622	3,354	2,942	5,722	5,531	5,753	6,913	7,425
Norway	3,338	4,402	4,399	8,028	5,172	8,192	9,646	7,293
Ireland	6,216	6,780	6,457	3,937	7,075	6,320	6,058	6,262
Brazil	15,861	13,304	14,439	500	3,991	5,054	4,771	6,228
Italy	1,436	1,431	1,922	4,434	3,627	5,050	5,691	5,690
Spain	6,380	5,405	5,337	7,864	7,964	7,304	5,710	5,586
France	10,512	11,532	12,705	16,653	7,526	11,394	13,709	4,969
Mexico	2,847	2,695	2,394	2,319	2,034	2,856	2,970	3,098
Other South and Central America				2,308	1,810	2,038	2,317	2,742
India	3,251	2,723	2,920	2,618	2,545	2,297	2,180	1,617
Africa	2,415	1,854	2,484	208	212	669	874	999
Taiwan	59	174	-123	463	518	436	483	483
Chile				448	380	300	294	355
Russia	1,062	1,441	1,638	1,928	911	1,031	706	95
Malaysia	-106	235	48	169	-78	-96	-65	54
Total	764,699	799,730	928,897	1,137,853	1,079,054	1,216,526	1,307,874	1,360,269

Source: StatCan. Table 36-10-0008-01 International investment position, Canadian direct investment abroad and foreign direct investment in Canada, by country, annual (x 1,000,000). Retrieved on May 2, 2024

Figure A3: Foreign MNE Contributions to Canadian Employment by Province, 2016-2022				
Geography	2016	2022	Change 2016-2022	% change 2016-2022
Ontario	1,130,564	1,313,325	182,761	16.2%
Quebec	378,464	413,815	35,351	9.3%
British Columbia	238,571	349,028	110,457	46.3%
Alberta	308,061	285,785	-22,276	-7.2%
Manitoba	55,236	62,040	6,804	12.3%
Nova Scotia	40,587	45,667	5,080	12.5%
Saskatchewan	39,356	42,703	3,347	8.5%
New Brunswick	32,813	36,148	3,335	10.2%
Newfoundland and Labrador	22,710	18,785	-3,925	-17.3%
Prince Edward Island	4,127	5,168	1,041	25.2%
Territories	3,492	3,798	306	8.8%
Canada	**2,253,980**	**2,576,262**	**322,282**	**14.3%**

Source: StatCan BC AMNE dataset

Figure A4: UK-owned MNEs' Contribution to BC Employment by Sector, 2016-2022



Source: StatCan BC AMNE dataset

Figure A5: Japanese-owned MNEs' Contribution to BC Employment by Sector, 2016-2022							
NAICS	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Construction	136	126	77	172	181	182	312
Manufacturing	1,143	1,627	1,460	1,602	1,671	1,529	1,238
Wholesale trade	1,456	1,433	1,644	1,909	1,708	1,773	1,776
Retail trade	X	X	X	X	X	X	X
Transportation and warehousing	195	214	314	438	411	393	408
Information and cultural industries	X	X	X	X	X	X	X
Finance and insurance	X	X	61	48	X	56	58
Professional, scientific and technical services	656	734	679	683	846	1,554	1,729
Admin and support, waste management and remediation services	271	271	319	257	180	110	104
All other industries	1,596	1,643	1,535	1,854	1,343	1,436	1,844

Source: StatCan BC AMNE dataset

Figure A6: French-owned MNEs' Contribution to BC Employment by Sector, 2016-2022							
NAICS	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022p**
Construction	1,136	1,203	1,159	1,295	1,371	1,361	1,357
Manufacturing	900	921	753	931	628	743	1,112
Wholesale trade	1,603	1,531	1,814	1,686	1,498	1,355	1,930
Retail trade	X	X	X	X	X	X	X
Transportation and warehousing	970	193	273	325	345	332	347
Information and cultural industries	X	X	X	X	X	X	X
Finance and insurance	X	X	71	84	X	97	102
Professional, scientific and technical services	969	842	1,028	978	825	910	1,026
Admin and support, waste management and remediation services	73	20	28	34	49	44	50
All other industries	117	127	165	213	195	300	457

Source: StatCan BC AMNE dataset

Figure A7: Foreign MNEs' Contribution to BC Gross Fixed Capital Formation by Sector, 2016-2022 (millions of dollars)							
NAICS	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Mining, quarrying, and oil and gas extraction	2,208	1,632	2,768	1,590	1,084	947	1,278
Manufacturing	1,065	540	692	1,102	846	1,086	1,144
Professional, scientific and technical services	213	356	547	694	737	910	1,059
Transportation and warehousing	419	638	345	814	498	1,026	870
Retail trade	451	542	467	608	742	803	806
Real estate and rental and leasing	830	937	961	1,029	574	550	608
Information and cultural industries	119	56	137	253	470	356	520
Wholesale trade	134	182	196	223	237	444	241
Utilities	46	19	195	214	188	261	205
Accommodation and food services	261	136	101	130	152	148	102
Finance and insurance	47	22	244	185	130	214	93
Admin and support, waste management and remediation services	81	65	44	91	59	78	78
Agriculture, forestry, fishing and hunting	15	20	108	140	86	58	63
Construction	42	32	9	71	54	69	37
Management of companies and enterprises	8	6	..	1	27	13	12
Arts, entertainment and recreation	11	14	53	9	27	8	11
Other services (except public administration)	11	25	24	19	12	11	7
Health care and social assistance	..	..	7	5	1	3	4
Educational services	1	..	..	..	..	..	..
Total	**5,960**	**5,223**	**6,899**	**7,180**	**5,924**	**6,986**	**7,137**

Source: StatCan BC AMNE dataset

Figure A8: Foreign MNEs' Contribution to BC Gross Fixed Capital Formation by Country, 2016-2022 (millions of dollars)							
Country	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
United States	3,047	2,894	3,779	4,223	3,629	4,313	4,020
United Kingdom	736	67	485	699	711	828	794
Netherlands	1,124	1,170	1,518	802	77	106	297
Australia	57	83	83	88	135	130	207
Switzerland	97	53	141	121	124	164	174
Japan	162	190	186	227	130	200	172
Indonesia	29	38	46	54	54	174	172
China	343	15	25	76	104	160	167
Norway	1	1	93	78	75	48	119
Belgium	20	20	26	113	94	111	114
France	116	105	95	127	104	93	106
Hong Kong	18	36	93	74	121	98	90
Singapore	5	24	9	68	82	78	85
Germany	51	33	68	58	94	92	76
Sweden	23	6	12	38	32	85	70
Canada (round-tripping)	15	23	63	66	104	29	65
Denmark	4	7	9	16	15	28	35
Ireland	38	4	2	40	19	40	28
Italy	3	3	12	6	24	36	27
Spain	..	3	1	36	9	3	1
All other countries	68	449	154	170	184	167	319
Total foreign	**5,960**	**5,223**	**6,899**	**7,180**	**5,924**	**6,986**	**7,137**

Source: StatCan BC AMNE dataset

Prepared by Invest Vancouver

Lejla Uzicanin, *Vice President, Data, Research and Policy*
Gregory Freeman, *Senior Economist*
Aaron Aerts, *Senior Advisor*
Temirlan Kakimov, *Research & Data Analyst*
Ryan Carpio, *Research Coordinator*

Attachment 2

INVEST VANCOUVER
A service of metrovancouver

Impact of Foreign Direct Investment in BC

Presented by Lejla Uzicanin, Vice President, Data, Research and Policy, and Gregory Freeman, Senior Economist

Invest Vancouver Management Board Meeting, September 13 2024

69588325

Key Takeaways

1. FDI impact on BC employment is growing rapidly
2. **Professional, scientific and technical services** is the driver
3. US is largest source of MNE activity (and growing); other countries are growing faster

Invest Vancouver will leverage insights to attract more investment.

2

FOREIGN MNE EMPLOYMENT

In Canada between 2016 and 2022, BC ranked…

1st

% Change in jobs from MNEs

+46.3%

2nd

Absolute Change

+110,457 jobs from MNEs

3rd

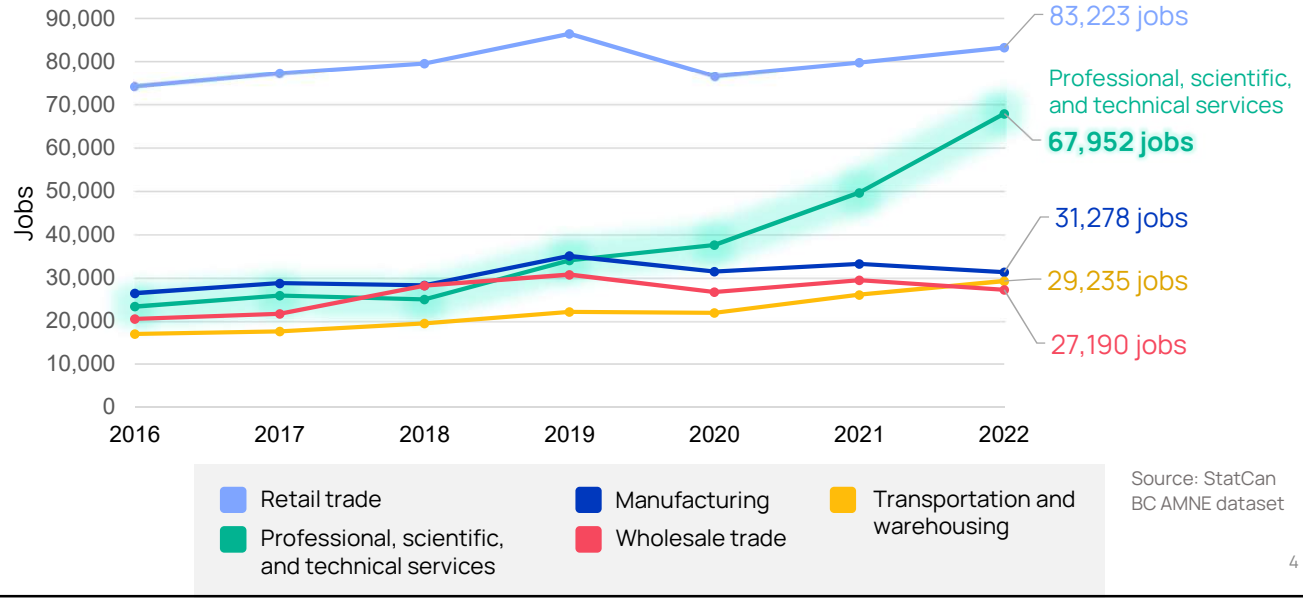
Total

349,028 jobs from MNEs

BC accounted for **one third** of the increase in jobs at MNEs in Canada

3

Professional, scientific and technical services leads growth in BC foreign MNE employment

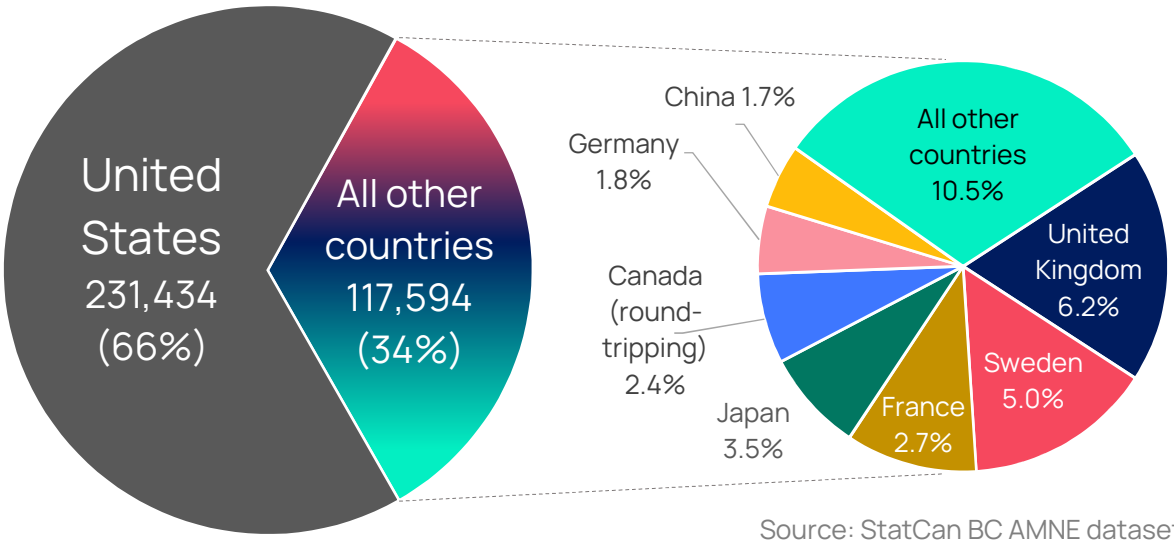


Source: StatCan BC AMNE dataset

4

The US is largest source of foreign MNE jobs in BC

Total: **349,028** jobs in 2022



Source: StatCan BC AMNE dataset

5

Rapid employment growth at foreign MNEs in BC since 2016 led by Sweden and China

Country	Jobs in 2022	% change 2016-2022
Sweden	17,299	885.7%
China	5,956	832.1%
Canada (round-tripping)	8,295	389.7%
Indonesia	2,006	110.5%
Denmark	1,653	80.5%
Singapore	1,239	74.3%
Australia	4,239	66.6%
Belgium	1,815	64.9%
United States	231,434	40.8%
Japan	12,217	38.7%
France	9,251	25.0%
United Kingdom	21,693	20.8%

Source: StatCan BC AMNE dataset

6

Top sources of contributions to BC GDP from foreign MNEs are the US (by country) and professional services (by sector)

By Country (2021)

US	61.4%
UK	9.0%
Japan	3.7%
Germany	2.7%
France	2.5%

By Sector (2021)

Professional, scientific and technical services	15.5%
Manufacturing	14.3%
Retail	12.5%
Wholesale Trade	9.5%

7

Activities of foreign MNEs tell a positive story

- Successful FDI attraction is a win for Canada and BC
- Foreign MNE growth is a reflection of strength

Findings suggest opportunities to build on

- Refine Invest Vancouver's attraction strategy based on insights
- Promising directions for further work and improvement

8

INVEST VANCOUVER

A service of metrovancouver

Opportunity, Amplified. In a region like no other.

9

To: Invest Vancouver Management Board

From: Jacquie Griffiths, President, Invest Vancouver
Nikola Fischerova, Business Development Analyst, Invest Vancouver

Date: August 19, 2024 Meeting Date: September 13, 2024

Subject: **Investment Attraction Update – Q2 2024**

RECOMMENDATION

That the MVRD Board receive for information the report dated August 19, 2024, titled "Investment Attraction Update – Q2 2024".

EXECUTIVE SUMMARY

Invest Vancouver continues to see interest from international companies looking to expand in the Metro Vancouver region. As of June 30, 2024, Invest Vancouver staff are working with 99 prospective leads. The prospective leads, including 14 new leads generated in Q2, representing $2.9 billion in potential direct investment, which equates to 2,248 local jobs facilitated.

The majority of the leads represent the Green Economy, High-tech, Digital Media & Entertainment, and Life Sciences sectors. Key markets generating significant leads include Europe (UK, Germany, France), Asia (Singapore, South Korea, Japan), and the United States. In Q2, two Digital Media & Entertainment companies expanded in the Metro Vancouver region, bringing approximately $6M in direct investment and 23 local jobs.

PURPOSE

To provide the Invest Vancouver Management Board and MVRD Board with a summary of investment attraction activities resulting from the second quarter of 2024.

BACKGROUND

This report is advanced in alignment and coordination with the approved Invest Vancouver Management Board 2024 Work Plan and the endorsed Invest Vancouver 2024 Annual Plan.

REVIEW OF Q2 2024 ACTIVITY

Invest Vancouver sees sustained interest from international businesses interested in expanding to the Metro Vancouver region. This report provides a detailed review of the strategic investment attraction activities and includes leads carried over from 2023, Q1 and Q2 of 2024.

Active Prospective Companies – Leads

An investment lead or opportunity is defined as a company that has expressed an interest in investing in the region or interested in expanding current investments beyond what is already in the region. The number of investment leads or opportunities in the pipeline is currently 99, which is a net decrease of 13 since the end of Q1 in 2024. The 99 prospective leads represent $2.9 billion in potential direct investment and 2,248 local jobs.

In Q2, Invest Vancouver added 14 new companies to the investor pipeline representing the Green Economy, High-tech, Digital Media & Entertainment, and Life Sciences sectors. These 14 companies represent $1.7 billion in potential direct investment and 196 local jobs. Many of these leads are the result of sector events and overseas markets where Invest Vancouver was most actively engaged. The following tables show the breakdown of current leads.

Table 1. Current Leads in the Investment Attraction Pipeline (Q2)

Stage	# Prospects (leads)	Potential Jobs	Potential Investment
Attraction			
Interested	51	749	$700M
Exploring	23	456	$1,756M
Facilitating	11	447	$204M
Sub-Total:	**85**	**1652**	**$2,661M**
Expansion			
Interested	3	75	$52M
Exploring	5	83	$81M
Facilitating	5	88	$25M
Sub-Total:	**13**	**246**	**$158M**
Retention			
Interested	1	350	$108M
Sub-Total:	**1**	**350**	**$108M**
Total:	**99**	**2,248**	**$2,927M**

Table 2. Breakdown of Leads by Sector and Geography (Q2)

Key Sector Representation		
High-tech	32	32%
Green Economy	23	23%
Digital Media & Ent.	13	13%
Other	12	12%
Life Sciences	9	9%
Apparel	4	4%
Agritech	4	4%
Trade & Transportation	2	2%
Total:	**99**	100%

Geographic Representation		
Europe	34	34%
Asia	22	22%
United State	19	19%
Canada	16	16%
Australia	5	5%
Other	3	3%
Total:	**99**	100%

Table 3. Breakdown of Leads by Source (Q2)

Lead Source	# Leads	Ratio
Event-based Business Dev.	40	40%
Gov't Partners (IiC, GAC/TCS, JEDI/TIR)	31	31%
Direct Inbound Enquiries	18	18%
Other Referrals (non-government)	5	5%
Other	5	5%
Total:	**99**	**100%**

Landed Companies

In Q2, two Digital Media & Entertainment companies, Tower 33 and Revolving Games, landed in the Metro Vancouver region. These two opportunities together represent $6M in direct investment and 23 local jobs.

Tower 33, a leader in post-production and visual effects (VFX), has expanded its operations to the City of Vancouver and has already 14 employees. Several key factors drove this expansion, including access to a large pool of VFX skilled workers, competitive tax incentives, and the region's strong reputation as a key hub for global VFX innovation. Invest Vancouver worked closely with the BC Ministry of Jobs, Economic Development, and Innovation to secure this opportunity.

Revolving Games, established in San Francisco in 2019, is an AAA mobile gaming studio founded by industry veterans with a track record of multiple successes. This global company with a footprint spanning across 9 locations has chosen Metro Vancouver for its latest expansion. Their decision to expand to the Metro Vancouver region was mainly due to the region's competitive advantages including access to skilled talent, favorable time zone, and geographical proximity to San Francisco. Revolving Games has already hired 9 employees from the region (Table 4).

Table 4. Closed Opportunities - Landed (Q2)

Company Name	# New Jobs	Total Investment	Member Jurisdiction
Tower 33	14	$3.7M	City of Vancouver
Revolving Games	9	$2.3M	City of Vancouver
YTD Total	**23**	**$6M**	

Lost Opportunities

In Q2, staff determined that 26 opportunities were no longer considered viable leads. Ten companies were unresponsive and therefore ceased to remain as prospects in the pipeline, resulting as 'abandoned' opportunities. Nine companies decided not to proceed with international expansion due to various reasons, including difficulties in securing investment, economic uncertainty, a global slowdown in production, or the prioritization of different projects. Four companies chose to locate in competing jurisdictions in Seattle, Kamloops, and Montreal. Finally, two companies could not secure industrial land of the required size, and one company found the office lease rates prohibitively expensive, making it financially unfeasible to proceed with the planned expansion (Table 5).

Table 5. Closed Opportunities - Lost (Q2)

Reason for Loss	# Leads	Ratio
Abandoned	10	38%
Decision Not to Proceed	9	35%
Lost to a Competitor	4	15%
Needs Not Met	3	12%
Total:	**26**	**100%**

Event-based Business Development

Invest Vancouver was actively promoting the Metro Vancouver region at six trade events and one roadshow in Q2. Out of the seven outbound missions, five focused on international markets including Germany, the Netherlands, the United Kingdom, the United States, and Mexico, and two were conducted within Canada. These engagements facilitated interactions with 40 prospective companies. Staff is diligently qualifying these leads to identify those with the strongest potential for international expansion and investment in the Metro Vancouver region. Table 6 shows the outbound mission breakdown.

Table 6. Outbound Mission Breakdown (Q2)

Outbound Mission	Market	Sector	# Engaged Prospective Companies
Hannover Messe	Germany	High-tech	10
Canadian Hydrogen Convention	Canada	Green Economy	0
World Hydrogen Summit	Netherland	Green Economy	7
BIO International Convention	USA	Life Sciences	8
GAC Spring Roadshow - Mexico	Mexico	A mix of sectors (Advanced Manufacturing, High-tech, Life Sciences, Apparel)	5
London Tech Week & AI Summit	United Kingdom	High-tech	7
Collision	Canada	High-tech	3
		Total:	**40**

Finally, Invest Vancouver had the opportunity to strengthen its relationship with local hydrogen and fuel cell companies during the Hy-Fcell Expo & Conference hosted in Vancouver. Invest Vancouver staff led two technical bus tours that were attended by 100 local and international sector experts. During the tours, attendees visited six local hydrogen and fuel cell companies and two university projects (Hydrogen Hub at SFU and Smart Hydrogen Energy District (SHED) at UBC).

Inbound Delegations and Executive Familiarization Tours

In Q2, Invest Vancouver hosted three international delegations and fourteen executive familiarization tours compared to just two in Q1. The Invest Vancouver team welcomed delegations from Poland, Australia, and Germany. The executive familiarization tours play a critical role in a company's location decision-making (Table 7).

Table 7. Executive Familiarization Tour *Breakdown (Q2)*

Country	# Visit	Sector
Singapore	3	2x Digital Media & Ent., 1x Life Sciences
Australia	2	High-tech
Norway	2	High-tech
Austria	1	Green Economy

Canada (Quebec)	1	Digital Media & Ent.
Germany	1	Green Economy
India	1	High-tech
Latvia	1	Green Economy
UK	1	High-tech
USA	1	Green Economy
Total:	**14**	

ALTERNATIVES

This is an information report. No alternatives are provided.

FINANCIAL IMPLICATIONS

All activities associated with investment attraction efforts are expended through the Board-approved Invest Vancouver 2024 budget.

CONCLUSION

Invest Vancouver's efforts to promote the Metro Vancouver region as the destination of choice for international investment have yielded promising results, with 99 prospective leads representing $2.9 billion in potential foreign direct investment and 2,248 local jobs. The expansion of Digital Media & Entertainment companies in Q2 highlights the region's growing appeal as a hub for innovation and talent. Invest Vancouver staff remain committed to showcasing the region's competitive advantages, attracting strategic investments, and cultivating promising leads to drive economic growth and facilitate the creation of high-quality jobs for all residents of the region.

70285811

To: Invest Vancouver Management Board

From: Sue Mah, Vice President, Collaboration, Invest Vancouver
Rosemary Preckel, Project Coordinator, Invest Vancouver

Date: August 14, 2024 Meeting Date: September 13, 2024

Subject: **Economic Reconciliation Update**

RECOMMENDATION

That the MVRD Board receive for information the report dated August 14, 2024, titled "Economic Reconciliation Update".

EXECUTIVE SUMMARY

As part of economic reconciliation, Metro Vancouver, through Invest Vancouver, has engaged in a number of collaborative activities and initiatives intended to support economic equity, prosperity, and well-being for Indigenous communities. Activities and initiatives include co-hosting the *Taking Steps in BC* event, participating on an advisory committee for the First Nations Technology Council to provide advice for advancing digital skills training and career development services for future Indigenous leaders in technology, and sponsoring a number of initiatives and events that highlight Indigenous business success stories and partnership opportunities to advance Indigenous-led prosperity and inclusive growth in the region.

PURPOSE

To provide the Invest Vancouver Management Board and MVRD Board an update on activities and initiatives to foster strategic partnerships and collaborations to support Indigenous economic reconciliation.

BACKGROUND

Economic reconciliation is a key initiative identified in the Invest Vancouver *2024 Annual Plan* and the *2022 – 2026 Board Strategic Plan*. At its July 2023 meeting, the Invest Vancouver Management Board and MVRD Board approved the following working definition of "economic reconciliation":

> *Economic reconciliation is a path to redress Canada's economic marginalization of Indigenous Peoples by pursuing economic partnerships and opportunities based on shared values. The process aims to contribute to the economic equity, prosperity, and well-being of Indigenous communities.*

One of Invest Vancouver's goals is to support First Nations in developing economic systems and realizing economic benefits for their communities. Staff developed an engagement approach based on building relationships and advancing partnership opportunities for Indigenous prosperity. The approach is complemented by Invest Vancouver's partnership and sponsorship program to advance economic reconciliation efforts. This report outlines the initiatives Invest Vancouver has undertaken in 2024 to advance economic reconciliation.

TAKING STEPS IN BC EVENT

On March 21, 2024, Invest Vancouver co-hosted the *Taking Steps in BC* event in partnership with Impact United, Real Estate Foundation of BC, Innovate BC, and InBC Investment Corp (InBC). The event provided a day of learning, sharing, and relationship building with Indigenous entrepreneurs, business owners, intermediaries, financial advisors, fund managers, and others. The objectives of the event were to educate investors and investees on values held by Indigenous entrepreneurs, and to build relationships between capital providers and seekers. Bringing forth the call to action from Impact United's report titled "Taking Steps in BC: Addressing Capital Needs for Indigenous-led Enterprises", the premise of the event was to build relationships and to connect those interested in working together to help Indigenous-led enterprises attract more investment capital (Reference 1).

The event was held at Metro Vancouver's offices, attracted 56 attendees and showcased a program that included a panel discussion that shared perspectives on the Taking Steps report, storytelling that profiled Indigenous enterprises, networking opportunities, and break-out sessions on the Indigenous impact of investing as well as the perspectives on economic sustainability (Reference 2). The event was well received and generated the following testimonials on social media and comments received from a circulated post-event survey:

"Hearing from Indigenous entrepreneurs and founders was inspirational and having [the] opportunity to connect with others in the Indigenous investment space was very beneficial."

"[I] have already connected with people [I] met at the event to explore investment opportunities that can benefit Indigenous communities."

"It all starts somewhere. We have to be the change we want to see in the world. Thank you for taking these steps. Through good faith, let us continue this process and increase Indigenous representation and success in the Canadian and global economy."

A number of respondents also indicated that they saw value in the continuation of dialogue to learn the successes from Indigenous entrepreneurs and to explore new approaches and initiatives that would help unlock more capital for Indigenous-led enterprises. Due to this demand, InBC supports an online LinkedIn group that provides an active space to foster relationships between Indigenous entrepreneurs, investors, and advocates. The goals for the *Taking Steps in BC* initiative included:

- Moving the conversation into action and maintaining its priority;
- Building relationships to increase understanding, shift perspectives, and inspire new tools and resources to advance access to private equity for Indigenous entrepreneurs;
- Sharing specific examples and case studies of support for Indigenous-led enterprises; and
- Co-developing tangible steps forward for 2025 that are inclusive aim to support Indigenous entrepreneurs.

FIRST NATIONS TECHNOLOGY COUNCIL

The First Nations Technology Council is an Indigenous-led non-profit mandated by First Nations leadership in British Columbia. First Nations Technology Council requested Invest Vancouver's support for the Digital Skills Bursary Fund and for the Indigenous Innovator blog series. The

partnership provides an opportunity for Invest Vancouver to advance economic reconciliation in the region and engage with key leaders, both emerging and established, in First Nations' communities.

The Digital Skills Bursary Fund increases access to tech and career-ready courses at First Nations Technology Council in order to provide Indigenous Peoples greater access to skill development opportunities in key areas of workforce development to build a strong and more resilient economy in the region. First Nations Technology Council delivers online and in-person courses for Indigenous Peoples ages 18+ living in BC. The funds contributed by Invest Vancouver are being used to advance wrap-around supports related to participation in First Nations Technology Council programming and to reduce costs enabling greater participation in First Nations Technology Council programming.

The Indigenous Innovator spotlights are a new online blog series where First Nations Technology Council alumni tell their stories on how digital skills have made a positive impact in their lives and communities. These stories help to publicize the opportunities available to Indigenous innovators through the services provided by First Nations Technology Council, with the goal of ultimately increasing program enrollment. The funds contributed by Invest Vancouver support the advancement of a minimum of 10 success stories, two of which have been published to date (Reference 4).

In addition, Invest Vancouver participates in First Nations Technology Council's advisory committee to provide strategic direction and oversight for the development of an implementation strategy for advancing digital skills training and career development services for future Indigenous leaders in technology. The advisory committee meets four times between June 2024 to December 2025. The meetings aim to refine a strategy that addresses priority issues in digital skills and career pathway development, systemic inequalities, and barriers to access for Indigenous representation in BC's technology sector, and advances sustainable participation in the province's digital economy.

OTHER COLLABORTIVE INITIATIVES

Invest Vancouver continues to highlight Indigenous business success stories to support economic reconciliation through its sponsorship and partnership program. Invest Vancouver sponsored the Indigenous Partnerships Success Showcase and the Indigenous Opportunities Forum.

2024 Indigenous Partnerships Success Showcase Event

The Indigenous Partnerships Success Showcase event commenced on June 5-6, 2024 and is dedicated to amplifying Indigenous voices and fostering collaborative partnerships between Indigenous communities and diverse industry sectors. The event aimed to break-down silos and engage a wide audience, from business leaders to government officials in the journey towards economic reconciliation. Through a robust agenda of panel discussions, keynotes, and cultural presentations, IPSS showcased successful models of Indigenous partnerships and inspired actionable strategies for equitable economic development. Invest Vancouver's sponsorship was used to support the facilitation of key Indigenous leaders and speakers, and subsidize attendance for Indigenous entrepreneurs and students to reinforce commitment to inclusive participation and capacity building within the Indigenous economic community.

Indigenous Opportunities Forum
The Greater Vancouver Board of Trade's Indigenous Opportunities Forum is scheduled for September 26, 2024 and will bring together local First Nations and the region's business and economic development leaders to connect, discuss, and learn about projects, partnerships, and opportunities for shared growth in the region. Invest Vancouver's contributions will be used for program development and site logistics.

ALTERNATIVES
This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS
All activities associated with economic reconciliation have been expended through Invest Vancouver's Board approved 2024 budget.

CONCLUSION
Invest Vancouver strives to promote economic reconciliation through partnership building with the intention of identifying shared vision and values to pursue economic opportunities for Indigenous prosperity. With strategic partnerships and collaborations, Invest Vancouver has hosted the successful *Taking Steps in BC* event, participated in the First Nations Technology Council's strategic planning to develop an implementation strategy for advancing digital skills training and career development services for future Indigenous leaders in technology, and sponsored events that highlight Indigenous business success stories to generate economic equity, prosperity, and well-being of Indigenous communities.

REFERENCES:
1. Taking Steps: Addressing Capital Needs for Indigenous-led Enterprises
2. Taking Steps in BC Event website
3. First Nations Technology Council's website
4. Indigenous Innovator Series
5. Indigenous Partnerships Success Showcase 2024 Conference Agenda
6. Indigenous Opportunities Forum 2024

63985570

To: MVRD Board of Directors

From: Dorothy Shermer, Corporate Officer

Date: September 11, 2024 Meeting Date: September 27, 2024

Subject: **2025 Schedule of Board Meetings**

RECOMMENDATION

That the MVRD Board receive for information the schedule of board meetings, as follows:

a) Regular Meeting Dates
- Friday, January 31, 2025
- Friday, February 28, 2025
- Friday, March 28, 2025
- Friday, April 25, 2025
- Friday, May 23, 2025
- Friday, June 27, 2025
- Friday, July 25, 2025
- Friday, October 3, 2025
- Friday, October 31, 2025
- Friday, November 28, 2025
- Friday, December 12, 2025

b) Special Meeting Dates
- Wednesday, April 9, 2025
- Wednesday, October 22, 2025

c) Time
All regular meetings are scheduled for 9:00 am, unless otherwise specified on the meeting notice.

d) Place
All regular meetings will take place in the Metro Vancouver Boardroom on the 28th Floor, 4515 Central Boulevard, Burnaby, BC and may include the simultaneous use of electronic facilities.

EXECUTIVE SUMMARY

The 2025 schedule of board meetings has been prepared in accordance with the provisions of the *Procedure Bylaw*. The schedule includes the date, time, and place for thirteen (13) board meetings, mostly to be held on Fridays at the end of most months which will avoid conflicts with the standing committee schedule, municipal council meetings, and other conflicting events. Additional special board meetings may be scheduled if required. Meetings on the 2025 Schedule of Meetings will be conducted as in-person meetings or hybrid electronic meetings.

PURPOSE

To provide the Board with its 2025 schedule of regular board meetings.

BACKGROUND

The Board *Procedure Bylaw* requires the Corporate Officer to provide the Board with an annual schedule of regular board meetings for the upcoming year, including the date, time, and place of the meetings. This report brings forward the schedule of regular and anticipated special board meetings for 2025.

As the GVSDD, GVWD, and MVHC Boards operate in accordance with the MVRD Board *Procedure Bylaw*, the meeting schedule also applies to those entities, whose meeting together usually comprises a sitting of the Boards.

BOARD MEETING SCHEDULE

To accommodate the business of the Board, eleven (11) regular business meetings have been scheduled on a Friday at the end of most months (with the exception of August where there are no board meetings scheduled). Scheduling the board meetings on Friday avoids meeting conflicts with municipal council meetings, and holding such meetings at the end of the month accommodates standing committee meetings which are generally scheduled during the first two weeks of the month.

In addition, the schedule includes two (2) additional special meetings, anticipated to be called, to consider items related to the budget (Wednesday, April 9, 2025 and Wednesday, October 22, 2025). In accordance with the *Local Government Act*, the November 28, 2025 meeting will be the inaugural meeting of the term.

Furthermore, the meeting schedule avoids conflicts with statutory holidays, conferences, and conventions for elected officials (FCM, UBCM and LMLGA), and accommodates other regional events and meetings where possible. For 2025, the September meeting will be held in the first week of October due to the UBCM Annual Conference being held one week later than usual.

In addition to the meetings on this schedule, special board meetings may be called.

Meeting Place

All meetings on this schedule will take place in the Metro Vancouver Boardroom on the 28th Floor, 4515 Central Boulevard, Burnaby, BC and may include the simultaneous use of electronic facilities to facilitate electronic participation by members.

Public Notice

For the purposes of public notice, the 2025 schedule will be made available on the Metro Vancouver website and on the public notice board.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

Board meeting expenses and remuneration have been allocated in the annual budget.

CONCLUSION

Pursuant to the Board *Procedure Bylaw*, an annual schedule of regular board meetings for 2025 has been prepared. The schedule establishes regular meetings on a monthly basis, usually on Fridays, in order to support the Boards' business, and accommodate committee meetings and other events. Notwithstanding the regular schedule, additional special meetings may be scheduled if needed. All meetings on this schedule will take place in the Metro Vancouver Boardroom and may include the simultaneous use of electronic facilities.

69941607

To: Regional Planning Committee

From: Mikayla Tinsley, Senior Policy and Planning Analyst,
Regional Planning and Housing Services

Date: August 19, 2024 Meeting Date: September 6, 2024

Subject: **Metro 2050 Type 3 Amendment – Regional Affordable Rental Housing Target Implementation Guideline**

RECOMMENDATION

That the MVRD Board:

a) initiate the *Metro 2050* amendment process for the *Metro 2050* Type 3 amendment to align *Metro 2050* and the Regional Affordable Rental Housing Target Implementation Guideline;
b) give first, second, and third readings to "Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1398, 2024"; and
c) direct staff to notify affected local governments as per section 6.4.2 of *Metro 2050*.

EXECUTIVE SUMMARY

Metro Vancouver is developing and updating a suite of implementation guidelines to support the implementation of *Metro 2050*. An implementation guideline for the Regional Affordable Rental Housing Target was endorsed by the MVRD Board at its July 26, 2024 meeting. It defines and communicates the methodology that Metro Vancouver will use to monitor progress toward the regional affordable rental housing target described in *Metro 2050*.

In developing the methodology for the target, staff recommended that Major Transit Growth Corridors (MTCGs) be included in the transit-oriented geographies being monitored in addition to Urban Centres and Frequent Transit Development Areas (FTDAs). Adding MTGCs addresses challenges with data suppression and allows for newly completed affordable rental housing units added within a contiguous geography that is well-serviced by public transit to be monitored.

To ensure consistency between the endorsed Regional Affordable Rental Housing Target Implementation Guideline and *Metro 2050*, an amendment to *Metro 2050* is required to add MTGCs to the wording in three areas pertaining to the regional affordable rental housing target. The proposed revisions are administrative, and do not alter the policy intent of *Metro 2050*, which is to increase affordable rental housing in regionally significant, transit-oriented geographies. The proposed amendment is comprised of the following:

- Update the wording under Goal 4 Policies 4.2.3 and 4.2.7 a) to include Major Transit Growth Corridors; and,
- Update the wording under Section G Performance Monitoring to include Major Transit Growth Corridors for the affordable rental housing target.

This *Metro 2050* Type 3 amendment requires adoption through an amendment bylaw passed by an affirmative 50% + 1 weighted vote of the MVRD Board.

PURPOSE

To provide the Regional Planning Committee and MVRD Board with the opportunity to initiate the amendment process for *Metro 2050* to align with the endorsed methodology of the Regional Affordable Rental Housing Target Implementation Guideline through a *Metro 2050* Type 3 amendment.

BACKGROUND

At its July 26, 2024 meeting, the MVRD Board received a report titled "Metro 2050 Implementation Guideline – Regional Affordable Rental Housing Target", outlining the proposed methodology for the Regional Affordable Rental Housing Target described in *Metro 2050* Policies 4.2.3 and 4.2.7 a), and endorsed the associated *Metro 2050* Implementation Guideline (Reference 1). The report identified minor wording changes that would be required to *Metro 2050* to implement the methodology, and that a Type 3 amendment to implement those wording changes would be put forward for MVRD Board consideration at a future meeting.

PROPOSED METRO 2050 AMENDMENT

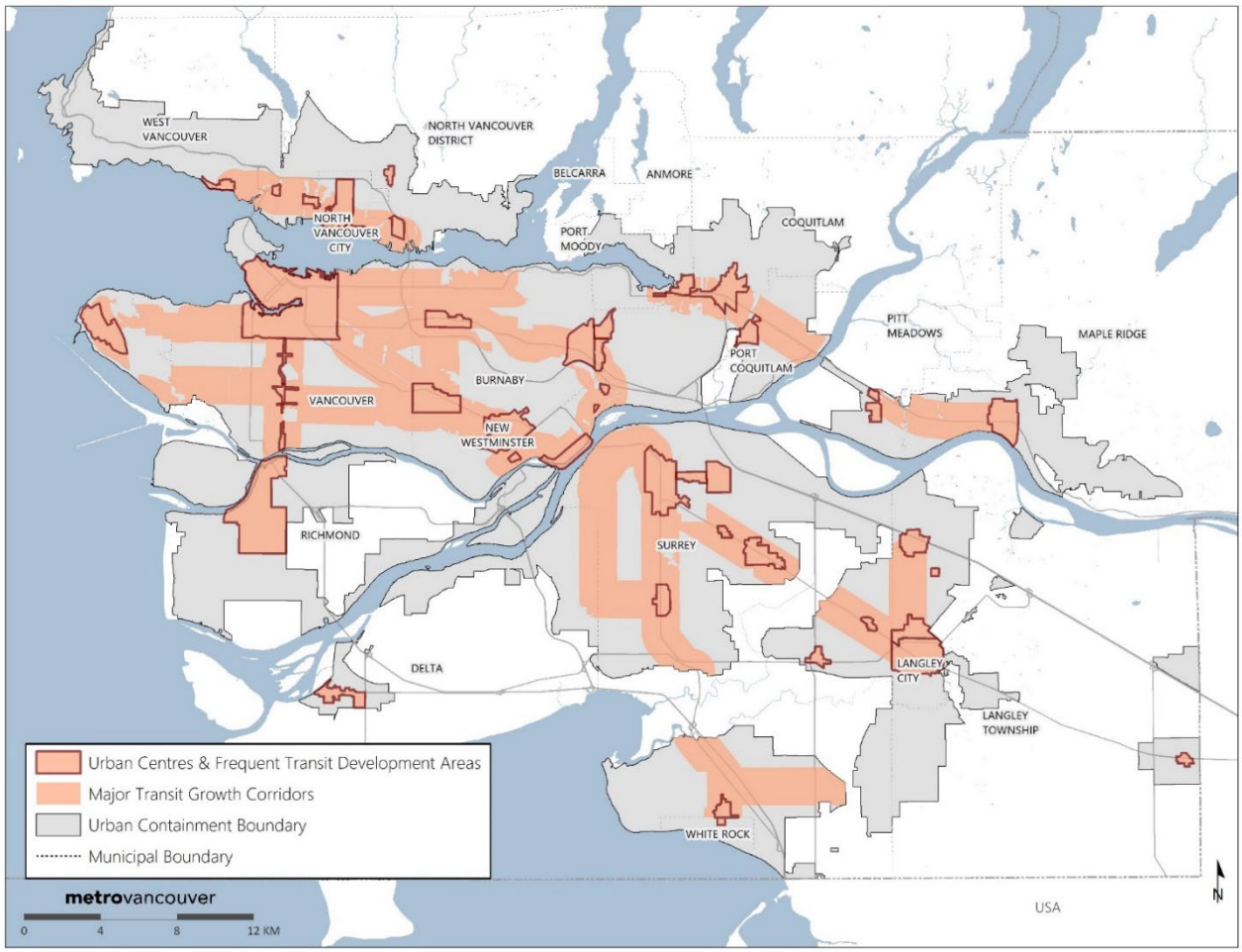
The regional affordable rental housing target in *Metro 2050* was designed to reflect the importance of affordable housing in regionally-significant areas that are well-served by public transportation, and therefore focused on monitoring target progress in Urban Centres and FTDAs. However, when developing the methodology for monitoring the regional affordable rental housing target, staff determined that the transit-oriented geographies included in the monitoring should be expanded to also include MTGCs. Adding MTGCs addresses challenges with data suppression, and allows for newly completed affordable rental housing units added within a contiguous geography that is well-serviced by public transit to be measured under the target. Additionally, it will make achieving target more feasible and meaningful, because it allows for more potential sites to locate affordable housing due to the expanded geography that now includes shoulder areas that may have more moderate land prices, but are still well-served by transit. These changes are consistent with original intent of the affordable housing target identified in *Metro 2050* and will provide a more relevant geography to measure the regions progress for its affordable housing target. These geographies are combined and shown in Map 1 below.

To align the Regional Affordable Rental Housing Target Implementation Guideline and *Metro 2050*, an amendment to *Metro 2050* is required to change the wording in three sections pertaining to the regional affordable rental housing target to reflect the inclusion of MTGCs in the geography. *Metro 2050* Policy 6.3.4 i) states "housekeeping amendments to figures, tables or maps, performance measures or any other items related to document structure that do not alter the intent of the regional growth strategy" or "all other amendments not identified in sections 6.3.1 or 6.3.3" are considered Type 3 amendments. Type 3 amendments require adoption through an amendment bylaw passed by an affirmative 50% + 1 weighted vote of the MVRD Board.

The proposed revisions do not alter the intent of *Metro 2050*. The intent of the policy is to measure the growth of affordable rental housing units in transit-oriented geographies. Urban Centres and FTDAs were selected as they are regionally-significant areas defined in *Metro 2050* that are generally well-serviced by transit. Adding MTGCs creates a contiguous geography, and still meets

the intent of the adopted policy, while increasing opportunities for member jurisdictions to contribute to the target.

Map 1: Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors



The proposed amendments include the following text amendments:

- Update the wording under Goal 4 Policies 4.2.3 and 4.2.7 a) to include Major Transit Growth Corridors; and,
- Update the wording under Section G Performance Monitoring to include Major Transit Growth Corridors for the affordable rental housing target.

METRO 2050 AMENDMENT PROCESS AND NEXT STEPS

If the amendment is initiated and the associated bylaw receives 1st, 2nd, and 3rd readings, it will then be referred to affected local governments, local First Nations, the Ministry of Transportation, and Translink, as well as posted on the Metro Vancouver website for a minimum of 45 days to provide an opportunity for comment. *Metro 2050* identifies additional public engagement opportunities that may be used at the discretion of the MVRD Board including: appearing as a delegation to the Regional Planning Committee or the MVRD Board when the amendment is being

considered. All comments received will be summarized and included in a report advancing the bylaw to the MVRD Board for consideration of final adoption.

ALTERNATIVES

1. That the MVRD Board:
   a) initiate the *Metro 2050* amendment process for the *Metro 2050* Type 3 amendment to align *Metro 2050* and the Regional Affordable Rental Housing Target Implementation Guideline;
   b) give first, second, and third readings to "Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1398, 2024"; and
   c) direct staff to notify affected local governments as per section 6.4.2 of *Metro 2050*.

2. That the MVRD Board receive for information the report dated August 19, 2024, titled "*Metro 2050* Type 3 Amendment – Wording Change for Regional Affordable Rental Housing Target Implementation Guideline".

FINANCIAL IMPLICATIONS

There are no financial implications associated with this report. All work to develop implementation guidelines is within the Regional Planning work program and was considered as part of the 2023 and 2024 Board-approved budgets.

CONCLUSION

The Regional Affordable Rental Housing Target Implementation Guideline was created to support the interpretation and implementation of *Metro 2050* goals, strategies and actions. The new Implementation Guideline was endorsed by the MVRD Board at its July 26, 2024 meeting. The methodology outlined in the Regional Affordable Rental Housing Target Implementation Guideline expands the geographies mentioned for the target in *Metro 2050*, to include MTCGs, in addition to Urban Centres and FTDAs. Adjusting the target to include MTGCs allows additional areas that are well-served by transit to be monitored under the target, and solves challenges posed by data suppression. Staff are bringing forward a *Metro 2050* Type 3 amendment to adjust the target wording in *Metro 2050* to include MTGCs to ensure consistency between *Metro 2050* and the methodology of the recently adopted Implementation Guideline.

ATTACHMENTS

1. Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1398
2. Presentation re: Metro 2050 Type 3 Amendment – Regional Affordable Rental Housing Target Implementation Guideline

REFERENCES

1. Regional Affordable Rental Housing Target Implementation Guideline

68596313

METRO VANCOUVER REGIONAL DISTRICT
BYLAW NO. 1398, 2024
A bylaw to amend "Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022"

WHEREAS:

A. The Metro Vancouver Regional District Board (the "Board") adopted "Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022" on February 24, 2023; and

B. The Board wishes to amend "Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022".

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 Amendment Bylaw No. 1398, 2024".

Amendment of Bylaw

2. "Metro Vancouver Regional District Regional Growth Strategy Bylaw No. 1339, 2022" is amended as follows:

   (a) In section "E. Goals, Strategies, & Actions", under the heading "Goal 4: Provide Diverse and Affordable Housing Choices", under policy "4.2.3", the words "Urban Centres and Frequent Transit Development Areas" are deleted and replaced with the "Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors";

   (b) In section "E. Goals, Strategies, & Actions", under the heading "Goal 4: Provide Diverse and Affordable Housing Choices", under policy "4.2.7 a)", the words "Urban Centres and Frequent Transit Development Areas" are deleted and replaced with the "Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors"; and

   (c) In section "G. Performance Monitoring", under the heading "Goal 4: Provide Diverse and Affordable Housing Choices", the words "Urban Centres and Frequent Transit Development Areas" are deleted and replaced with the "Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors".

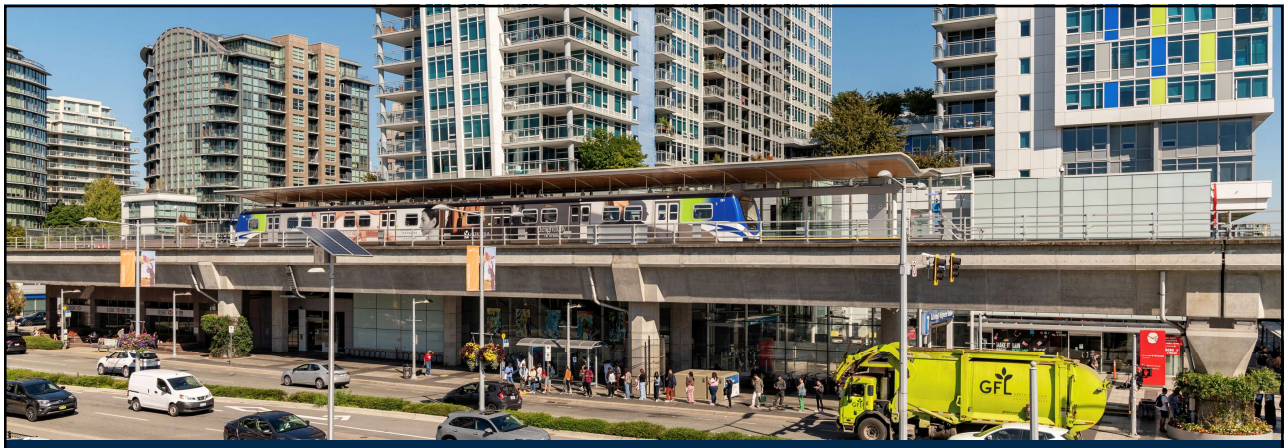
Read a first, second, and third time this _____ day of _____, _____.

Adopted this _____ day of _____, _____.

_____
Mike Hurley, Chair

_____
Dorothy Shermer, Corporate Officer

Attachment 2



Metro 2050 Type 3 Amendment

REGIONAL AFFORDABLE RENTAL HOUSING TARGET

Mikayla Tinsley
Senior Policy and Planning Analyst

Presentation to Regional Planning Committee – September 6, 2024

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REGIONAL AFFORDABLE RENTAL HOUSING TARGET IMPLEMENTATION GUIDELINE

- Defines and communicates the methodology for the regional affordable rental housing target in 4.2.3 and 4.2.7 a) of *Metro 2050*
- Endorsed by MVRD Board on July 26, 2024

METRO 2050 POLICY LANGUAGE

Strategy 4.2 Protect tenants and expand, retain, and renew rental housing supply

Metro Vancouver will:

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.

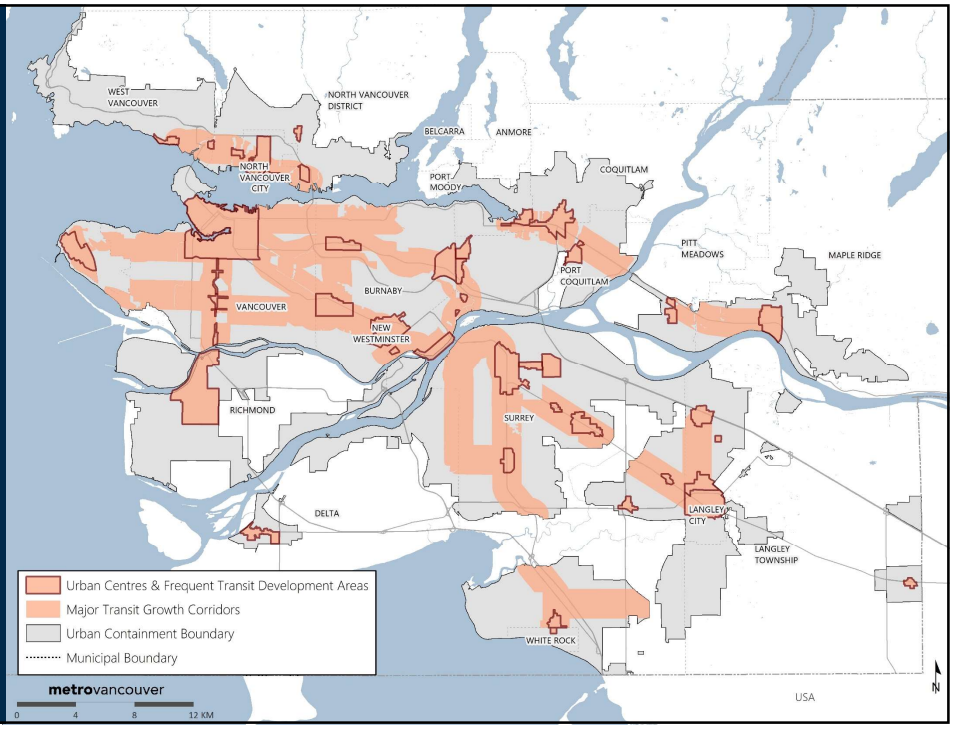
Member jurisdictions will:

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);

Adding Major Transit Growth Corridors

- Regionally-significant, transit-oriented geography
- Creates contiguous geography
- Eliminates data suppression issues
- Makes achieving target more feasible



METRO 2050 TYPE 3 AMENDMENT

Current	Proposed
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.	4.2.3 Set a regional target that at least 15% of newly completed housing units built within all Urban Centres, Frequent Transit Development Areas, and Major Transit Growth Corridors combined, by the year 2050, be affordable rental housing units.

Changes are required for:

- Goal 4 Policies 4.2.3 and 4.2.7 a)
- Section G Performance Monitoring

RECOMMENDATION

That the MVRD Board:

a) initiate the Metro 2050 amendment process for the Metro 2050 Type 3 amendment to align Metro 2050 and the Regional Affordable Rental Housing Target Implementation Guideline;

b) Give first, second, and third readings to "Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1398, 2024"; and

c) Direct staff to notify affected local governments as per section 6.4.2 of *Metro 2050*.

Thank You!

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7

COMMITTEE INFORMATION ITEMS AND DELEGATION SUMMARIES

Metro Vancouver Regional District
Board Meeting Date – Friday, September 27, 2024

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 – September 6, 2024

Delegations:

C1 Tasha Murray, Consultant, Invasive Species Council of Metro Vancouver
Melinda Yong, Environmental Planner, City of Burnaby
Adrian Avendaño, Executive Director, Invasive Species Council of Metro Vancouver
The importance of the regional best management practices series for high priority invasive species.
Executive Summary provided

Information Items:

None

Invest Vancouver Management Board – September 13, 2024

Delegations:

None

Information Items:

E3 Invest Vancouver 2024 Annual Plan Deliverables and KPI Mid-Year Update
E5 2024 New Mobility Forum