

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

BOARD MEETING

Friday, April 26, 2024

9:00 am

28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia

Webstream available at <https://metrovancouver.org>

[Membership and Votes](#)

REVISED AGENDA¹

A. ADOPTION OF THE AGENDA

1. April 26, 2024 Meeting Agenda

That the MVRD Board adopt the revised agenda for its meeting scheduled for April 26, 2024 as circulated.

B. ADOPTION OF THE MINUTES

1. March 22, 2024 Meeting Minutes

That the MVRD Board adopt the minutes for its meeting held March 22, 2024 as circulated.

pg. 6

C. DELEGATIONS

D. INVITED PRESENTATIONS

- 1. Tamara Vrooman, President and CEO, Vancouver Airport Authority
Heather Deal, Board Director, Nominated by Metro Vancouver Regional District
Subject: 2023 YVR Annual Update**

pg. 18

E. CONSENT AGENDA

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

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

1. REGIONAL PARKS COMMITTEE REPORTS

1.1 Regional Greenways 2050 Plan Implementation Update pg. 22

That the MVRD Board receive for information the report dated March 13, 2024, titled “Regional Greenways 2050 Plan Implementation Update.”

1.2 Manager’s Report – Regional Parks pg. 46

That the MVRD Board receive for information the report dated March 14, 2024, titled “Manager’s Report – Regional Parks.”

2. CLIMATE ACTION COMMITTEE REPORTS

2.1 Appointment of Enforcement Officers and Assistant District Director pg. 80

That the MVRD Board:

- a) pursuant to the *Greater Vancouver Regional District Air Quality Management Bylaw 1082, 2008* and the *Environmental Management Act*:
 - i. appoint Metro Vancouver employee Sonny Johal as assistant district director;
 - ii. rescind the appointment of Scott Brown as an officer; and
 - iii. appoint Metro Vancouver employees Sonia Ganjehei and Nicole MacDonald 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 Scott Brown; and
 - ii. appoint Metro Vancouver employees Sonia Ganjehei and Nicole MacDonald.

3. REGIONAL PLANNING COMMITTEE REPORTS

3.1 Where Matters II – Final Report pg. 82

That the MVRD Board:

- a) receive for information the report dated March 13, 2024, titled “Where Matters II – Final Report”;
- b) forward the “Where Matters II – Final Report: Walkability and Greenspace Relationships with Health and Climate Change” report to member jurisdictions for information with an offer of presenting the report findings to councils; and
- c) direct staff to forward the “Where Matters II – Final Report: Walkability and Greenspace Relationships with Health and Climate Change” report to staff at the Ministry of Health including local Health Authorities, Ministry of Housing, Ministry and Municipal Affairs, and Ministry of Transportation and Infrastructure for information.

3.2 Tree Canopy Cover and Impervious Surface – 2020 Update *pg. 104*

That the MVRD Board:

- a) receive for information the report dated March 15, 2024 titled “Tree Canopy Cover and Impervious Surface – 2020 Update”; and
- b) share the findings and datasets with member jurisdictions with an offer of a staff presentation to Council upon request.

3.3 Metro Vancouver Tree Regulations Toolkit Update *pg. 115*

That the MVRD Board:

- a) receive for information the report dated March 8, 2024, titled “Metro Vancouver Tree Regulations Toolkit Update”; and
- b) forward the “Metro Vancouver Tree Regulations Toolkit Update” to member jurisdictions for information with an offer of a presentation to Councils upon request.

3.4 2023 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver *pg. 227*

That the MVRD Board:

- a) receive for information the report dated March 15, 2024, titled, “2023 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver”; and
- b) forward the “2023 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver” and its attachment to member jurisdictions for information with an offer for Council presentations upon request.

4. FINANCE COMMITTEE REPORTS

**Correction
on Page 1
of Report**

4.1 Audited 2023 Financial Statements and Annual Financial Results *pg. 325*

That the MVRD Board approve the Audited 2023 Consolidated Financial Statements for the Metro Vancouver Regional District.

5. MAYORS COMMITTEE REPORTS

5.1 UBCM 2024 Community Excellence Awards Nominations *pg. 407*

That the MVRD Board support Metro Vancouver’s entries for the Union of BC Municipalities (UBCM) 2024 Community Excellence Award. The nominations include:

- a) Excellence in Service Delivery: Ferguson Road Upgrades;
- b) Excellence in Asset Management: Earthquake Early Warning System and Strategic Response System; and
- c) Excellence in Sustainability: Señákw Development Sewer Heat Recovery District Energy System.

6. CHIEF ADMINISTRATIVE OFFICER REPORTS

6.1 Proclamation of Clean Transportation Month 2024 *pg. 411*

That the MVRD Board proclaim June 2024 as “Clean Transportation Month” for the Metro Vancouver region.

F. ITEMS REMOVED FROM THE CONSENT AGENDA

G. REPORTS NOT INCLUDED IN CONSENT AGENDA

1. FINANCE COMMITTEE REPORTS

1.1 Policy Update: Procurement and Real Property Contracting Authority Policies *pg. 416*

That the MVRD Board:

- a) adopt the *Procurement and Asset Disposal Authority Policy*, as presented in the report dated March 27, 2024, titled “Policy Update: Procurement and Real Property Contracting Authority Policies”, effective June 1, 2024;
- b) adopt the *Real Estate Authority Policy*, as presented in the report dated March 27, 2024, titled “Policy Update: Procurement and Real Property Contracting Authority Policies”, effective June 1, 2024; and

That the MVRD Board:

- a) rescind the *Asset Disposal Policy* (No. FN-011), effective May 31, 2024;
- b) rescind the *Procurement and Real Property Contracting Authority Policy* (No. FN-006), effective May 31, 2024;
- c) revise the *Fleet Planning and Acquisition Policy* (No. FN-014), as presented in the report dated March 27, 2024, titled “Policy Update: Procurement and Real Property Contracting Authority Policies”, effective June 1, 2024;
- d) give first, second and third reading to *Metro Vancouver Regional District Officers and Delegation Amendment Bylaw No. 1375, 2024*; and
- e) adopt *Metro Vancouver Regional District Officers and Delegation Amendment Bylaw No. 1375, 2024*.

H. MOTIONS FOR WHICH NOTICE HAS BEEN GIVEN

I. OTHER BUSINESS

1. MVRD Board Committee Information Items and Delegation Summaries *pg. 465*

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 April 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:
- (g) litigation or potential litigation affecting 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 April 26, 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 9:01 am on Friday, March 22, 2024, in the 28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:

Delta, Chair, Director George V. Harvie	Richmond, Director Bill McNulty
Anmore, Vice Chair, Director John McEwen	Surrey, Director Mike Bose
Belcarra, Director Jamie Ross	Surrey, Alternate Director Doug Elford for Director Harry Bains
Bowen Island, Director Andrew Leonard* (departed at 10:43 am)	Surrey, Director Gordon Hepner
Burnaby, Director Pietro Calendino	Surrey, Director Pardeep Kooner
Burnaby, Director Sav Dhaliwal	Surrey, Director Brenda Locke
Burnaby, Director Mike Hurley	Surrey, Director Rob Stutt
Coquitlam, Director Craig Hodge	sc̓w̓aθ̓ən məsteyəx ^w (Tsawwassen First Nation), Director Laura Cassidy* (arrived at 9:22 am)
Coquitlam, Director Teri Towner	Vancouver, Director Rebecca Bligh (arrived at 9:04 am)
Delta, Director Dylan Kruger	Vancouver, Director Adriane Carr
Langley City, Director Paul Albrecht	Vancouver, Director Lisa Dominato* (departed at 11:27 am)
Langley Township, Director Steve Ferguson	Vancouver, Director Sarah Kirby-Yung (arrived at 9:13am)
Langley Township, Director Eric Woodward	Vancouver, Director Mike Klassen
Maple Ridge, Director Dan Ruimy*	Vancouver, Alternate Director Peter Meiszner for Director Ken Sim
New Westminster, Director Patrick Johnstone	Vancouver, Director Lenny Zhou
North Vancouver City, Director Linda Buchanan	West Vancouver, Director Mark Sager
North Vancouver District, Director Lisa Muri	White Rock, Director Megan Knight
Pitt Meadows, Director Nicole MacDonald	
Port Coquitlam, Director Brad West	
Port Moody, Director Meghan Lahti	
Richmond, Director Chak Au*	
Richmond, Director Malcolm Brodie	

MEMBERS ABSENT:

Electoral Area A, Director Jen McCutcheon	Lions Bay, Director Ken Berry
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OTHERS PRESENT:

Olga Kuznetsova, Vice President Financial Services, TransLink
Sarah Ross, Vice President, Planning & Policy, TransLink

STAFF PRESENT:

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

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

A. ADOPTION OF THE AGENDA

1. March 22, 2024 Meeting Agenda

It was MOVED and SECONDED

That the MVRD Board amend the agenda by adding the following delegations:

- C1 – Rob Blackwell, Executive VP, Development, Anthem Properties; and
- C2 – Dean Johnson, Vice President, Development, Wesgroup Properties.

CARRIED

It was MOVED and SECONDED

That the MVRD Board adopt the agenda for its meeting scheduled for March 22, 2024 as amended and address Item J – Resolution to Close Meeting immediately.

CARRIED

Agenda Order Varied

Agenda order was varied to consider Item J – Resolution to Close Meeting at this point.

J. RESOLUTION TO CLOSE MEETING

It was MOVED and SECONDED

That the MVRD Board close its meeting scheduled for March 22, 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:
- (c) labour relations or other employee relations;
 - (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;
 - (g) litigation or potential litigation affecting the municipality; and
 - (i) the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose.
- (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.

CARRIED

9:04 am Director Bligh arrived at the meeting.

It was MOVED and SECONDED

That MVRD Board recess its regular meeting of March 22, 2024.

CARRIED
(Time: 9:05 am)

Reconvene

The MVRD Board reconvened its regular meeting of March 22, 2024 at 9:21 am.

9:22 am Director Cassidy arrived at the meeting.

B. ADOPTION OF THE MINUTES

1. February 23, 2024 Meeting Minutes

It was MOVED and SECONDED

That the MVRD Board adopt the minutes for its meeting held February 23, 2024 as circulated.

CARRIED

C. DELEGATIONS

1. Rob Blackwell, Executive VP, Development, Anthem Properties

Rob Blackwell, Executive VP, Development, Anthem Properties, provided the MVRD Board with a presentation titled “The Impact on Housing from Metro Vancouver DCCs”, regarding *Metro Vancouver Regional District Development Cost Charge Bylaw No. 1369, 2023* as presented in Item G2.1 of the agenda.

The delegation requested that the MVRD Board not adopt the bylaw presented in Item G2.1 – Metro Vancouver Regional District Development Cost Charge Bylaw No. 1369, 2023.

In response to questions, Rob Blackwell noted:

- DCCs will significantly increase the rental costs for tenants;
- municipalities should increase property taxes to support infrastructure growth; and
- activity in the construction industry is low due to increased construction costs.

2. Dean Johnson, Vice President, Development, Wesgroup Properties

Dean Johnson, Vice President, Development, Wesgroup Properties, spoke about *Metro Vancouver Regional District Development Cost Charge Bylaw No. 1369, 2023* as presented in Item G2.1 of the agenda.

The delegation requested that Metro Vancouver conduct a thorough financial analysis to understand the impact that DCCs will have on housing delivery before imposing DCCs. Mr. Johnson also noted that many in-stream development projects will not proceed if DCCs are imposed, as the projects will no longer be financially viable. Mr. Johnson requested that in-stream projects be exempted from the proposed DCC requirements.

D. INVITED PRESENTATIONS

**1. Olga Kuznetsova, Vice President Financial Services, TransLink
Sarah Ross, Vice President, Planning & Policy, TransLink**

Olga Kuznetsova, Vice President Financial Services, and Sarah Ross, Vice President, Planning & Policy, TransLink, provided a presentation titled “Consultation on TransLink’s 2024 Investment Plan”, regarding item G2.2 of the agenda. Ms. Ross provided an overview of the proposed services, investments, and changes to revenue in 2024.

It was MOVED and SECONDED

That MVRD Board vary the order of the agenda to deal with Item G2.2 at this point.

CARRIED

Agenda Order Varied

The order of the agenda was varied to consider Item G2.2 at this point.

G. 2.2 TransLink's 2024 Investment Plan and Borrowing Limit

Report dated March 15, 2024, from Heather McNell, Deputy Chief Administrative Officer, Policy and Planning, providing the MVRD Board with the opportunity to review TransLink’s projects and programs, and the proposed increase to TransLink’s borrowing limits associated with the TransLink’s 2024 Investment Plan.

The report titled “TransLink's 2024 Investment Plan and Borrowing Limit” was released from the closed MVRD Board meeting of March 22, 2024 and referred to this meeting for the Board’s consideration.

It was MOVED and SECONDED

That the MVRD Board:

- a) support TransLink’s proposed 2024 Investment Plan as aligned with *Metro 2050*, the regional growth strategy, as presented in the report dated March 15, 2024, titled “TransLink's 2024 Investment Plan and Borrowing Limit”;
- b) receive for information the materials regarding TransLink’s required increase to its borrowing limit as presented in the report dated March 15, 2024, titled “TransLink’s 2024 Investment Plan and Borrowing Limit”; and
- c) direct staff to send letters to the Provincial Minister of Transportation and Infrastructure, Parliamentary Secretary for TransLink, TransLink Board, and Mayors’ Council on Regional Transportation noting that the 2024 Investment Plan is aligned with *Metro 2050*.

CARRIED

It was MOVED and SECONDED

That MVRD Board recess its regular meeting of March 22, 2024.

CARRIED

(Time: 10:01 am)

Reconvene

The MVRD Board reconvened its regular meeting of March 22, 2024 at 11:06 am.

Agenda Order Resumed

The order of the agenda resumed with Item E being before the Board at this point.

E. CONSENT AGENDA

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

- 2.1 Pilot Program to Permit Alcohol Consumption in Regional Parks
- 3.1 Regional Multi-Hazard Mapping Project

It was MOVED and SECONDED

That the MVRD Board adopt the recommendations presented in the following items as presented in the March 22, 2024 MVRD Board Consent Agenda:

- 1.1 Barnston Island Dike Improvement Project – Updated Dike Assessment
- 1.2 Electoral Area A Community Works Fund – University Endowment Lands Project
- 1.3 Electoral Area A Emergency Response Reimbursement – Update
- 2.2 Amended tæmtæmíxʷtæn/Belcarra South Design Concept
- 2.3 Manager’s Report – Regional Parks
- 3.2 Metro 2050 Implementation Guideline – Sewerage Area Amendment Applications
- 3.3 Request for Sanitary Service Connection at 4276 – 248 Street, Township of Langley
- 3.4 Acceptance of the Fraser Valley Regional District Regional Growth Strategy – Bylaw No. 1706, 2023
- 3.5 Inclusionary Housing Policy Review – Final Report and Regional Model Policy Framework
- 4.1 Metro Vancouver Long Term Financial Plan Framework and Timeline
- 5.1 Provincial Housing Legislation: Provincial Advocacy and Supportive Roles

CARRIED

The items and recommendations referred to above are as follows:

1.1 Barnston Island Dike Improvement Project – Updated Dike Assessment

Report dated February 8, 2024, from Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services, Regional Planning and Housing Services, seeking MVRD Board approval to use the cost and priority rating table in this report as a guide to implement improvements to the Barnston Island Dike and presenting the updated Barnston Island Dike Assessment for information.

Recommendation:

That the MVRD Board:

- a) receive for information the report dated February 8, 2024, titled “Barnston Island Dike Improvement Project – Updated Dike Assessment”; and
- b) direct staff to use the cost and priority rating table, as presented in Table 1 of this report, as a guide for implementing individual Barnston Island Dike infrastructure improvements.

Adopted on Consent

- 1.2 Electoral Area A Community Works Fund – University Endowment Lands Project**
Report dated February 8, 2024, from Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services, Regional Planning and Housing Services, seeking MVRD Board approval for funding through the Electoral Area A Community Works Fund for the Chancellor Blvd. Sidewalk project in the University Endowment Lands with an estimated cost of \$157,000.

Recommendation:

That the MVRD Board approve funding from the Electoral Area A Community Works Fund as described in the report dated February 8, 2024, titled “Electoral Area A Community Works Fund – University Endowment Lands Project” for the Chancellor Blvd. Sidewalk Project up to \$157,000.

Adopted on Consent

- 1.3 Electoral Area A Emergency Response Reimbursement – Update**
Report dated February 8, 2024, from Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services, Regional Planning and Housing Services, providing the MVRD Board with an overview of the Regional Public Works Mutual Aid Agreement and how local authorities would be reimbursed for responding to emergencies in areas of Electoral Area A outside of UBC and the University Endowment Lands (UEL).

Recommendation:

That the MVRD Board receive for information the report dated February 8, 2024, titled “Electoral Area A Emergency Response Reimbursement – Update”.

Adopted on Consent

- 2.2 Amended t̄amt̄ámíx̄ˆt̄ən/Belcarra South Design Concept**
Report dated February 14, 2024, from Mike Redpath, Director, Regional Parks, seeking MVRD Board approval of the Amended t̄amt̄ámíx̄ˆt̄ən/Belcarra South Design Concept to improve visitor experience and resource management at t̄amt̄ámíx̄ˆt̄ən/Belcarra Regional Park, and reduce capital and operating expenses.

Recommendation:

That the MVRD Board approve the Amended t̄amt̄ámíx̄ˆt̄ən/Belcarra South Design Concept as presented in the report dated February 14, 2024, titled “Amended t̄amt̄ámíx̄ˆt̄ən/Belcarra South Design Concept.”

Adopted on Consent

2.3 Manager’s Report – Regional Parks

Report dated February 28, 2024 from Mike Redpath, Director, Regional Parks, providing the MVRD Board with information on the January 27, 2024 volunteer appreciation and networking event, the Metro Vancouver Regional Parks Foundation 2023 Annual Report, and some regional parks updates including on the Regional Park at Cape Roger Curtis.

Recommendation:

That the MVRD Board receive for information the report dated February 28, 2024, titled “Manager’s Report – Regional Parks”.

Adopted on Consent

3.2 Metro 2050 Implementation Guideline – Sewerage Area Amendment Applications

Report dated January 15, 2024, from Victor Cheung, Regional Planner, Regional Planning and Housing Services, providing the MVRD Board with the proposed updates to *Metro 2050* Implementation Guideline – Sewerage Area Amendment Applications. The main changes include the description of common sewerage area amendment scenarios and corresponding board procedures, updates to the sewerage area amendment application process diagram, and formatting for better readability.

Recommendation:

That the MVRD Board endorse the *Metro 2050* Implementation Guideline – Sewerage Area Amendment Applications as presented in the report dated January 15, 2024, titled “*Metro 2050* Implementation Guideline – Sewerage Area Amendment Applications”.

Adopted on Consent

3.3 Request for Sanitary Service Connection at 4276 – 248 Street, Township of Langley

Report dated February 12, 2024, from Victor Cheung, Regional Planner, Regional Planning and Housing Services, seeking MVRD Board concurrence that the regional sewerage service for 4276 – 248 Street, in the Township of Langley, is generally consistent with *Metro 2050*.

Recommendation:

That the MVRD Board:

- a) resolve that sewer service for the property at 4276 – 248 Street, Township of Langley is generally consistent with the provisions of *Metro 2050*; and
- b) forward the requested Fraser Sewerage Area amendment application for the property at 4276 – 248 Street in the Township of Langley to the GVS&DD Board for consideration.

Adopted on Consent

3.4 Acceptance of the Fraser Valley Regional District Regional Growth Strategy - Bylaw No. 1706, 2023

Report dated February 12, 2024, from Victor Cheung, Regional Planner, Regional Planning and Housing, providing the MVRD Board with the *Fraser Valley Regional District Fraser Valley Future 2050 Regional Growth Strategy Bylaw No. 1706, 2023* for review. The report seeks MVRD Boards acceptance of the Fraser Valley Regional District regional growth strategy and presents staff's review of the bylaw relative to the five goals of *Metro 2050* that found the two regional growth strategies to be well aligned.

Recommendation:

That the MVRD Board:

- a) accept the *Fraser Valley Regional District Fraser Valley Future 2050 Regional Growth Strategy Bylaw No. 1706, 2023* pursuant to section 436 of the *Local Government Act*; and
- b) send a letter forwarding the Board resolution to the Fraser Valley Regional District Board.

Adopted on Consent

3.5 Inclusionary Housing Policy Review – Final Report and Regional Model Policy Framework

Report dated February 20, 2024, from Jessica Hayes, Acting Program Manager, Housing Policy and Planning, Regional Planning and Housing Services, providing the MVRD Board with the final report and recommendations of the Inclusionary Housing Policy Review, including a regional model policy framework. The report seeks to assist member jurisdictions seeking to adopt or update inclusionary housing policies and encourage policy consistency across the region.

Recommendation:

That the MVRD Board:

- a) receive for information the report dated February 20, 2024, titled "Inclusionary Housing Policy Review – Final Report and Regional Model Policy Framework"; and
- b) send correspondence to member jurisdictions, requesting that the regional model policy framework be considered when adopting or updating inclusionary housing policies.

Adopted on Consent

4.1 Metro Vancouver Long Term Financial Plan Framework and Timeline

Report dated March 4, 2024, from Harji Varn, Chief Financial Officer/General Manager, Financial Services, and Sonu Kailley, Director, Financial Planning, seeking MVRD Board direction to continue the work on the Long-Term Financial Plan per the staff proposed framework and timeline that targets completion by Quarter 4, 2024.

Recommendation:

That the MVRD Board approve the Metro Vancouver Long Term Financial Plan Framework and Timeline as presented in the report dated March 4, 2024, titled “Metro Vancouver Long Term Financial Plan Framework and Timeline”.

Adopted on Consent

5.1 Provincial Housing Legislation: Provincial Advocacy and Supportive Roles

Report dated February 23, 2024, from Heather McNell, Deputy Chief Administrative Officer, Policy and Planning, and Jonathan Cote, Deputy General Manager, Regional Planning and Housing Development, Regional Planning and Housing Services, providing the MVRD Board with an update on the new provincial housing legislation, the feedback that Metro Vancouver has received through engagement with member jurisdictions, and recommendations for Metro Vancouver actions including advocacy to the Province.

Recommendation:

That the MVRD Board:

- a) Direct staff to provide an ‘opt in’ opportunity for member jurisdictions for Metro Vancouver to undertake the Housing Needs Reports as per the provincial methodology and requirements;
- b) Direct staff to advance and coordinate ‘opt in’ opportunities for co-operative procurement of consultants for member jurisdictions necessary for implementing the new provincial housing legislation; and
- c) Advance advocacy actions to the Province directed towards: infrastructure programs and funding to ensure that sufficient infrastructure is in place to accommodate the increases in population and housing projected; better alignment with *Metro 2050*; and stronger support for non-market and affordable housing.

Adopted on Consent

F. ITEMS REMOVED FROM THE CONSENT AGENDA

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

2.1 Pilot Program to Permit Alcohol Consumption in Regional Parks

Report dated February 14, 2024, from David Leavers, Division Manager, Visitor and Operations Services, Regional Parks, seeking MVRD Board approval for a pilot program to permit seasonal alcohol consumption in designated areas of six regional parks during 2024.

It was MOVED and SECONDED

That the MVRD Board:

- a) approve the Pilot Program to Permit Alcohol Consumption in Regional Parks in designated areas of six regional parks in 2024, as outlined in the report dated February 14, 2024, titled “Pilot Program to Permit Alcohol Consumption in Regional Parks”; and
- b) direct staff to report back with the required bylaw amendment to *Metro Vancouver Regional District Regional Parks Regulation Bylaw No. 1177, 2012* to authorize the designation of specific areas of select regional parks where liquor may be consumed; and
- c) direct staff to report back with a draft “Metro Vancouver Regional District Consumption of Liquor in Regional Parks Bylaw” to ensure compliance with the *Liquor Control and Licensing Act* of the Province of British Columbia.

CARRIED

Directors Bose, Dhaliwal, Hepner, Knight, Kooner, Locke, McNulty, and Stutt voted in the negative.

11:27 am Director Dominato departed the meeting.

3.1 Regional Multi-Hazard Mapping Project

Report dated February 12, 2024, from Edward Nichol, Senior Planner, Regional Planning and Housing Services, providing the MVRD Board with the results of the Regional Multi-Hazard Mapping project, which includes the completion of regional single-hazard maps, data quality rating maps, and multi-hazard maps for coastal flooding, riverine flooding, earthquake, and wildfire.

In response to questions, Heather McNell, Deputy Chief Administrative Officer, Policy and Planning, noted that the coastal flood map includes data for high and low sea level rise.

It was MOVED and SECONDED

That the MVRD Board receive for information the report dated February 12, 2024, titled “Regional Multi-Hazard Mapping Project”.

CARRIED

G. REPORTS NOT INCLUDED IN CONSENT AGENDA

1.1 Metro Vancouver Regional District Loan Authorization Bylaw No. 1381, 2024

Report dated February 27, 2024, from Linda Sabatini, Director, Financial Operations, recommending that the MVRD Board give first, second, and third reading to the *Metro Vancouver Regional District Loan Authorization Bylaw No. 1381, 2024*, authorizing the MVRD Board to borrow from the Municipal Finance Authority (MFA) a sum not exceeding \$70 million of the purpose of lending such monies, under an agreement, to the Metro Vancouver Housing Corporation (MVHC), in order to fund their anticipated capital requirements over the next five years.

It was MOVED and SECONDED

That the MVRD:

- a) approve that MVRD enter into an agreement with MVHC authorizing borrowing on behalf of MVHC from MFA in order to provide funding for MVHC's capital programs;
- b) give first, second and third readings to the "*Metro Vancouver Regional District Loan Authorization Bylaw No. 1381, 2024 (the "Bylaw")*" and forward to the Inspector of Municipalities for approval;
- c) upon approval from the Inspector of Municipalities, direct the Corporate Officer to undertake an alternative approval process to obtain participating area approval for the Bylaw pursuant to section 407(3)(b) of the *Local Government Act*;
- d) establish the deadline for receiving elector responses as 4:00pm, June 13, 2024;
- e) establish that the electoral response shall be in the form set out in Attachment 3;
- f) determine that a fair determination of the total number of electors in the area to which the approval process applies is 1,709,078; and
- g) provide that the participating area approval be obtained for the entire service area under the Bylaw pursuant to section 407(3)(b) of the *Local Government Act*.

CARRIED

2.1 Metro Vancouver Regional District Development Cost Charge Bylaw No. 1369, 2023

Report dated March 8, 2024, from Harji Varn, Chief Financial Officer, and Sonu Kailley, Director, Financial Planning, Financial Services, recommending that the MVRD Board adopt *Metro Vancouver Regional District Development Cost Charge Bylaw No. 1369, 2023*.

It was MOVED and SECONDED

That the MVRD Board adopt the *Metro Vancouver Regional District Development Cost Charge Bylaw No. 1369, 2023*.

CARRIED

H. MOTIONS FOR WHICH NOTICE HAS BEEN GIVEN

No items presented.

I. OTHER BUSINESS

1. MVRD Board Committee Information Items and Delegation Summaries

K. ADJOURNMENT

It was MOVED and SECONDED

That the MVRD Board adjourn its meeting of March 22, 2024.

CARRIED

(Time: 12:01 pm)

CERTIFIED CORRECT

Dorothy Shermer, Corporate Officer

George V. Harvie, Chair

66831164 FINAL

2023

YVR Annual Update



YVR is more than travel and tourism.

PEOPLE GROWTH

2023 was a year of unprecedented people growth. To improve resiliency and better serve our passengers, we doubled our workforce in key operational and support functions.

PAPER PLANES CAFÉ

In partnership with the Pacific Autism Family Network, we proudly opened the Paper Planes Café, a first-of-its-kind inclusive and accessible restaurant in Canada.

DIGITAL TWIN

We incorporated YVR's entire airfield into the Digital Twin, unlocking new functionality and use cases.



2023 IN FOCUS

YVR welcomed 24.9 million passengers in 2023 – a 31 per cent increase over 2022. Domestic and U.S. traffic rebounded robustly beyond pre-pandemic levels. International volumes remain lower predominantly related to ongoing global geopolitical dynamics. YVR strengthened connectivity with 13 new routes, including new direct service to Dubai, Washington, D.C., Atlanta, Nashville, Austin and Boston. YVR’s air cargo volumes continue to grow while other U.S. West Coast airport cargo volumes shrink. To support future growth, work is underway on our \$150 million cargo facility expansion.

ECONOMIC ENGINE FOR THE PROVINCE

YVR is more than travel and tourism – it’s the gateway of British Columbia’s economy. As Canada’s gateway to the Indo-Pacific, B.C. stands at a strategic advantage, further amplified by global airspace shifts and constraints.

YVR’s first-mover advantage attracts more international air services to our province, and this allows YVR to efficiently move goods, bolstering economic opportunities and growth. A single direct international flight at YVR can fuel the B.C. economy, supporting 320 jobs, ~\$36 million economic output, and improving access for B.C.’s exports via cargo. Additionally, the combination of new international flights and increased cargo volumes bolster the viability of intraprovincial routes, improving regional connectivity for all British Columbians.

NET ZERO 2030 JOURNEY

YVR is on course to meet our Net Zero 2030 objectives. This includes championing sustainable aviation and building resilience and capacity to mitigate climate change impacts across the province. Low-carbon air travel is a key priority in YVR’s carbon reduction roadmap. We are playing an active role in accelerating the transition to Sustainable Aviation Fuel to create new economic and job opportunities in British Columbia.

Cleantech initiatives aim to grow Sea Island as a hub for zero-carbon innovation, with a commitment to ecosystem health and noise management. Additionally, YVR is advancing partnerships with industry, government, and higher education to accelerate the net zero economy and expanding skilled labour for both the aviation and the broader transportation sector.

INNOVATION ACCELERATOR

YVR is an innovation hub that leverages both internal and external resources to advance innovative cleantech solutions. This includes collaborating with B.C. based businesses to gain fresh insights into innovation and support their ability to scale. YVR’s Digital Twin is one of many projects that has emerged from these collaborations. Additionally, YVR was the first testbed for B.C.’s Integrated Marketplace Initiative to electrify and reduce airport emissions.

CREATING VALUE FOR OUR CUSTOMERS

2023 focused on delivering a better and more predictable service to passengers and our community. YVR invested \$40 million in over 130 initiatives. This included operational changes, upgraded traveller experiences, and data and technology enhancements.

YVR also advanced critical work to provide a more accessible and inclusive travel experience for all people of all abilities. This included the launch of *Beyond Accessibility*, a new three-year accessibility plan, and proudly opening the Paper Planes Café, a first-of-its-kind inclusive and accessible restaurant at a Canadian airport.

WALKING THE PATH TOGETHER

In 2023, the Musqueam Gathering Place, was unveiled at YVR. This is a place where airport passengers and guests can immerse themselves in Musqueam culture, learn about deep-rooted traditions, and gain a greater appreciation for the unceded and continuously occupied land that YVR and Musqueam call home.



QUESTIONS?

Please contact Trevor Boudreau, Director, Government Relations
Trevor_Boudreau@yvr.ca

To: Regional Parks Committee

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

Date: March 13, 2024 Meeting Date: April 3, 2024

Subject: **Regional Greenways 2050 Plan Implementation Update**

RECOMMENDATION

That the MVRD Board receive for information the report dated March 13, 2024, titled “Regional Greenways 2050 Plan Implementation Update.”

EXECUTIVE SUMMARY

This report summarizes Metro Vancouver’s efforts to advance implementation of the *Regional Greenways 2050* plan. Advancing completion of the Regional Greenway Network requires collaborative action by municipal jurisdictions, TransLink, First Nations, Metro Vancouver, other levels of government, and other regional partners. Since the MVRD Board adoption of the *Regional Greenways 2050* plan in 2020, Metro Vancouver has advanced 21 projects under seven implementation roles – often in partnership with municipal jurisdictions.

Significant projects include hosting the 2023 Regional Greenway Network Implementation Forum and updating the Regional Greenway Network operational status map.

PURPOSE

To provide the Metro Vancouver Regional District (MVRD) Board information on the implementation activities undertaken by Metro Vancouver staff since the adoption of the *Regional Greenways 2050* plan by the MVRD Board in late 2020.

BACKGROUND

Updating the MVRD Board on the status of *Regional Greenway 2050* implementation actions is identified in the “2024 Regional Parks Committee Meeting Schedule and Work Plan” report dated January 4, 2024.

IMPLEMENTATION ACTIONS

The *Regional Greenways 2050* plan contains a set of implementation strategies and a five-year action plan organized according to municipal jurisdiction, TransLink, First Nations, Metro Vancouver, other levels of government, and other regional partners. For Metro Vancouver, the plan identifies seven roles with 28 implementation actions.

As Metro Vancouver staff advanced implementation of the plan over the last three years, a number of sub-actions were identified, which has resulted in 33 current initiatives. Review of the implementation status of the 33 sub-actions found that 10 have been completed, nine are in progress, two are classified as ongoing (annual activities), and the remaining 12 have not been started. See Attachment 1 for the implementation status table.

Following are highlights of the Metro Vancouver's implementation activities by theme.

Build Role

Metro Vancouver directly contributes to the advancement of the Regional Greenway Network by developing:

1. Incomplete segments of the four regional parks greenways it operates and maintains
2. New sections of multi-use pathways within regional parks that contribute to the Regional Greenway Network

Since 2020, Metro Vancouver has advanced the following implementation actions/sub-actions:

- Constructed the 500-metre-long Rock 'N Horse Trail connector in Aldergrove Regional Park
- Initiated detailed route planning for gaps in the Brunette Fraser Regional Greenway
- Supported planning and design of the Sea Island Regional Greenway as part of the Iona Waste Water Treatment Plant project
- Initiated planning and design on the two-kilometre (approximate) segment of the Delta South Surrey Regional Greenway between Nordel Way and 72nd Avenue
- Initiated planning on the Kanaka Creek Regional Park trail network connector to the proposed Port Haney segment of the Canyon to Coast trail
- Constructed approximately 3 km of the Campbell Valley Regional Park Perimeter Trail

Educate and Inform Role

As the vision holder for the Regional Greenway Network, Metro Vancouver was assigned actions under the educate and inform role of the action plan. One of the key responsibilities is tracking Regional Greenway Network implementation progress by all regional greenway developers since the adoption of the vision. Since 2020, Metro Vancouver has advanced the following implementation actions/sub-actions:

- Published the Board-adopted *Regional Greenways 2050* plan on the Metro Vancouver webpage
- Initiated an update of the operational status database for the Regional Greenway Network (*Regional Greenway Network Database Update & Status Report*)

The Regional Greenway Network database update project was initiated to determine how much progress had been made on the expansion of the Regional Greenway Network in the three years since the plan was adopted in 2020. This project is close to being complete and the results will be reported to the MVRD later this year.

Fund Role

Funding the development of regional greenways is another role identified for Metro Vancouver action in the plan. Implementation actions identified for Metro Vancouver focused on seeking grants, and exploring opportunities for new funding sources for both Metro Vancouver's regional parks greenways and the broader greenway network. Since 2020, Metro Vancouver has advanced the following implementation actions/sub-actions:

- Supported submission of a capital grant application for Burnaby Lake South Greenway
- Advanced a Regional Parks Development Cost Charge program to expand support for Regional Parks
- Explored options for allocating a portion of the Greater Vancouver Regional Fund towards establishment of a capital grant fund to support development of the Regional Greenway Network

Future collaboration with regional district member municipalities include acquiring missing tenures required to complete the regional parks greenways Metro Vancouver operates and maintains.

Convene and Collaborate Role

Metro Vancouver's historic function as regional convener is strongly reflected in the convene and collaborate role in the action plan. Since 2020, Metro Vancouver has advanced the following implementation actions/sub-actions:

- Supported the development of the *Climate 2050 Transportation Roadmap*
- Advocated for the inclusion of the Regional Greenway Network map in *Transport 2050*, TransLink's strategic transportation plan
- Collaborated with the City of Burnaby in the planning and construction of portions of the Burnaby Lake South Greenway
- Studied the sustainable transportation preferences of visitors to regional and other large natural parks

Plan and Policy Role

Since 2020, Metro Vancouver has advanced the following planning and policy-related implementation actions/sub-actions:

- Included the Regional Greenway Network map in the updated regional growth strategy (*Metro 2050*)
- Reviewed and updated the *Regional Parks Land Acquisition Strategy* to advance completion of the regional parks greenways
- Researched land tenure and initiated early engagement with key stakeholders on the 1 km gap in the Pitt River Greenway at the Pitt River Quarry
- Reviewed the *Seymour River Greenway Plan – Multi-Use Recreation Pathway Conceptual Plan* (2004) and explored options for project advancement with Metro Vancouver Water Services and Real Estate Services, and the District of North Vancouver

Operate Role

Under the *Regional Greenways 2050* operate role, Metro Vancouver operated and maintained Regional Parks' Brunette Fraser, Seymour River, Delta South Surrey, and Pitt River regional greenways.

Promote and Advocate Role

The plan's promote and advocate role is closely related to the convene and collaborate role that Metro Vancouver also supports in the action plan. Metro Vancouver's implementation actions focus on promoting collaborative implementation of the plan and developing consistent wayfinding standards for the network. Since 2020, Metro Vancouver has advanced the following implementation action/sub-action:

- Hosted the Regional Greenway Network Implementation Forum (November 15, 2023)

The Regional Greenway Network Implementation Forum (Attachment 2) provided attendees an opportunity to learn about the region wide system of recreational greenways, develop relationships and discuss on how best to advance the continued development of the network. Sixty (60) representatives from First Nations, municipal jurisdictions, other government agencies, and partners along with Metro Vancouver staff participated. Feedback from participants was positive with the majority of participants supporting a regularly scheduled forum on greenways.

scəwáθən məsteyəx^w (Tsawwassen First Nation) Elder Ruth Mary Adams and her Granddaughter Jesseca Adams provided the keynote address at the forum, sharing Elder Ruth's vision for the Great Blue Heron Way. The Great Blue Heron Way is a "proposed greenway to reconnect First Nations around the Salish Sea and the Sto:lo" (i.e., Fraser River). Elder Ruth described it as a way of healing and reconciliation that will honor each and every Traditional Territory and reconnect First Nations as they once were, across land and water. In addition to working in partnership to link multi-use greenways for community walking and cycling, the vision helps promote meaningful reconciliation for First Nations and their neighbours along a healing pathway, and provides opportunity for Indigenous-led cultural awareness.

Following the forum, staff received a letter (Attachment 3) looking for support for the vision and branding of the Great Blue Heron Way. Staff have reviewed the concept and find it to be complementary to the Regional Greenway Network as well as several other national and regional trail concepts such as the Canyon to Coast Trail (Experience the Fraser), TransCanada Trail, and Spirit Trail. As opportunities arise, Metro Vancouver staff will continue to raise awareness of the vision for the Great Blue Heron Way and share it with the member jurisdictions. Additionally, staff are currently working with scəwáθən məsteyəx^w on cultural recognition and collaborative opportunities for the development of the Boundary Bay Regional Park perimeter trail.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

This is an information report. There are no financial implications associated with it. All actions/sub-actions described above were completed within the Board's approved annual budget for the respective year. Any future activities requiring funding beyond regular operational budget allocations will be brought forward for approval during the Board's annual budget approval process prior to implementation.

CONCLUSION

This report summarizes the implementation activities Metro Vancouver has undertaken since the adoption of the *Regional Greenways 2050* plan in 2020. Metro Vancouver has advanced 21 projects under seven implementation roles in the past three years, both as a regional convener and as an operator of regional parks greenways.

Significant projects completed include hosting the 2023 Regional Greenway Network Implementation Forum and initiating the *Regional Greenway Network Database Update & Status Report* project.

Metro Vancouver staff will continue to collaborate with regional partners as it continues to support the realization of the region's shared vision of a connected network of regional recreational trails.

ATTACHMENTS

1. Regional Greenway Network Implementation Action Status Table
2. Regional Greenway Network Implementation Forum Summary Report, dated February 28, 2024
3. Letter from scə́waθən məsteyəx^w Elder Ruth Mary Adams, to Jamie Vala, dated November 22, 2023
4. Presentation re: Regional Greenways 2050 Plan Implementation Update

REFERENCES

1. [Regional Greenways 2050 Plan](#)

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RG 2050 Role	RG 2050 Action	Sub-Action / Project	Status	Comments
Build	Construct priority regional greenway segments located in regional parks	Connect the west end of the Rock'n Horse Trail in Aldergrove Regional Park to the South Langley Regional Trail at 8th Ave. and 272nd Street	Complete	Constructed an approximately 500 m long connector trail between the South East Langley Regional Greenway trail at 8th Ave. and 272nd St. and the previously existing portion of the Rock 'N Horse trail in Aldergrove Regional Park.
		Extend the Campbell Valley Regional Park perimeter trail	In Progress	Long range plan is to extend the perimeter trail along the southern boundary of the park for cyclists, and pedestrians. To date Metro Vancouver constructed approximately 3 km of trail along the south boundary of the park from Lochiel School House to the southern boundary of the park near the intersection of 4th Avenue and 212th Street.
	Design Regional Parks greenway routes	Trail Upgrades (Nordel Way to 72nd Avenue) Delta South Surrey Regional Greenway	In Progress	The section of trail between Nordel Way and 72nd Avenue is part of the proposed route of the Delta South Surrey Regional Greenway. It functions as the access trail to the Delta Nature Reserve and as a utility corridor for Metro Vancouver Liquid Waste Services. Frequent flooding and erosion mean trail upgrades to this section are required. Design has commenced in 2024.
		Sea Island Regional Greenway - Iona Beach Regional Park / Causeway segments	In Progress	As part of the Iona Waste Water Treatment Plant replacement project, the portions of the regional greenway in Iona Beach Regional Park and on the Iona Island causeway are being designed.
		Coast to Canyon Trail - Port Haney to Kanaka Creek Regional Park	In Progress	Maple Ridge acquired land for park and greenway use, secured consulting services to design a greenway trail alignment and conduct public engagement. Metro Vancouver reviewed proposed municipal trail alignment, and developed a trail concept for connecting the municipal greenway segment to the Kanaka Creek Regional Park trail network.
Secure tenure to Regional Parks greenway routes	Brunette Fraser Regional Greenway Tenure Acquisition Project	In Progress	Metro Vancouver is working with the City of New Westminster to secure additional tenure for the Brunette Fraser Regional Greenway.	
Convene and Collaborate	Support <i>Climate 2050</i> development and implementation	Alternative transportation study and supporting market research	Complete	Completed a study of cycling and public transit to better understand how visitors travel to regional parks. Included market research of the general regional population as well as in-park surveys of visitors.

		Develop transportation road map.	Complete	Metro Vancouver adopted the <i>Climate 2050</i> Transportation Roadmap November, 2021. This roadmap included support for active transportation activities such as cycling.
	Support <i>Transport 2050</i> development	Include Regional Greenway Network map in Transport 2050 plan.	Complete	Metro Vancouver participated in the development of the regional transportation strategy, <i>Transport 2050</i> , which includes the Regional Greenway Network map.
Educate and Inform	Collaborate with TransLink and others to track and report on Regional Greenway Network expansion	No sub-action	In Progress	Map 2 in the Regional Greenways 2050 plan (Regional Greenway Network Operational Status) describes the operational status of the trails that make up the network. This data is three years old and required updating. A consultant was hired and this work will be complete in 2024.
	Publish Board adopted greenways plan online	No sub-action	Complete	Regional Greenways 2050 plan was published on the Metro Vancouver website after adoption by the MVRD Board in November 2020.
Fund	Explore options for obtaining a proportion of regional allocation of Federal Gas Tax funding for regional greenway development	No sub-action	Complete	Metro Vancouver also explored the potential to update the Greater Vancouver Regional Fund as part of the program's renewal to secure federal capital funding for the establishment of a Regional Greenway Network capital grant program to be administered by the regional district. The MVRD Board decided that the current priority for the Fund remains transit projects identified by TransLink. However, the future allocation of any one-time or permanent increases in Canada Community-Building Fund distributions, beyond the indexed annual rate, will be considered on a case-by-case basis by the Board.
	Explore Regional Parks Development Cost Charges (DCC) program to expand support for Regional Parks greenway development	No sub-action	Complete	Metro Vancouver passed third reading of a DCC bylaw for regional park land acquisition. Land Acquisition for regional parks greenways was included. It is anticipated this bylaw will be adopted in March of 2024.
	Seek capital grants when available	Submitted grant funding for Burnaby Lake South Regional Greenway	Complete	Application submitted to Infrastructure Canada's Active Transportation Fund grant program. Grant funding not received. Project was not shovel ready

Operate	Operate and Maintain Regional Parks' greenways	Annual activity	Ongoing	Metro Vancouver continues to operate and maintain four regional park greenways.
Plan and Policy	Commence conceptual and detailed planning for priority segments of current Regional Parks greenway routes	Burnaby Lake South Greenway Phase 2	In Progress	Being completed in partnership with City of Burnaby this 3.4 km planned greenway will travel along the south side of Burnaby Lake Regional Park on the alignment of an existing gravel surfaced recreation trail and narrow low traffic road. Phase 1 was constructed by Fortis BC previously. Burnaby is undertaking a feasibility study and lighting estimate using consulting services.
		Pitt River Regional Greenway	In Progress	Researched status of incomplete segment of Pitt River Greenway to determine opportunities to advance the greenway. Particular focus on the gap at the Pitt River Quarry. Anticipated next step is to initiate a study of options.
		Seymour River Regional Greenway	In Progress	Researched the status of the incomplete segment of Seymour River Regional Greenway with Metro Vancouver Water Services and District of North Vancouver staff to determine opportunities to advance project. Particular focus on the development of a portion of the greenway alignment at Water Services Beach Yard property on Burrard Inlet in the Maplewood industrial area. Anticipated future work includes clarifying the feasibility of a greenway along the east or west edge of the Beach Yard facility as part of site redevelopment after the water supply tunnel construction is complete with further exploration of alternatives as necessary.
	Include the Regional Greenway Network and supporting policies, as appropriate, in the update of the Regional Growth Strategy, <i>Metro 2050</i>	No sub-action	Complete	See map 10 in <i>Metro 2050</i>
Update <i>Regional Parks Land Acquisition 2050</i> strategy with greenway lands	Updated Land Acquisition Strategy to reflect land tenures required to advance regional parks greenways.	Ongoing	Staff have reviewed and included greenway properties.	

Promote and Advocate	Promote the collaborative implementation of <i>Regional Greenways 2050</i>	Regional Greenway Network Implementation Forum	Complete	Metro Vancouver hosted the Regional Greenway Network Implementation Forum on November 15, 2023 to bring together representatives from First Nations, Municipal Jurisdictions, other agencies and partners to share information, build relationships and discuss challenges and opportunities to advance implementation of the Regional Greenway Network.
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Regional Greenway Network Implementation Forum

November 15, 2023
Workshop Summary

February 28, 2024

Table of Contents

Table of Contents.....	i
List of Tables	i
List of Figures	i
List of Appendices	i
1.0 Introduction	2
2.0 Program.....	2
3.0 Summary of Workshop Discussion.....	3
4.0 Exit Survey Results	8

List of Tables

Table 1: Major Program Elements	2
Table 2: Highest Priority Gaps in the Regional Greenway Network	3
Table 3: Biggest Challenges to Implementing the Regional Greenway Network	5
Table 4: New or Improved Approaches that would help advance the Regional Greenway Network.....	6
Table 5: Best Way Metro Vancouver Can Support Implementation of the Regional Greenway Network ..	7

List of Figures

Figure 1: When Should Metro Vancouver Host the Next Regional Greenway Network Implementation Forum?.....	9
Figure 2: What Can Metro Vancouver do to Support Implementation of the Network?.....	9

List of Appendices

Appendix A: Represented Organizations	10
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1.0 INTRODUCTION

On November 15, 2023, Metro Vancouver hosted a Regional Greenway Network Implementation Forum as part of efforts to facilitate the implementation of the *Regional Greenways 2050* plan. This plan is the region’s shared vision for a network of recreational multi-use paths for cycling and walking that connects residents to large parks, protected natural areas and communities to support regional livability. The purpose of the forum was to provide attendees an opportunity to learn about the region-wide system of recreational greenways, develop relationships, and discuss on how best to advance the continued development of the network. Sixty representatives from First Nations, municipal jurisdictions, other government agencies, and partners along with Metro Vancouver staff participated in the forum.

Participants overwhelmingly found the forum to be of value and encouraged Metro Vancouver to hold another forum in two years. They identified high priority greenway segments for completion, ranked them in importance, described the challenges to expansion of the greenway network, and shared their ideas on ways to improve the development of the Regional Greenway Network. When asked what Metro Vancouver can do to facilitate development of the network, a strong message was received that the regional district should increase its promotion and advocacy of regional greenways; continue and enhance its facilitation, coordination, and collaboration activities; and – most notably – support enhanced regional capital funding sources and information.

2.0 PROGRAM

Table 1: Major Program Elements

Major Program Element	Description
Keynote Presentation - Great Blue Heron Way	Elder Ruth Adams and Jesseca Adams, from the Tsawwassen First Nation, shared Elder Ruth’s vision for the Great Blue Heron Way, a proposed greenway to reconnect First Nations between southeastern Vancouver Island, the Lower Mainland and upper Fraser Valley.
Presentation 1 - Sustainable Transportation Research	Craig Sobering, from Metro Vancouver, presented a summary of results from sustainable transportation-focused market research and a student-led survey project in regional parks about cycling to regional and other large natural parks.
Presentation 2 - Spirit Trail	Shane Devine and Steve Carney, from the District of North Vancouver, shared information on the District’s implementation efforts on the Spirit Trail.

Presentation 3 - Pedaling Towards Equity: Analyzing Transportation Access in Metro Vancouver's Cycling Network	Navdeep Chhina & Evan Hammer, from HUB Cycling, presented information on HUB Cycling's work monitoring the state of cycling in the region, equitable access to safe cycling infrastructure, and bicycle highways.
Presentation 4 - Regional Active Transportation Policy & Funding	Rex Hodgson, from TransLink, presented information on TransLink's regional active transportation policy and funding and how it supports expansion of the Regional Greenway Network.
Presentation 5 - Regional Green Network Status	Brian Patterson, from Urban Systems, presented preliminary findings from Metro Vancouver's Regional Greenway Network status update project and discussed barriers and challenges to expanding the network along with opportunities and trends.

3.0 SUMMARY OF WORKSHOP DISCUSSION

This section summarizes the discussion from the forum attendees through the workshop session.

Table 2: Highest Priority Gaps in the Regional Greenway Network as Identified by Participants

Burrard Peninsula Workshop Group (Vancouver, Burnaby & New Westminister)**	
Rank	Trail Segment
V1	Alexander St, Water St, and Cordova St portion of Portside greenway
V2	Portside greenway - Powell Overpass
V3	Kent Ave – Fraser River Trails (Arbutus to Ontario)
V4	University Endowment Lands to North West Marine Drive
V5	BC Parkway – Slocan gap
B1	Central Valley Greenway - Sperling Ave (Multi Use Path) at Burnaby Lake
B2	BC Parkway at Imperial St, Central Blvd, & Jubilee Ave
B3	BC Parkway at Boundary
B4	Fraser Foreshore Trail
B5	Inlet Area/Hastings
NW1	Brunette Fraser Greenway between Spruce St and Canfor Ave
NW2	Brunette Fraser Greenway between Sapperton Landing and Pier Park

South Shore Workshop Group (Delta, Richmond, Tsawwassen First Nation, White Rock)	
Rank	Trail Segment
1	Massey/Deas Tunnel (involves municipal jurisdictions and Ministry of Transportation and Infrastructure)
2	Bridge/overpass connections (In general)
3	BC Ferries causeway (regionally significant)
4	Complete the 'loop' within west Delta (i.e., connect Tsawwassen Lands)
5	Delta South Surrey Greenway
Fraser Valley Workshop Group (Township of Langley & City of Surrey)*	
Rank	Trail Segment
1	Complete waterfront greenway along Crescent Rd and Nicomekl River - Surrey
2	Connect Tynehead/Surrey to the Fort to Fort Trail/Langley riverfront between Hwy 17 and Golden Ears Way (near Hwy 1/Barnston Dr East)
3	Complete connections to Aldergrove Regional Park on 8th Ave and 272 St
4	Complete east-west connection between 168 St and King George Blvd near Fleetwood Park and Bear Creek
Ridge Meadows Workshop Group (Maple Ridge and Pitt Meadows)*	
Rank	Trail Segment
1	Gap along North Shore of the Fraser River from Golden Ears Bridge through Kanaka Creek Regional Park to River Rd at 240 St
2	North Alouette Greenway gap
3	Connection to Golden Ears Park
4	Planned segment along the North shore of the Fraser River between 240 St and River Rd and the Mission municipal boundary
5	Pitt River Greenway gap adjacent to Pitt River Quarry
North Shore Workshop Group (District of North Vancouver)*	
Rank	Trail Segment
1	2nd Narrows to Dollarton Connection (District of North Vancouver)

2	Park and Tilford (City of North Vancouver)
3	Complete Regional Greenway Network in West Vancouver
North East Workshop Group (Coquitlam & Port Moody)*	
Rank	Trail Segment
1	Guildford Greenway
2	St. John's to Barnet Hwy
3	Barnet Hwy
4	Freemont Connector
5	Connections to təmtə́míxʷtən/Belcarra Regional Park, Minnekhada Regional Park, and Widgeon Marsh Regional Park via David Ave
6	Connections to ǻ́éxətəm Regional Park from Fraser River Greenway

* Feedback at this table reflects the perspective of the municipal jurisdictions and other partners that participated in the workshop on November 15, 2023.

** Due to large number of participants, reporting reflects priorities by municipality.

Table 3: Biggest Challenges to Implementing the Regional Greenway Network

Challenge	Description
Funding	Lack of regionally focused capital funding for land acquisition and trail construction. Development Cost Charge funding is focused on denser areas which creates funding gaps in rural/suburban areas. Private investment through upzoning is also focused on urban areas.
Lack of space	A general lack of space for greenway establishment within developed parts of the region. This includes limited land in public ownership, general land competition reflected by high real estate prices, and narrow road right of ways with multiple uses.
Environmental challenges	Wildlife and natural features like streams and wetlands can constrain development.
Physical Barriers	Existing linear infrastructure like railways and highways create barriers to trail development. Challenging topography like ravines, canyons and steep slopes make establishing trails with readily bikeable grades difficult.

Development challenges	Delays in the redevelopment of areas where aspirational routes are identified, the focus of private investment in urban areas over rural areas creates urban/rural disparity.
Permitting	Complex and time-consuming permitting processes and archaeology requirements slow implementation.
Land acquisition	Acquiring tenure for regional greenways can be challenging due to scarcity from historic development patterns and the related high cost of regional real estate.
Public opposition/political will	Public opposition to greenway/bicycle infrastructure development projects can prevent approval by responsible authorities. An example is concern over potential replacement of road side parking by new protected cycling infrastructure.
Lack of public awareness/promotion	Absence of compelling narrative for expansion of network (e.g., promotion, branding, etc.) at the community or neighbourhood scale.
Lack of coordination & collaboration	Better communication between agencies could reduce barriers to greenway development.
Staff capacity	Competing demands on staff time for other projects/programs can limit progress.

Table 4: New or Improved Approaches that would help advance the Regional Greenway Network

Approach	Description
Funding sources, information and approaches	Development of new regionally focused funding sources, and establishment of better sources of information about existing funding resources will improve implementation. Funding partnerships, cost-sharing, match-funding, and corporate sponsorships were all identified as approaches to leverage existing funding sources of greenway development partners.
New legislation	Higher levels of government mandating greenway/bicycle infrastructure development (akin to the Provincial bill on Transit Oriented Development) could act to depoliticize local dialogue.
Streamline permitting processes	The use of streamlined permitting processes could simplify processes and speed greenway development. An example is the use of multi-assessment archaeological permits for high priority areas.
Increased promotion, marketing	Increased promotion of the vision for a Regional Greenway Network to increase public awareness and political buy-in. Potential approaches include: tourism promotion; trail opening events; increased

	communications and storytelling through articles, social media and website; interpretive events with educational opportunities; and videos/animations about implementation progress, successes, visitor experiences and stories, new segment openings, and the overall vision.
Increase research and education	Some areas for increased research and professional practitioner education include: greenway design and construction best practices; green infrastructure / urban drainage infrastructure; and creative use of road allowance.
Leverage other initiatives/look for synergies between projects	Greenway development projects can benefit from alignment with other regional initiatives. For example, climate change resiliency projects like dike raising can provide opportunities to expand greenway networks.
Improved coordination	Because municipal jurisdictions are best positioned to implement regional greenways, cross-boundary linkages between communities can be missed. Improved regional coordination could facilitate inter-municipal regional greenway route connections.
Blueway/water connections	Use blueway/water connections to bridge challenging gaps.
Reconciliation	Synergies between regional greenway development and First Nation communities could promote reconciliation (e.g., Great Blue Heron Way).
Expand use of rapid implementation approach	TransLink developed a set of rapid implementation guidelines to promote expansion of the regional cycling network. Greenway network developers could build on the success of these guidelines and funding sources to speed implementation.

Table 5: Best Way Metro Vancouver Can Support Implementation of the Regional Greenway Network*

Role	Description
Funding	Provide regional greenway specific funding (e.g., TransLink’s Bicycle Infrastructure Capital Cost Share (BICCS) grant). Develop a funding guide for municipal jurisdictions that identifies available grants and deadlines (TransLink example). Explore cost sharing opportunities.
Public education/promotion	Act as a champion for routes. Increase public awareness of the regional greenway network through promotional campaigns, trail storytelling, offering youth programs, identifying allies, building relationships, sharing success stories, and developing visions for sections of trail (e.g., Spirit Trail).

Facilitation between partners	Provide a platform for regional collaboration. This could include promoting communication between jurisdictions through brainstorming activities, and physically connecting greenway providers through events like forums, sub-regional meetings, etc.
Advocacy	Advocate to senior levels of government and other agencies. Could include promoting the development of Provincial and Federal legislation that mandates development of cycling infrastructure as climate change mitigation action.

* This table summarizes feedback from the workshop session. See Figure 2 below for additional information on this topic extracted from the forum exit survey.

4.0 EXIT SURVEY RESULTS

Metro Vancouver hosted a brief exit survey to measure the value of the forum and interest in holding subsequent events. Forty-one of the 44 attendees completed the survey.

Workshop participants were asked if they found the forum valuable. One hundred per cent of respondents answered yes.

The following figures report the feedback received from participants on the frequency forums should be held and what Metro Vancouver should do to support implementation of the Regional Greenway Network.

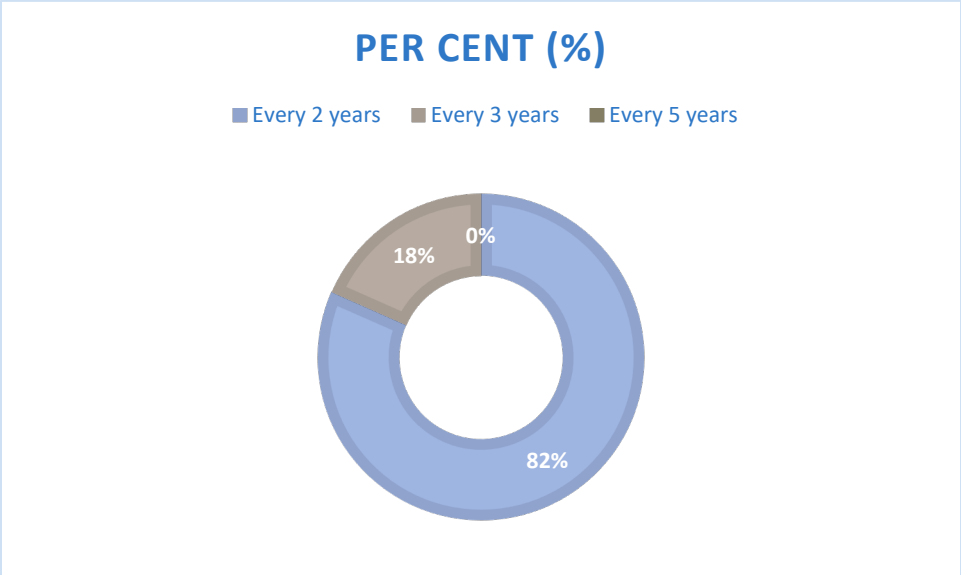


Figure 1: When Should Metro Vancouver Host the Next Regional Greenway Network Implementation Forum?

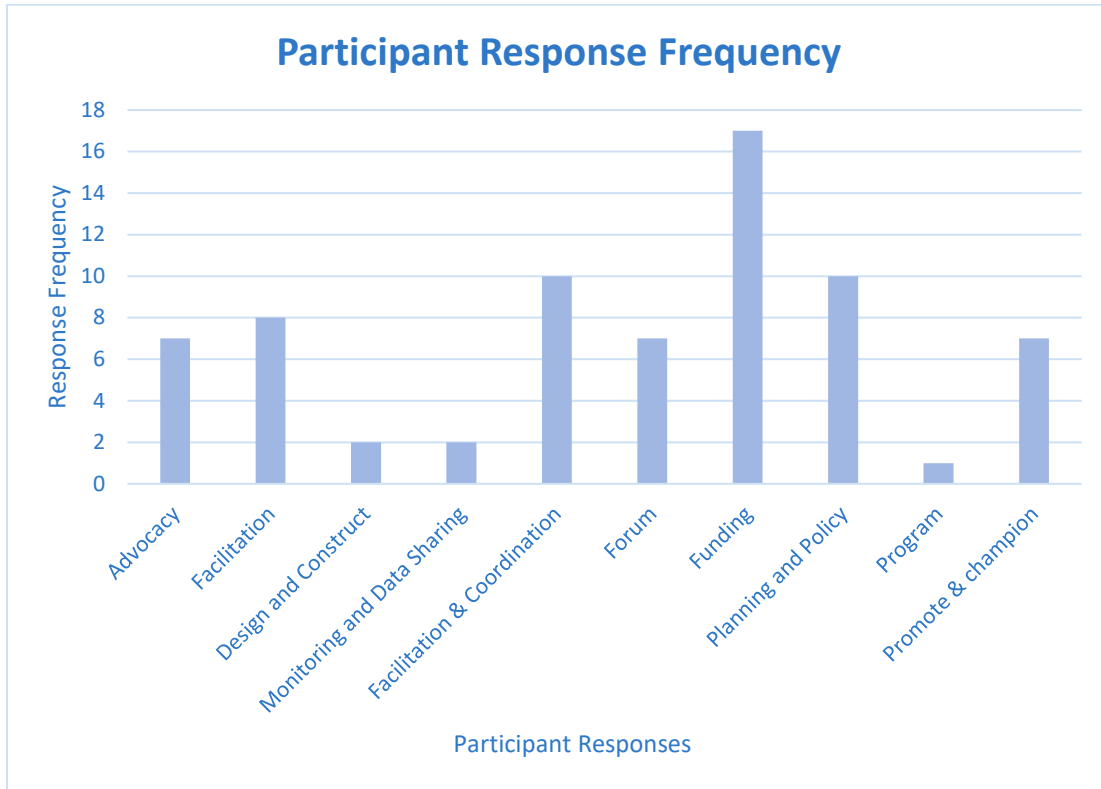


Figure 2: What Can Metro Vancouver do to Support Implementation of the Network?

APPENDIX A: REPRESENTED ORGANIZATIONS

This appendix lists the organizations represented at the Regional Greenway Network Implementation Forum on November 15, 2023.

- Tsawwassen First Nation
- Vancouver
- Richmond
- Ministry of Transportation and Infrastructure (MoTI)
- North Vancouver District
- Burnaby
- HUB Cycling
- White Rock
- Surrey
- TransLink
- Coquitlam
- Trails BC
- Langley Township
- New Westminster
- Port Moody
- Pitt Meadows
- Maple Ridge
- UrbanSystems
- Electoral Area A
- Delta
- University Endowment Lands (UEL)
- Destination British Columbia

sməq̓'a? xeł - The Great Blue Heron Way

November 22, 2023

Sent from scjones@telus.net on behalf of:

Tsawwassen First Nation Elder x̓'asteniya (Ruth Mary Adams)

ruthmaryadams@gmail.com

2401 Falcon Way

Tsawwassen FN, BC V4M 4G4



To:

Jamie Vala

Division Manager, Metro Vancouver Regional Parks,

It was a pleasure to be Keynote speaker at the Metro Vancouver Regional Greenways Network Implementation Forum on November 15 at the Anvil Centre in New Westminster. Thank you for your warm welcome and opportunity to present about the Great Blue Heron Way (GBHW). The presentation included an Ask to endorse the GBHW, it is noted here:

... that the Metro Vancouver Regional District Board endorse the Great Blue Heron Way concept of reconnecting First Nations, via the region's greenway trails system to be part of true and lasting reconciliation.

The Great Blue Heron Way <https://trailsbc.ca/the-great-blue-heron-way-vision-gbhw/> is a Vision to connect First Nations along waterside trails as they once were connected, as a Way to bring Nations together and to share in reconciliation with all communities along its path. It will honour each and every Territory along the Way and include Nation communities as they wish to be involved; perhaps through art and stories, with economic possibility, as well supporting mental and physical health and well-being that helps towards Climate Change Action.

Metro Vancouver Regional Greenways, and local loops to those greenways, can be utilized for everyday travel or exploring via useful routes that overcome both physical gaps and mental barriers. Inclusion of all community ability and knowledge is a Vision of acceptance and learning for people as they wish to live today.

To achieve this Vision needs your welcoming partnership. Please consider this ask in the spirit of Reconciliation.

hay čx̓' q̓ə

Thank you.

Sincerely,

Tsawwassen First Nation Elder x̓'asteniya (Ruth Mary Adams)

and

the Great Blue Heron Way team

Sandra Jones, GBHW scjones@telus.net

Léon Lebrun, Trails BC

Sage Flett-Kruger Okanagan Nation, Trails BC

Amy Lachance TFN, Trails BC

Richard Campbell, Trails BC

Sheryl Atkinson, HUB Cycling Richmond

David Grigg, Infrastructure Advisor to the Great Blue Heron Way team

Roel Schootman, HUB Cycling TFN Delta

Anne Marie Goodfellow, Language and Culture Specialist



Seaside Greenway

Regional Greenways 2050 Plan

IMPLEMENTATION UPDATE

Jamie Vala

Division Manager, Planning and Resource Management

April 3, 2024 Regional Parks Committee Meeting
66361853

metrovancouver

REGIONAL GREENWAYS 2050

- Adopted in 2020
- Focus on collaborative implementation of regional vision
- Includes 5 year action plan



Brunette Fraser Regional Greenway

metrovancouver

2

2023 REGIONAL GREENWAY IMPLEMENTATION FORUM

What can Metro Vancouver do?

- Promotion and Advocacy
- Continued facilitation, coordination and collaboration
- Support enhanced regional capital funding sources and information

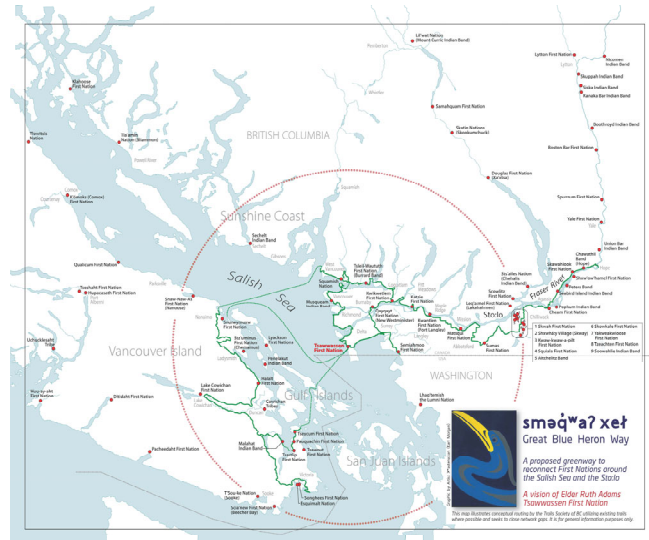


Regional Greenway Network Implementation Forum, Anvil Center

2023 IMPLEMENTATION FORUM

Shared Learnings

- Great Blue Heron Way Vision
- North Shore Spirit Trail
- Sustainable transportation research
- Regional transportation policy and funding
- HUB Cycling activities



Great Blue Heron Way, Elder Ruth Adams, scəwəθən məsteyəxʷ (Tsawwassen First Nation)

REGIONAL GREENWAY NETWORK DATABASE UPDATE & STATUS REPORT

- Initiated summer of 2023
- Goals
 1. Clean / repair database
 2. Develop repeatable process
 3. Determine development progress since 2020
- Challenges
- Full report this year



Operational Status Map (2020), Regional Greenways 2050 Plan



Boundary Bay Regional Park



Questions?

To: Regional Parks Committee

From: Mike Redpath, Director, Regional Parks

Date: March 14, 2024

Meeting Date: April 3, 2024

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

RECOMMENDATION

That the MVRD Board receive for information the report dated March 14, 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 arise, items requested by the Committee, and changes in the schedule.

SILENT TRAILS - A VISION FOR ACOUSTICALLY PROTECTED TRAILS

Urban noise pollution in Metro Vancouver is rising, negatively impacting the region’s mental health, well-being, and natural habitats. To address this issue, Regional Parks is partnering to support the implementation of a *Silent Trails* pilot project to transform select trails in two key regional parks into “silent trails”, where human-made noise is minimized, and the natural soundscape is promoted.

This project is being undertaken by two members of the community, Tara Brown and Kristine Koster. Tara is a dedicated researcher and a Ph.D. candidate at the University of British Columbia. She is undertaking research related to sound pollution and nature trail experiences. Kristine is a certified forest therapy guide and an experienced environmental specialist. The *Silent Trails* pilot project will provide a unique opportunity for visitors to disconnect from the city’s omnipresent noise and immerse in the auditory richness of nature, promoting relaxation and a deepened connection to the natural world.

The *Silent Trails* initiative is grounded in a growing body of research that underscores the role of natural sounds and quietness in human well-being and wildlife conservation. This project recognizes the therapeutic value of quiet natural spaces, offering a solution to enhance the visitor experience and contribute to regional parks' ecological health and integrity.

The project has recently received \$9,000 in funding support from the Metro Vancouver Regional Parks Foundation to designate two *Silent Trails* in Metro Vancouver regional parks. Trails will be designated and branded over a 12-month period.

With this, the project aims to:

1. Develop an enhanced visitor experience, emphasizing tranquility and immersion in natural soundscapes
2. Promote the mental health and well-being benefits of peaceful interactions with nature
3. Preserve and improve the park's ecological integrity by minimizing noise pollution

One trail in Regional Parks West Area and one trail in Regional Parks East Area are in the process of being selected for the pilot program. Trail selection is based on the existing soundscape and opportunities for noise reduction, the trail's accessibility, current programming, and proximity to staging areas.

Signage will be installed to inform visitors about the *Silent Trails* designation and the guidelines for noise reduction. The project's success will be evaluated based on the reduction in noise levels, as measured by sound meter sensors that will be installed, and through feedback from visitors using online surveys. Trail counts from before and after will be compared to see if the initiative attracts additional visitors.

The project complements existing regional parks programs by aligning with Metro Vancouver's *Regional Parks Plan*. Goal 2 of the plan states, "Everyone has the opportunity to benefit from exceptional experiences in nature." The project positions Metro Vancouver at the forefront of innovative urban nature conservation strategies, enhancing visitor experiences, promoting mental health, preserving biodiversity, and advocating for environmental education, thereby improving the quality of life for residents.

COMMUNITY INVOLVEMENT REVIEW UPDATE

Since the establishment of Metro Vancouver Regional Parks in 1967, citizens have demonstrated that they want sustained involvement in the regional park system. Over the years, Regional Parks has maintained many different types of relationships with various individuals and groups across the system as part of a broad Park Network.

In 2021, Regional Parks hired a consultant firm to review its current partnership relationships. The findings of this review were shared with the Regional Parks Committee on September 21, 2022. The review concluded that Regional Parks needed a more flexible approach than its traditional community development model to meaningfully engage a broader community.

The results of the review affirm that community involvement supports Regional Parks in meeting its core goals to protect the natural environment and connect people to nature. It does this by achieving the following outcomes:

- Building social capital: Reaching local communities, including those that are currently under-represented in the regional park system's programs
- Community engagement in planning processes: Providing a source of broad and diverse input from a deeply engaged community to inform Metro Vancouver's work
- Providing capacity: Providing additional physical capacity and knowledge for stewardship projects and public programming

Staff are working to complete an internal framework to guide Regional Parks' work that intersects with the community. The framework will guide the development of a set of tools and processes for staff to better assess community relationships and make decisions on how to allocate resources in order to best serve both Regional Parks and the community.

REGIONAL PARKS UPDATES

Minnekhada Regional Park – Critter Capers Mystery, April 1

One of Regional Parks' most popular programs is back with another mystery – "Critter Capers: The Case of the Scrambled Eggs" takes place on April 1, 2024, at Minnekhada Regional Park. Participants will examine scrambled eggs and sort the eggs back into the correct nests using egg colour, size, nest materials, and other evidence.

Wellness Walks

Time in nature has many benefits including boosting immunity, decreasing depression and anxiety, increasing creativity and focus, and reducing stress. By providing opportunities to connect with and experience nature, regional parks can support mental health. To support young people, one group affected by depression and anxiety, Regional Parks interpreters have designed monthly "Wellness Walks" for teens from the Fraser Health Adolescent Day Treatment Program.

Creative BC's REEL Green™ Earth Day Challenge and the Metro Vancouver Regional Parks Foundation provided Wellness Walk support and funding.

eDNA Studies to Inventory Sensitive Species

Metro Vancouver Regional Parks uses environmental DNA (eDNA) sampling to inventory sensitive species in regional parks. This technique uses naturally occurring genetic materials that are shed from organisms in their habitat to identify species using those areas. Three studies took place in 2023.

- At Capilano River Regional Park, staff worked with volunteers to test water from restored ponds and nearby streams. Coastal tailed frog (*Ascaphus truei*) eDNA was found in Houlgate Creek, a tributary to the Capilano River.
- At Pacific Spirit Regional Park, staff worked with volunteers from the Pacific Spirit Park Society to test a newly developed primer for Oregon fairy shrimp (*Eubranchipus oregonus*). All five ponds known to have fairy shrimp tested positive.
- Also at Pacific Spirit Regional Park, eDNA sampling was conducted at several streams to determine the presence of coho salmon (*Oncorhynchus kisutch*) and coastal cutthroat trout (*Oncorhynchus clarki clarki*). Coho eDNA was detected in streams where restoration has taken place, but it was also detected in unexpected places. In particular, there was very strong eDNA evidence in Cutthroat Creek, a small forested stream previously thought to be inaccessible to coho.

The data collected provides valuable information to aid in park management and inform future restoration and enhancement projects.



Natural resource management staff lead volunteers in conducting eDNA sampling at Capilano River Regional Park

Regional Park at Cape Roger Curtis – Project Update

At the January 10, 2024 Regional Parks Committee meeting, the report titled “Regional Park at Cape Roger Curtis – Project Update” provided an update to the Metro Vancouver Board on the park planning, rezoning and Official Community Plan (OCP) amendment processes for the proposed regional park at Cape Roger Curtis on Bowen Island. (A link to the report is included for reference.)

The report included a letter Metro Vancouver transmitted to Bowen Island Municipality on December 1, 2023 (Attachment 2), to request formal feedback on the park concept and technical studies, provide detailed responses to the Islands Trust Executive Committee determination of non-compliance with the Islands Trust Policy Statement, respond to Bowen Island Municipality’s conditional requirements for rezoning approval, and ultimately request clarity on the next steps in the rezoning and OCP amendment process. The letter is included in the agenda package for reference.

A response letter from Bowen Island Municipality was received on February 23, 2024. The letter is included as Attachment 3 for reference. Staff are following up with Bowen Island Municipality and Island Trust to seek clarity on the status of the rezoning and OCP amendment process and will report back to the MVRD Board with an update.

ATTACHMENTS

1. Regional Parks Committee 2024 Work Plan
2. Letter from Metro Vancouver to Bowen Island Municipality, dated December 1, 2023
3. Letter from Bowen Island Municipality to Metro Vancouver, dated February 23, 2024

REFERENCES

1. [REEL Green Earth Day Challenge](#)

2. [Metro Vancouver Regional Parks Foundation](#)
3. [Pacific Spirit Park Society](#)
4. Metro Vancouver Regional Parks Committee [January 10, 2024 meeting – the Committee received the report titled “Regional Park at Cape Roger Curtis – Project Update”](#)

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Regional Parks Committee 2024 Work Plan

Report Date: March 14, 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	
2023 Final Year End Financial Performance Results Review	Pending
2024 Financial Performance Reporting and Annual Forecast #1	Pending
Regional Parks Financial Access Program	Pending
Cultural Planning and Cooperation Agreement Update	Pending
Regional Greenways Plan Implementation Updates	Pending
Regional Parks Annual Report 2023	Pending
Metro Vancouver Regional District Filming Update	Pending
Metro Vancouver Regional District Consumption of Liquor in Regional Parks Bylaw	Pending
Metro Vancouver Regional District Regional Parks Regulation Amendment Bylaw	Pending
Regional Parks Community Involvement Update	Pending
Regional Parks Regulation and Compliance Program Update	Pending
Cape Roger Curtis Update	Pending
Pacific Spirit Regional Park - Wreck Beach Update	Pending
Kiosk Information Panels Review	Pending
Natural Resource Management Program Stewardship Program Update	Pending
Metro Vancouver Regional Parks Foundation Update	Pending
Natural Asset Management Update	Pending
Regional Parks Committee Tour of Regional Parks	Pending
3rd Quarter	
Draft 2025 - 2029 Capital Plan Overview	Pending
2024 Financial Performance Reporting and Annual Forecast #2	Pending
Metro Vancouver 10 Year Salmon Enhancement Action Plan Update	Pending
Regional Parks Building Strategy	Pending
Centennial Beach Concession Building / Services Review	Pending

Kanaka Education and Environmental Partnership Society (KEEPS) Contribution Agreement and Presentation	Pending
Pacific Spirit Park Society Contribution Agreement and Presentation	Pending
4th Quarter	
2025 - 2029 Five Year Financial Plan and 2025 Budget and Annual Rates	Pending
2024 Financial Performance Reporting and Annual Forecast #3	Pending
Regional Parks Development Cost Charge Program Update	Pending
MVRD Fees and Charges Amendment Bylaw	Pending
Regional Parks Asset Management Plan	Pending
Climate Action Strategy for Regional Parks	Pending
Repeal and Replace Regional Parks Regulation Bylaw	Pending
Sponsorship in Regional Parks Policy	Pending
Metro Vancouver Regional Parks Foundation Update	Pending
Regional Parks Public Programming Strategy Implementation Update	Pending

Status = Pending, In Progress or Completed

Regional Parks
Tel. 604-451-6693 or via Email
jeffrey.fitzpatrick@metrovancouver.org

December 1, 2023

File: PA-02-01-22-PC00061

Daniel Martin, Manager of Planning and Development
Bowen Island Municipality
Bowen Island Municipal Hall
981 Artisan Lane
Bowen Island, BC V0N 1G2
VIA EMAIL: dmartin@bimbc.ca

Dear Daniel Martin:

Response to BIM and Islands Trust Executive Committee

I am writing regarding the proposed regional park at Cape Roger Curtis in Bowen Island Municipality.

This letter is in response to the October 17, 2023 Bowen Island Municipality (**BIM**) letter requesting amendments to Metro Vancouver's rezoning and Official Community Plan (**OCP**) amendment application (**Application**) to comply with the Islands Trust Policy Statement Directive Policies prior to consideration of second reading. It also responds to the conditional requirements for approval of the Application, as adopted by BIM Council on July 10, 2023.

It is Metro Vancouver's position that the current park proposal as reflected in the Application aligns with the Islands Trust Policy Statement (**ITPS**). Prior to consideration of this matter by the Islands Trust on August 25, 2023, this was stated to be the position of BIM and Islands Trust staff as well.¹

The process and rationale for the Islands Trust determining the Application to be non-compliant, and the subsequent BIM request to Metro Vancouver for an amended Application, are insufficiently clear for Metro Vancouver to respond effectively. We are accordingly seeking more information on the specific areas of concern and the materials on which those concerns are based, in accordance with, among other things, the Bowen Island Municipality – Islands Trust Protocol Agreement and Islands Trust policies, and as required to provide Metro Vancouver a reasonable opportunity to understand and address concerns raised.

¹ See briefing note prepared by the Islands Trust Director of Planning Services and included in the Islands Trust Executive Committee Agenda Package.
64263147

In addition, regarding BIM conditional requirements for approval of the Application, we note that the proposed park concept plan includes extensive investment in the park and community to ensure a sustainable, well-managed park is established incrementally over time. A number of the BIM conditional requirements for application approval are already included in the park concept. Others are outside Metro Vancouver's mandate to provide in exchange for approval of a modest, seasonal, low impact tent campground within a regional park.

This letter and attachments clarify background information, provide detailed responses to the Islands Trust Executive Committee comments and BIM conditional requirements, and ultimately request that BIM provide clarity on the next steps in the Application process.

Background

The proposed regional park at Cape Roger Curtis presents a generational opportunity to protect an ecologically and culturally rich landscape in perpetuity, with significant ecological, climate resilience, social, and health benefits to local and regional visitors, the community and wider region.

The Application contemplates the development of 100 seasonal, low impact, tent campsites within the proposed park. Of those, over half (52) would be dedicated to walk/bike-in/shuttle access camping, a third (33) could be accessed by a single-vehicle for accessibility, 3-5 group tent camps would be available to youth and community groups, and 10 tent cabins would provide an opportunity for people without camping equipment to visit. No trailers or motorhomes will be permitted in the proposed park.

The proposed park will be delivered in three distinct phases over seven years, with approximately one-third of overall camping provision in each phase to allow for careful monitoring and adaptive management. Metro Vancouver is willing to enter into a Section 219 covenant in relation to the proposed phasing plan.

A park welcome centre in Crippen Regional Park (Snug Cove) and an electric shuttle bus service to the proposed regional park at Cape Roger Curtis will be established in advance of the park opening. A park reservation system and capacity management tools will ensure visitation is sustainable and low impact. Significant wildfire risk management and response measures will be established.

The site's ecological values will be protected and enhanced, and previously disturbed areas will be restored to a natural condition. All park amenities will be located in areas previously cleared for residential development.

Sustainable access to the park will be prioritized. A quiet, pedestrian-focused experience will be created by limiting vehicles, converting sections of existing road to public space, and establishing trail connectivity throughout the site. Environmental programming, education, stewardship and restoration will ensure ecological resiliency and community participation.

Metro Vancouver is working with local indigenous groups to explore opportunities to work collaboratively over the long term, and to incorporate traditional and current knowledge into park planning and management.

The proposed park protects 97-hectares of sensitive ecosystems – more than six-times the area currently protected under existing zoning and covenants. Under the current municipal zoning, the density limits for Rural Residential 1 (RR1) allows for one dwelling with accessory units, and permits short term rental use of both dwellings, and also permits B&B accommodation as part of home occupation. Future subdivision or intensification of land use is also possible.

Metro Vancouver has provided the following studies and supporting information in relation to the rezoning and OCP application including the following:

1. Environmental Overview; Diamondhead Consulting (August 2022)
2. Maps and Drawings; Metro Vancouver (January 2023)
3. Project Overview for OCP Amendment and Rezoning; Metro Vancouver (January 2023)
4. Draft Land Use Plan; Metro Vancouver (February 2023)
5. Ecological Background; Metro Vancouver (March 2023)
6. Draft Concept and Program; Metro Vancouver (June 2023)
7. Approaches to Implementation, Visitation, Operations and Access; Metro Vancouver (March 2023)
8. Trip Generation Review; Bunt and Associates (March 2023)
9. Visitor Use Management Plan; Metro Vancouver (May 2023)
10. Emergency Management Overview; Metro Vancouver (June 2023)
11. Phasing Summary; Metro Vancouver (June 2023)
12. Transportation Impact Assessment; Bunt and Associates (June 2023)
13. Water Study Analysis Results; Water Street Engineering (June 2023)

Metro Vancouver has received staff comments and feedback on the Transportation Impact Assessment, however no formal staff or advisory committee comments have been received on the remaining technical studies or park concept. Additionally, confirmation on the next steps in the rezoning process is required.

Rezoning and OCP Amendment Application – Islands Trust Referral

By letter dated October 17, 2023, Metro Vancouver was advised of BIM Council's resolution on October 16, 2023 requesting an amended OCP and rezoning application to comply with the Islands Trust Policy Statement Directive Policies prior to consideration of second reading.

Although the letter included reference to specific policies considered to be at odds with the Application, the basis for the Islands Trust's determinations is not clear. A detailed discussion of Metro Vancouver's response to identified ITPS items of concern is included in Attachment 1. Key points are summarized below.

- In reviewing the Islands Trust Executive Committee's agenda, meeting minutes and comments, it seems the Executive Committee did not receive copies of all reports prepared concerning the submission; additionally, some documents were linked and not included in the agenda package. Several of the Executive Committee comments included inaccurate statements related to projected visitation, water availability, park access, phasing and

ecological protection in determining non-compliance with the ITPS, suggesting the Committee may not have had access to or reviewed all available information in making its determination.

- Islands Trust Policy 1.3.1 (Policy Statement Implementation) 4. states that "*as interpreted by the courts, "contrary to or at variance with," means that there is an absolute and direct collision between the local trust committee or island municipality bylaw and the Policy Statement.*" Further, Sections 3.6 and 3.7 of the BIM – Islands Trust Protocol Agreement require the Islands Trust to provide clear reasons for the return or refusal of an OCP amendment or rezoning bylaw and "*directions as to changes to the bylaw that would be required for approval*". The information provided to Metro Vancouver to date does not identify absolute or direct collisions with the ITPS or directions on associated, necessary application changes.
- On the referral checklist for the Islands Trust, a number of items were marked as "N/A", presumably since no direct conflict between the Application and the ITPS had previously been identified. In many cases, however, there are Metro Vancouver reports or other information available to demonstrate compliance with ITPS policies if in fact those policies are determined to apply. It is unclear how this issue should be addressed.

In light of the foregoing, Metro Vancouver requests the following:

1. Confirmation as to whether BIM and Islands Trust staff engaged in early communications and attempts to resolve concerns about proposed Bylaws No. 608 and 609, per Section 3.12 of the Protocol Agreement and, if so, additional information on ITPS policies identified in those discussions as potentially inconsistent with or at variance to the Application and how such concerns were addressed in the submission to the Islands Trust.
2. Confirmation of specific reports and other information provided to the Islands Trust Executive Committee for their assessment of the Application on August 25, 2023.
3. For each ITPS policy identified in the Islands Trust decision letter, a clear explanation of the specific elements of the proposed Application/Bylaws that are in "absolute and direct collision" with the ITPS, per Islands Trust Policy 1.3.1, and confirmation of which staff reports, correspondence or other materials were considered by the Islands Trust in arriving at that conclusion.
4. Clear direction on those changes to the Application/draft Bylaws that are required for Islands Trust approval, per Sections 3.6 and 3.7 of the BIM – Islands Trust Protocol Agreement, including relevant information from the meeting held between BIM and the Islands Trust pursuant to Section 14.3(c) of the BIM Letters Patent.
5. Staff's assessment of which concerns identified in the Islands Trust decision letter and marked "N/A" on the initial Islands Trust Policy Statement Directives Check List could be addressed with available reports and materials, and information on the process and timing for revisiting those items with the Islands Trust.
6. Formal comments from BIM on technical studies, the concept and other information provided to date, and confirmation if any additional technical reports are required. Metro Vancouver acknowledges its receipt of BIM staff comments and feedback on the Transportation Impact

Assessment, however no formal staff or advisory committee comments have been received on the remaining technical studies or park concept.

7. Confirmation and a copy of BIM's notification to the Minister of Municipal Affairs pursuant to Section 15.1 of the BIM Letters Patent and the Islands Trust's letter dated August 25, 2023, including any advice or direction received from the Minister.
8. Confirmation of BIM's next steps and timeline in advancing the Application.

BIM Conditional Requirements for Rezoning and OCP Amendment Approval

At the BIM Committee of the Whole meeting on June 14, 2023, BIM Council identified conditional requirements for approval of the rezoning and OCP amendment application. Attachment 2 outlines Metro Vancouver's response to these conditions. This response was presented to the MVRD Regional Parks Committee at its meeting on October 5, 2023.

While some of the conditional requirements are included in the proposed park concept, and represent significant investment and a commitment to ongoing partnership, others fall outside of Metro Vancouver's mandate and ability to provide in exchange for municipal rezoning and OCP amendment approval of seasonal, low impact tent camping in a regional park.

Next Steps

Metro Vancouver has provided a fulsome rezoning and OCP amendment application in support of a proposal for low impact, carefully phased and managed, seasonal tent campsites as part of an initiative to conserve an ecological significant landscape in perpetuity.

It is Metro Vancouver's position that the current park proposal as reflected in the Application aligns with the Islands Trust Policy Statement. The process and rationale for the Islands Trust Executive Committee determination of non-compliance, and subsequent BIM request for an amended application, are insufficiently clear for Metro Vancouver to respond effectively.

Metro Vancouver is accordingly requesting that BIM provide clarity on the Islands Trust determination process and next steps to advance the Application, with reference to the applicable policies, requirements, guidance and procedures outlined in the Islands Trust Policy Statement and the BIM – Islands Trust Protocol Agreement. Further, Metro Vancouver is requesting feedback on the park concept and technical reports provided in July 2023, and clarity on the next steps in the municipal rezoning and OCP amendment process.

Sincerely,



Jeffrey Fitzpatrick
Division Manager, Parks Design & Development

JF/MR/jf

cc: Stefan Cermak, Director, Planning Services, Islands Trust
Liam Edwards, Bowen Island Municipality CAO
Ravi Chhina, Deputy CAO Operations, Metro Vancouver
Mike Redpath, Director, Regional Parks, Metro Vancouver
Lydia Mynott, Landscape Architect, Regional Parks, Metro Vancouver

Attachments:

1. Islands Trust Executive Committee Comments - MV Response
2. Bowen Island Municipality Conditional Requirements for OCP/Rezoning Approval – MV Response

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Islands Trust Executive Committee Comments – Summary of Executive Committee Considerations:			
ITPS #	ITPS Text	Executive Committee Comments	Metro Vancouver Response
4.4.2	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address measures that ensure neither the density nor intensity of land use is increased in areas which are known to have a problem with the quality or quantity of the supply of freshwater, water quality is maintained, and existing, anticipated and seasonal demands for water are considered and allowed for.	Marked as not applicable in staff assessment - trustees felt that water is an issue in that area based on public feedback and reports indicating issues with water in that area.	<p>As noted below and under response to 5.2.5 the proposed park represents a reduction in the density of land use as compared to uses permitted under the existing zoning and OCP. Accordingly, ITPS policy 4.4.2 does not seem to apply, as noted in the checklist.</p> <p>Nonetheless, a technical memorandum Water Study Analysis Results (Water Street Engineering – June 2023) has been submitted and summarizes:</p> <ul style="list-style-type: none"> • Drinking water requirements of the proposed park are equivalent to what would be required for development permitted under existing zoning and OCP. • Water requirements of the proposed park are equivalent to what would be required for development permitted under existing zoning and OCP. • Drinking water availability is sufficient. <p>Furthermore, as a non-domestic user, Metro Vancouver will be required to license groundwater. This is not required under the existing Rural Residential (RR1) zoning and domestic land use. This effectively places additional requirements on Metro Vancouver to manage water use during droughts.</p> <p>The proposed park includes extensive ecological restoration and protection to support groundwater recharge and health aquatic ecosystems. Approximately 50% of the Huszar Creek Watershed will be part of the protected parkland.</p> <p>It is unclear whether the above report and information (and any other relevant materials) were received by the Islands Trust Executive Committee and what other materials were relied upon by the Islands Trust in making their determination in respect of this policy item. Please advise on next steps to clarify the application of ITPS policy 4.4.2 and, if it does apply, the direct conflict with the Application and required action to address that conflict.</p>

<p>5.2.3</p>	<p>Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address policies related to the aesthetic, environmental and social impacts of development.</p>	<p>Aesthetic and social impacts - not properly addressed.</p> <p>Social impact - very specific concerns from long term residents about many aspects not sufficiently addressed. Fails test of social impacts for a project of this size.</p>	<p>The creation of the regional park through proposed BIM Bylaws No. 608 and 609 will protect 97-hectares of sensitive ecosystems in perpetuity. The ecologically sensitive landscape is currently zoned as Rural Residential 1 (RR1). The existing zoning permits one dwelling with accessory dwelling units, and allows for short-term rental use of both dwellings. It also permits B&B accommodation as part of home occupation.</p> <p>The proposed park includes seasonal low impact tent camping, and is proposed to be phased in over approximately seven years with ongoing adaptive management. Phasing, capacity management, ecological restoration, visitation transportation and access strategies have been prepared which seek to address the issues raised by long term residents.</p> <p>Volunteer conservation opportunities will be made available to people interested in contributing to park stewardship. The proposed park will provide Bowen Island residents with access to trails, open space and healthy ecosystems which will support quality of life.</p> <p>In respect of this item, please confirm with more specificity those social and aesthetic aspects of the Application found to directly and absolutely collide with the ITPS, the materials relied upon by the Islands Trust in reaching their conclusion, and the information provided to the Islands Trust to inform their decision.</p>
<p>5.2.4</p>	<p>Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address any potential growth rate and strategies for growth management that ensure that land use is compatible with preservation and protection of the environment, natural amenities, resources and community character.</p>	<p>Marked as not applicable in staff assessment - concern about compatibility with environment and community character.</p>	<p>The proposed park represents a reduction in the density of land use compared to uses permitted under the existing zoning and OCP, and contemplates the preservation of 97-hectares in perpetuity, as further described below. Accordingly, it seems clear that the growth-related issues cited in ITPS policy 5.2.4 do not apply to the Application, as noted in the checklist.</p> <p>The existing Bowen Island community natural character includes natural areas such as steep slopes and hillsides, rural and marine areas and forests. These character areas have many different land uses such as municipal, regional and provincial parkland, resource extraction areas, in addition to residential, commercial, short-term rental accommodation and event facilities, including camps and retreats.</p> <p>The existing zoning permits one dwelling with accessory dwelling units, and allows for short-term rental use of both dwellings. It also permits B&B accommodation as part of home occupation.</p> <p>Under the existing RR1 zoning, 81.59 ha (84%) of the site area is unprotected and at risk of being subject to clearing, disturbance and development. Of this area, 59 ha is merchantable timber.</p>

			<p>The proposed BIM Bylaws No. 608 and 609 will protect 97 ha of sensitive ecosystems in perpetuity ensuring preservation and protection of the environment, natural amenities, resources and community character.</p> <p>Proposed low impact seasonal tent camping will be located within areas previously cleared for residential development and operated seasonally. Other areas that have been cleared will be restored.</p> <p>Ecological connections will be enhanced and natural resources will be managed, monitored, maintained and enhanced by trained park staff.</p> <p>Volunteer conservation opportunities will be made available to people interested in contributing to park stewardship.</p> <p>The proposed park will provide Bowen Island residents with access to trails, open space and healthy ecosystems which will support quality of life.</p> <p>The proposed park will be slowly phased in over approximately seven years to moderate change and allow for adaptive management.</p> <p>If ITPS policy 5.2.4 does apply, the above measures in our view address the aim of the policy item and any concern about compatibility with environment and community character. Please advise whether the above (or other) information was received by the Islands Trust Executive Committee to demonstrate consistency between Metro Vancouver’s Application and ITPS policy 5.2.4. If not, what is the process for addressing this item? What comprises the direct collision in this case and on what materials did the Islands Trust rely in making their determination?</p>
<p>5.2.5</p>	<p>Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address means for achieving efficient use of the land base without exceeding any density limits defined in their official community plans.</p>	<p>Marked as not applicable in staff assessment - campground capacity of 450 individuals exceeds density limits.</p>	<p>The proposed BIM Bylaws No. 608 and 609 represent a <u>reduction</u> in built form density limits from those currently permitted under the RR1 zoning. Accordingly, in our view ITPS policy 5.2.5, related to efficient use of the land base without over-densifying the development, is not applicable to the Application.</p> <p>The building and development density of the proposed park will include minimal built facilities (washrooms, park operations building with emergency equipment storage). Proposed buildings will adhere to municipal regulations concerning building siting and height.</p> <p>The Islands Trust Executive Committee has reviewed proposed BIM Bylaws No. 608 and 609 based on 450 – 465 people attending the campground daily. It is not clear where this figure derives from. Metro Vancouver estimates peak campground visitation in August to</p>

			<p>be approximately 260 individuals, in seven years, after the final phase of park development (See <i>“Approaches to Implementation, Visitation, Operations and Access”</i> Metro Vancouver, March 2023). The peak visitation estimate is based on an average campsite occupancy of 95%-100%, but considers average camping party sizes. The facility would only be open May – October.</p> <p>Existing zoning (RR1) allows for one dwelling with accessory units and permits short-term rental use of both dwellings. It also permits B&B accommodation as part of home occupation. Future subdivision or intensification of land is possible.</p> <p>Please confirm whether the above (or other) information was received by the Islands Trust Executive Committee to demonstrate consistency between Metro Vancouver’s Application and ITPS policy 5.2.5. If not, and if policy 5.2.5 does apply, what is the process for addressing this item? Please advise what materials were relied upon by Islands Trust in making their determination in respect of this policy item and clarify the direct collision identified.</p>
<p>5.5.4</p>	<p>Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the location and type of recreational facilities so as not to degrade environmentally sensitive areas, and the designation of locations for marinas, boat launches, docks and anchorages so as not to degrade sensitive marine or coastal areas.</p>	<p>Marked as not applicable in staff assessment – reports provided by the regional district about environmental sensitive areas means this is relevant.</p>	<p>The existing municipal zoning is RR1 which allows for one dwelling with accessory units, and permits short-term rental use of both dwellings. It also permits B&B accommodation as part of home occupation.</p> <p>At present, 15.41 ha (16%) of the proposed park is protected through existing covenants established for the most environmentally sensitive areas. Under the existing zoning areas outside the covenants, 81.59 ha (84%) of the site area is subject to clearing, disturbance and development. Of this area, 59 ha is merchantable timber.</p> <p>The creation of the regional park through BIM’s proposed Bylaws No. 608 and 609 would protect 97 ha of sensitive ecosystems in perpetuity. Metro Vancouver would dedicate the area as regional parkland. Metro Vancouver’s Natural Resource Management Framework provides strategic direction for managing natural resources within regional parks and park planning. It is guided by the principles of ecosystem-based management, adaptive management, the precautionary principle and collaboration.</p> <p>Development of all park (recreational) facilities will be within areas previously cleared for residential or resource development. Environmentally sensitive areas will be protected and other previously cleared areas will be restored to natural condition. The proposed BIM Bylaws No. 608 and 609 do not contain plans for marinas, boat launches, docks or anchorages.</p> <p>Metro Vancouver will restrict access to sensitive lands including covenant areas by enforcing park bylaws with uniformed staff, and educating park visitors through</p>

			<p>stewardship, interpretation and outreach.</p> <p>Please confirm whether the above (or other) information was received by the Islands Trust Executive Committee to demonstrate consistency between Metro Vancouver’s Application and ITPS policy 5.5.4. If not, what is the process for addressing this omission? Please advise what materials were relied upon by the Islands Trust in making their determination in respect of this policy item and the identified direct collision(s) between ITPS policy 5.5.4 and the Application.</p>
<p>5.5.6</p>	<p>Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the identification and designation of areas for low impact recreational activities and discourage facilities and opportunities for high impact recreational activities.</p>	<p>Disagree with interpretation that 100 campsites are low impact.</p> <p>460 people getting off ferries on a Friday to go camping is a huge impact. Narrow road, no bike lanes, and at other end of the island to the ferry terminal.</p>	<p>The creation of the regional park through BIM’s proposed Bylaws No. 608 and 609 will protect 97 ha of regionally significant sensitive ecosystems in perpetuity and provide low-intensity passive outdoor recreation opportunities.</p> <p>The proposed park and campground will be owned and operated seasonally by the regional district and non-commercial (similar to Descanso Bay Regional Park Campground on Gabriola Island). No high impact recreational activities are proposed for the site.</p> <p>The proposed park includes tent camping facilities in areas previously cleared for residential development. Of those, over half (52) would be dedicated to walk/bike-in/shuttle access camping, a third (33) could be accessed by a single-vehicle for accessibility, 3-5 group tent camps would be available to youth and community groups, and 10 tent cabins would provide an opportunity for people without camping equipment to visit. No trailers or motorhomes will be permitted in the proposed park.</p> <p>The Islands Trust Executive Committee has reviewed proposed BIM Bylaws No. 608 and 609 based on 450 – 465 people attending the campground daily. It is not clear where this figure derives from. Metro Vancouver estimates peak campground visitation in August to be approximately 260 individuals, in seven years, after the final phase of park development (See “<i>Approaches to Implementation, Visitation, Operations and Access</i>” Metro Vancouver, March 2023). The peak visitation estimate is based on an average campsite occupancy of 95%-100%, but considers average camping party sizes. The facility would only be open May – October.</p> <p>The assessment that 460 people will disembark the ferry on a single day is inaccurate. The Traffic Impact Assessment (TIA) assesses and summarizes net vehicle trip generation against what can be expected under existing land use zoning (conservative estimate based on 24 single-family homes, not the maximum permitted land use). The TIA assesses the net impact as a reduction of 163 vehicle trips during peak day and an increase of 15 vehicle trips in the pm peak, an overall reduction in trip rate.</p> <p>63 of 466 While impacts of proposed BIM Bylaws No. 608 and 609 in creating a proposed park</p>

			<p>are assessed to be less than the existing permitted land use, Metro Vancouver has committed to the following mitigations:</p> <ul style="list-style-type: none"> • Utilizing existing park facilities at Crippen Regional Park in Snug Cove to create a park information centre and shuttle pickup location. • Providing an electric shuttle bus, operated by Metro Vancouver, will provide sustainable transportation directly to the park from the ferry. The shuttle bus will be in place when the park opens. • Working collaboratively with Bowen Island Municipality to secure grant funds to advance the construction of the Cross Island Greenway (part of the Regional Greenway Network). • Implementing visitor management systems including – parking restrictions, visitor reservations, and full-time uniformed staff enforcing park bylaws. Campground reservation system will direct vehicle access visitors to off peak ferry travel days/times. • Phasing delivery, all park amenities, including camping facilities, will be phased in over approximately seven years to allow for adaptive management. <p>To what extent were the reports listed on page 3 of Metro Vancouver’s letter dated December 1, 2023 (and other relevant materials) received by the Islands Trust Executive Committee? Please confirm/provide copies of the specific materials relied upon by the Islands Trust in making their determination in respect of this policy item. We note the Islands Trust briefing note from staff cited examples of other campsites in the Islands Trust area and confirmed that one campsite per hectare is not high impact (camping and hiking were said to be low impact, while sports activities are typically considered higher impact). Please also clarify the absolute and direct collision between ITPS and the Application and provide guidance on addressing that collision.</p>
<p>5.5.7</p>	<p>Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the planning for bicycle, pedestrian and equestrian trail systems.</p>	<p>Address planning for bikes, pedestrian and trail systems - rezoning suggests traffic to campground via those means, but nothing in the plans say that when campground opens there will be any new paths or bike lanes.</p> <p>Not realistic to think people will walk 12</p>	<p>The directive policy refers to OCPs and regulatory bylaws. Metro Vancouver is proposing a comprehensive plan for pedestrian, cycling and equestrian trail systems within the park.</p> <p>Metro Vancouver has also committed to the following transportation and access programs:</p> <ul style="list-style-type: none"> • Metro Vancouver will renovate an existing park building (Seaside Cottage II) in Crippen Regional Park (Snug Cove) to create a park information centre and shuttle pickup location. • An electric shuttle bus, provided by Metro Vancouver, will establish sustainable transportation directly to the park, from the ferry. The shuttle bus will be in place when the park opens. • Metro Vancouver will work collaboratively with the municipality to secure grant funds to advance construction of the Bowen Island Municipality Cross Island

		<p>km from the ferry to the campground.</p> <p>Concern about safety of cyclist or hikers walking or cycling to the campground on the narrow roads.</p>	<p>Greenway (part of the Regional Greenway Network).</p> <ul style="list-style-type: none"> All park amenities will be phased and subject to a Section 219 covenant to allow for adaptive management. <p>Metro Vancouver manages Crippen Regional on Bowen Island (220 ha). The park provides significant value and benefits to local residents including trails, open space, access to nature, conservation and stewardship, heritage buildings and landscapes, a riding ring, memorial garden, and public toilet facilities. It is inaccurate to assume the park is the primary destination for all off Island visitors who pass through the park during their time on Bowen Island. Rather, Crippen is a cherished park that is closely intertwined with Snug Cove, and the broader trail network that visitors and local residents use to move around and enjoy the community as a part of daily life.</p> <p>The above features of the Metro Vancouver Application are directly aligned with ITPS policy 5.5.7. To what extent was the above information (and other relevant materials) received by the Islands Trust Executive Committee? Please confirm/provide copies of the specific materials relied upon by the Islands Trust in making their determination in respect of this policy item. Please also clarify the absolute and direct collision identified between ITPS and the Application and provide guidance on addressing that collision.</p>
5.6.2	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the identification, protection, preservation and enhancement of local heritage.	No evidence of support from Sk̓wxwú7mesh (Squamish) First Nation.	<p>Metro Vancouver has engaged local Indigenous groups throughout the planning process for this project. In particular, Metro Vancouver is working carefully with Sk̓wxwú7mesh (Squamish) First Nation to explore opportunities to work closely on the park, over the long term.</p> <p>Opportunities include, but are not limited to, cooperative planning, land management, cultural resource management, art, programing and interpretation, youth programming, and more.</p> <p>Please clarify the direct collision between the Application and ITPS policy 5.6.2 and advise on any specific requirements for demonstrating support. To what extent was the above information (and other relevant materials) received by the Islands Trust Executive Committee?</p>
5.6.3	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the preservation and protection of the heritage value and character of	No evidence of support from Sk̓wxwú7mesh (Squamish) First Nation.	<p>Opportunities include, but are not limited to, cooperative planning, land management, cultural resource management, art, programing and interpretation, youth programming, and more.</p> <p>More broadly, the proposed park will protect, in perpetuity, an ecologically and culturally sensitive landscape which is currently zoned for the development of large single family residential developments.</p> <p>65 of 466 Under existing zoning, the land can be developed with very limited environmental</p>

	<p>historic coastal settlement patterns and remains.</p>		<p>conservation or cultural resource management.</p> <p>Metro Vancouver has extensive experience managing cultural resources and working closely with First Nations on land management throughout the region.</p> <p>Please clarify the direct collision between the Application and ITPS policy 5.6.3, and advise on any specific requirements for demonstrating support. To what extent was the above information (and other relevant materials) received by the Islands Trust Executive Committee?</p>
<p>5.7.2</p>	<p>Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address economic opportunities that are compatible with conservation of resources and protection of community character.</p>	<p>A campground that allows 460 campers changes the character of the community.</p>	<p>ITPS policy 5.7.2 relates to addressing economic opportunities that are compatible with conservation of resources and protection of community character. The proposed park and campground will be owned and operated seasonally by the regional district and non-commercial (similar to Descanso Bay Regional Park Campground on Gabriola Island). The primary focus of the project is the conservation of sensitive ecosystems and the provision of opportunities for the public to engage with nature in a low impact way. The existing Bowen Island community character includes natural areas such as steep slopes and hillsides, rural and marine areas and forests. These character areas have many different land uses such as municipal, regional and provincial parkland, resource extraction areas, and residential, commercial, short-term rental accommodation and event facilities, including camps and retreats. The proposed campsite is entirely consistent with the community character.</p> <p>The creation of the regional park through BIM’s proposed Bylaws No. 608 and 609 will protect 97 ha of regionally significant sensitive ecosystems in perpetuity and provide low-intensity passive outdoor recreation opportunities. The proposed park will significantly expand protected areas on the island, protecting natural resources and enhancing community character.</p> <p>The Islands Trust Executive Committee has reviewed proposed BIM Bylaws No. 608 and 609 based on 450 – 465 people attending the campground daily. It is not clear where this figure derives from. Metro Vancouver estimates peak campground visitation in August to be approximately 260 individuals, in seven years, after the final phase of park development (See “<i>Approaches to Implementation, Visitation, Operations and Access</i>” Metro Vancouver, March 2023). The peak visitation estimate is based on an average campsite occupancy of 95%-100%, but considers average camping party sizes. The facility would only be open May – October.</p> <p>Metro Vancouver can confirm that:</p> <ul style="list-style-type: none"> • The majority of camp sites will have no vehicle access. Camping is restricted to tents only – no RVs will be permitted. Camping is seasonal from May to October.

		<ul style="list-style-type: none">• A Section 219 covenant will be developed to phase delivery, mitigate abrupt change, and allow for adaptive management.• An electric shuttle bus service to the park, and park information centre in Snug Cove will be provided in year one. <p>The above features of the Metro Vancouver Application are directly aligned with ITPS policy 5.7.2. To what extent was the above information (and other relevant materials) received by the Islands Trust Executive Committee? Please confirm/provide copies of the specific materials relied upon by the Islands Trust in making their determination in respect of this policy item. Please also provide additional clarity on the absolute and direct collision between ITPS and the Application as well as guidance on addressing that collision.</p>
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Bowen Island Municipality Conditional Requirements for OCP/Rezoning Approval (Bowen Island Municipality Council - July 10, 2023)			
#	Item	Description from Bowen Island Municipality	Metro Vancouver Response
1	Multi Use Path	<p>Complete Multi-use path (MUP) from current location (Artisan Lane) to the proposed Park Boundary. Total request of funding from MV is \$5.65M</p> <ul style="list-style-type: none"> A. 50/50 cost share section from Artisan Lane to Charlies Lane: ~600m estimated total (100%) at \$1.4 million B. 50/50 cost share section from Charlies Lane to Forester Lane (Water Treatment Plant Road): ~ 900m estimated total (100%) at \$1.5 million C. 50/50 cost share section from Harding Rd to Bowen Bay Rd: ~2.9 km estimated total (100%) at \$3 million D. Section from Bowen Bay Rd to Cape Drive: ~ 2.1km (100% Metro) estimated total (100%) at \$2.1 million E. Section from Cape Drive to Park Boundary: ~ 550m (100% Metro) estimated total (100%) at \$0.6 million F. 130 meter strip north of Trunk Rd already constructed (between Library and Miller Road): Metro and BIM entered into an agreement enabling BIM to construct the MUP along this strip with the condition that BIM will compensate Metro with the equivalent market value in either cash or land. 	<p>Section A, B and C form the previously planned municipal Cross Island Greenway. Metro Vancouver will not fund construction of these sections, but will work collaboratively with BIM to secure grant funding to advance implementation.</p> <p>Metro Vancouver will work with Bowen Island Municipality to identify a preferred route to connect the park to the proposed municipal Cross Island Greenway and secure grant funding to construct this section of the greenway. Any additional cost-sharing support is subject to MVRD Board approval.</p> <p>Section F is not related to this project and will be considered in a separate process.</p> <p>Metro Vancouver will construct and maintain all trail infrastructure within the boundaries of the proposed regional park.</p>

2	Dedicated Shuttle Bus	A dedicated shuttle bus to run from Snug Cove to the Park and back again at a minimum of 6 times per day during peak operational periods.	A dedicated seasonal park shuttle is proposed in the draft concept plan.
3	Feasibility study for passenger only ferry	Feasibility study for passenger only ferry including berthing facility, power requirements, parking and pedestrian marshalling areas.	<p>BC Ferries provides a publically funded and subsidized ferry service to Bowen Island. The transportation impact assessment confirmed there is ample capacity for pedestrian passenger travel to the proposed park.</p> <p>Ultimately, pedestrian ferry service is above and beyond the scope of this project, and Metro Vancouver’s mandate to provide.</p> <p>Metro Vancouver will work closely with private or public service providers pursuing ferry service to Bowen Island to explore opportunities for strong connections to the proposed park.</p>
4	Cape Drive Divestiture from BIM to Metro	Municipal roads within the proposed Park may be divested to Metro. This would require legal review and drafting of transfer documents. If the Metro owned lands are operated as a park, staff recommend this divestiture occurs regardless of the rezoning for camping.	Subject to legal review and due diligence, Metro Vancouver is supportive of this proposal as it aligns with the proposed Concept Plan.
5	Cape Area Trails - not within Proposed Park	Existing trails in the Cape Area are managed by BIM, however only the road ends are owned by BIM. The trails themselves are right-of-ways dedicated to BIM by the private land owners and as such it is difficult to transfer to Metro. An alternative approach, if desired, is to enter into a long-term management agreement where Metro takes over management of the trails.	<p>Metro Vancouver will work with Bowen Island Municipality to assess this proposal as it has the potential to ensure a consistent level of service on trails that provide access to the park.</p> <p>A review of trail conditions, SRWs, liability and maintenance requirements is required to ensure this is a viable option.</p>
6	Divestiture of BIM trails within Proposed Park	If the Park proceeds, BIM staff recommend divesting existing trails within the proposed Park to Metro Vancouver.	Metro Vancouver is supportive of this proposal as it and would ensure consistent level of service, accessibility, land management and bylaw enforcement

7	Adoption of Visitor Use Management Framework	Adoption of an empirically-validated, data driven visitor use management framework such as that of the <i>Intra-agency Visitor Use Management Council of the United States</i> (IVUMC) in use by Parks Canada and outlined in the Manzer (2020) report to Metro Vancouver titled <i>Measuring and Managing Park Carrying Capacity</i> . To be written into the Section 219 covenant, zoning, OCP, and/or licensing/permitting. Regular monitoring and reporting by BIM/MV.	This is complete. The Visitor Use Management Plan Framework submitted to BIM on May 26, 2023 is based on the IVUMC and is line with best practice in large park planning and management.
8	Adoption of Adaptive Management Framework	Adoption of an empirically-validated, data-driven adaptive management framework which is to guide phasing and implementation of park use, as well as to define Park carrying capacity. To include, but not limited to <ul style="list-style-type: none"> • monitoring of: transportation • ecological impact assessments • fire/emergency assessments • resource use • waste generation • visitation scope and patterns 	This is complete. Existing Metro Vancouver policy including the Resource Management Framework, and Regional Parks Plan provide clear direction on adaptive management as a guiding principle of land management in the regional park system. The Park Concept, Guiding Principles, Ecological Overview, Phasing Strategy and Visitor Use Management Plan developed through the park concept planning process, and provided to Bowen Island Municipality in support of the rezoning and OCP amendment application, confirm Metro Vancouver’s commitment to adaptive management. The technical work completed to date meets and exceeds best practice and represents a comprehensive, and well considered approach to park planning.

9	Alternate Access to Park Road	Net vehicle use of Park not to exceed that of existing 24 residential lots. Additional vehicle use requires construction of secondary access into the cape. -- not through whitesails.	<p>Whitesails Drive provides legal road access to the proposed park. A key focus of the park proposal is to limit car access. The transportation impact assessment confirms there is ample capacity to accommodate traffic associated with the proposed regional park, and that volume is expected to be lower than what could be expected under existing zoning.</p> <p>A viable alternative road access with suitable tenure and public support has not been identified. Given the volume of traffic associated with the park, compared to what could be permitted within existing zoning, Metro Vancouver will not commit to the construction of a secondary access to the park.</p>
10	Subsidized Water Taxi / Passenger Ferry	Possibly coordinated with Translink and part of transit/active transportation network, used for park reservations as well as Bowen Island residents.	<p>BC Ferries provides a publically funded and subsidized ferry service to Bowen Island. The transportation impact assessment confirmed there is ample capacity for pedestrian passenger travel to Bowen Island.</p> <p>Ultimately, pedestrian ferry service is above and beyond the scope of this project, and Metro Vancouver's mandate to provide.</p> <p>Metro Vancouver will work closely with private or public service providers pursuing ferry service to Bowen Island to explore opportunities for strong connections to the proposed park.</p>
11	Protection of Coastal Bluffs	Establishment of conservation covenants to prohibit construction or structures or trails along sensitive coastal bluff ecologies. Visitor use on the bluffs to be strictly controlled and monitored by applicant.	<p>This is already reflected in the draft concept plan.</p> <p>Conservation covenants are already in place and registered.</p> <p>The proposed park offers far greater protection of the coastal bluffs and surrounding environment than the existing residential zoning provides. Park natural resources will be protected in perpetuity.</p>

12	Buffer Zone around Conservancy	Lot 23 to be managed as conservancy/eco-reserve; lots across the road to Conservancy to be managed so as to impede visitor traffic to Conservancy.	This is included in the draft concept plan.
13	Shuttle from Urban MV to HSB	To promote socio-economic accessibility of Park, shuttle from inner MV (e.g., Seabus in CNV or Waterfront) to HSB.	<p>Weekend/peak season shuttle service from a regional park or transit hub is being contemplated as part of the proposed park shuttle program.</p> <p>Additional assessment is required to determine feasibility and demand.</p> <p>#257 Express (Burrard to HSB) is in service. Coordination with Translink is required.</p>
14	Public transit extension to park.	Translink extension of service must be active to the Park prior to full build out.	<p>Metro Vancouver will explore options, with Translink, to expand service to the park.</p> <p>The existing #280 bus route, on Bowen, is challenging to extend to the park as its route aligns with the ferry schedule.</p> <p>A dedicated park shuttle will provide dedicated service.</p>
15	Visitor Dispersal and Infrastructure Impact in the Cove	Contribution of staging area at ferry egress and transfer of MVRD land for wastewater treatment plan, BIRD, multiuse pathway, washrooms, etc; that will impact Snug Cove.	<p>Seaside Cottage, in Crippen Regional Park in Snug Cove, will be renovated and repurposed as a park orientation center with shuttle pickup, park information and washrooms.</p> <p>Seaside Cottage is proximate to the existing transit pick up drop off area at the Cardena Drive Passenger Exchange</p> <p>Land transfers unrelated to the proposed regional park will not be considered as part of this process.</p>
16	Reduction in Vehicle Access Sites	Vehicle access sites be reduced to under 10% of non-group and non-tent cabin sites, used exclusively for those with accessibility challenges; restricted to specific disability need	The majority of campsites included in the current proposal are cycle/hike/shuttle access. The current level of vehicle access sites is required to ensure accessibility and options for those wishing to access the site.

17	2050 Plans be Referenced in Concept Plan		The proposed park vision, guiding principles and concept are in alignment with Metro2050, Regional Parks Plan and Regional Greenway 2050 Plan.
18	Animal control elements	Animal control elements must be included	Metro Vancouver has extensive experience managing dogs in parks with engineering, education and enforcement. REGIONAL PARKS REGULATION BYLAW NO. 1177, 201 establishes the bylaw for animal control.
19	Fire Plan and Control	On-site equipment provided	<p>Metro Vancouver has already procured site specific fire response equipment for the proposed park. A wildfire plan for interim operations has been completed and filed with BIM Fire Chief.</p> <p>Metro Vancouver staff are highly trained in fire risk management, initial attack, bylaw enforcement and communication. Highly trained, watershed fire suppression crews are available 24/7. Metro Vancouver maintains site specific fire response plans for all park sites, and actively manages risk throughout the summer season with considerable resources and expertise.</p>
20	Implementation of a reservation system	For all campgrounds, and the potential to expand to all users to the Park	<p>All overnight use will be by reservation.</p> <p>A day use reservation system will also be considered as a visitor management tool.</p> <p>The Visitor Management Plan provides an overview of these, and related strategies.</p>
21	Mt Gardner Rd, Collins Rd and Green Rd Dedication from Metro to BIM	Mt Gardner Rd transects Crippen Regional Park past Killarney Lake and is not recognized as a dedicated municipal road/highway. BIM staff have formally requested Metro to divest these road sections to BIM as BIM maintains and operates the roads because they service numerous properties and lands beyond.	Land transfers unrelated to the proposed regional park will not be considered as part of this process.

February 23, 2024

Bowen Island Municipality
File: RZ/OCP 2023-0018

Jeff Fitzpatrick
Metro Vancouver Regional Parks
VIA EMAIL: Jeffrey.fitzpatrick@metrovancover.org

Dear Jeff,

Response to Metro Vancouver

I am writing in response to your letter dated December 1, 2023 regarding your application for a new Regional Park at Cape Roger Curtis.

Your letter sought out additional information on the specific areas of concerns and the material on which those concerns are based, in accordance with, the Islands Trust Policy Statement. Below I provide an overview of the referral process to date, and BIM's staff's assessment on concerns identified by the Islands Trust which could be addressed by action from Metro Vancouver

Rezoning and OCP Amendment Application – Islands Trust Referral

Your letter seeks confirmation on the referral process of your application to the Islands Trust, and confirmation that all technical reports and studies were included in the referral. Most of this documentation is available on publicly available agendas and reports, which I summarize below.

The initial referral of the Metro Vancouver application was referred to the Islands Trust by BIM Council at their February 27th, 2023, meeting. Staff sent the initial referral to Islands Trust staff on March 2, 2023, and included the complete application submitted at that time. BIM staff did not receive any concerns from IT staff from this initial referral.

The referral of Bylaw 608 and 609 was made at the July 10th, 2023 BIM Council Meeting, and was considered by the Islands Trust (IT) Executive Committee meeting of August 2, 2023. The agenda package may be viewed electronically at: <https://islandstrust.bc.ca/document/executive-committee-regular-meeting-agenda-47/>. An agenda addendum was also published electronically and can be viewed at: <https://islandstrust.bc.ca/document/executive-committee-regular-meeting-addendum-18/>. IT Planning staff provided a report on that agenda, which contains an overview of the referral and include links to all the various technical reports which had been submitted by Metro Vancouver by that time. The IT Executive Committee adopted the following motion:

EC-2023-085

It was Moved and Seconded,

That Executive Committee request Islands Trust staff request Bowen Island Municipality staff respond to the following questions on 5.5.6 (re: how were the high impact recreational activities addressed and the number of potential persons camping) and 5.2.3, specifically the social impacts of development addressed, regarding Islands Trust Policy Statement checklist and return to this item the August 25th Executive Committee meeting.

CARRIED

Following that meeting Islands Trust staff reached out to BIM, and to me directly, seeking additional clarity on the two policies named above, and I responded by email amplifying my analysis of those two policies. The IT Executive Committee again considered the referral at their August 25th, 2023, meeting. The agenda for that meeting can be viewed electronically at: <https://islandstrust.bc.ca/document/executive-committee-regular-meeting-agenda-48/>. The agenda for the August 25 meeting contained an additional IT staff report on the referral. The agenda also included the correspondence between IT staff and me addressing the two policies identified in the minutes of the August 2, 2023 meeting.

BIM staff cannot speak to how the Executive Committee reviewed the documents contained in the referral, including staff reports and technical submissions, but reviewing the meeting recording shows Executive Committee members with knowledge of the contents of the technical reports prepared by Metro Vancouver, as references were made to specific points in the reports throughout the meeting. At the meeting the IT Executive Committee adopted the following motions:

EC-2023-093

It was Moved and Seconded,

THAT the Executive Committee request that staff advise Bowen Island Municipality in writing that the Executive Committee considers that Bylaw No. 608 cited as “Bowen Island Municipality Official Community Plan Amendment Bylaw No. 608, 2023” is contrary to or at variance with the Islands Trust Policy Statement policies 4.4.2, 5.2.3, 5.2.4, 5.2.5, 5.5.4, 5.5.6, 5.5.7, 5.6.2, 5.6.3 and 5.7.2, triggering a meeting between Bowen Island Municipality and the Islands Trust Executive Committee and, that staff provide a summary of the Executive Committee’s consideration.

CARRIED

EC-2023-094

It was Moved and Seconded,

THAT the Executive Committee request that staff advise Bowen Island Municipality in writing that the Executive Committee considers that Bylaw No. 609 cited as “Bowen Island Municipality Land Use Bylaw No. 57, 2002, Amendment Bylaw No. 609, 2023” is contrary to or at variance with the Islands Trust Policy Statement for those items identified in the motion EC-2023-093 concerning Policy Statement Directives as listed, 4.4.2, 5.2.3, 5.2.4, 5.2.5, 5.5.4, 5.5.6, 5.5.7,

5.6.2, 5.6.3, 5.7.2, triggering notification of the Minister and that staff provide a summary of the Executive Committee's consideration.

CARRIED

Notice of that decision was relayed to BIM by way of a letter dated August 25, 2023 from Stefan Cernak, Director of Planning Services for the Islands Trust. That letter was sent to Metro Vancouver Staff and may also be viewed at: <https://www.bowenland.civicweb.net/document/295061>. Regardless of BIM and IT staff's recommendation regarding the bylaw's compliance with the Islands Trust Policy Statement, the IT Executive Committee's role is to determine for themselves if a bylaw is contrary to or at variance with the Islands Trust Policy Statement, and not simply to affirm a recommendation made by staff.

BIM Council met with the IT Executive Committee at a Special Council Meeting on October 16, 2023. The agenda for that meeting may be viewed electronically at: <https://bowenland.civicweb.net/filepro/document/295075/Special%20Council%20with%20Islands%20Trust%20Executive%20Committee%20-%202016%20Oct%202023%20Agenda.pdf>.

At that meeting BIM staff and Council sought additional information from the Islands Trust Executive Committee regarding what specific changes were being sought from the Executive Committee to Bylaws 608 & 609, and some responses were verbally provided by members of the Executive Committee during the meeting.

The video of the meeting may be reviewed at <https://bowenland.civicweb.net/filepro/document/295076/Special%20Council%20with%20Islands%20Trust%20Executive%20Committee%20-%202016%20Oct%202023.html>.

At that meeting, as you are aware, at the meeting Council adopted the following motion:

RES#23-338

It was Moved and Seconded

That Council direct staff to request the applicant, Metro Vancouver, amend their application to comply with the Islands Trust Policy Statement Directive Policies prior to consideration of second reading and to report back to Council.

CARRIED UNANIMOUSLY

Finally, your letter requests confirmation that notification was provided to the Minister of Municipal Affairs, pursuant to Section 15.1 of the BIM Letters Patent. The Ministry was included in the August 25th letter, and BIM staff subsequently additionally contacted the Minister to inform them of the Islands Trust decision. The final communication with the Ministry was following the October 25th Special Council Meeting. At that time the Ministry was satisfied that BIM Council had identified a way forward as described in Resolution#23-33.

Islands Trust Executive Committee Concerns

Your letter requests that BIM "provide clarity on the Islands Trust determination process and next steps to advance the Application, with reference to the applicable policies, requirements, guidance

and procedures outlined in the Islands Trust Policy Statement and the BIM – Islands Trust Protocol Agreement.”

While BIM staff are not able to provide specific amendments required to address the concerns raised by the IT Executive Committee, BIM staff provide the following comments on four categories of concerns raised by the Islands Trust.

1. Transportation

The Islands Trust expressed concerns that your application is inconsistent with several policies that relate to off-site impacts of the proposed development, in particular, the impact of arrivals in Snug Cove and the travel across Bowen Island to access the campground. Metro Vancouver’s *Visitor Use Management Plan*, dated June 8, 2023 identifies concerns with the Island’s Transportation Infrastructure. Likewise, Bowen Island’s current [Transportation Plan](#) identifies concerns with existing cycle facilities on Bowen, as many Bowen roads lack safe, accessible infrastructure. In January of this year staff presented BIM’s [Active Transportation Plan](#) which showed that the current route across Bowen Island is not an acceptable route for the majority of bicycle riders on Bowen Island.

Initial submissions from Metro Vancouver acknowledged the challenge of transportation across Bowen Island and sought to take steps to mitigate these challenges. For example, Metro’s *“Implementation, Visitation, Operations and Access Report”*, dated March 2023, identified BIM’s proposed Multi-Use Path route to traverse the Island from Snug Cove to Tunstall Bay. This report stated that:

Metro Vancouver will prioritize alternatives to private vehicular access to the park. Sustainable access will be a guiding principle, from the park’s physical planning and design to managing capacity, access and communication-related to day and overnight use. Access strategies will include:

- *Provision of a park shuttle;*
- *Improved multi-use pathway or greenway connections; and*
- *Limited vehicular access to support accessibility and day use.*

The Preliminary Phasing Summary included in that report outlined that Phase 1 of the “park development phases” would include “Investment Cross-island MUP.”

In May 2023 Metro Vancouver submitted a *“Visitor Use Management Plan.”* This plan also recognized the potential impact that access to the park will cause to existing residents. This plan stated that “Metro Vancouver will work with Bowen Island Municipality to fund key phases of the cross-island multi-use part (MUP).” The updated Phasing Summary submitted at the same time again identified a Phase 1 action of “Investment in cross-island MUP.” Metro’s submitted Transportation Impact Assessment (TIA), prepared by Bunt and Associates, identifies that potential TDM strategies to be undertaken by the Site Developer include “Provide Cycling facilities leading to, adjacent to and on the site.” Based on these submissions, and ongoing conversations with Metro Staff, BIM staff had understood Metro Vancouver proposing improved non-vehicular access to the park, including construction of

portions of the Multi-use path, to be done through a cost-sharing agreement, similar to the improved vehicle access route proposed in the development of Widgeon Marsh Regional Park.

Thank you for the submission of the January 24, 2024, Bunt memo provided in response to BIM staff concerns. The TIA and additional memo still contain many assumptions that would rely heavily on improvements to the active transportation network to bring visitors to the park. For example, the January 24, 2024 memo estimates a modal split for transportation to the park such that 25% of daily visitors will come on foot or by bicycle (the memo also estimated 38% will arrive by transit/shuttle). Absent improvements to park access, staff foresee visitors instead accessing the park by motor vehicle, with increased impacts on access routes into the park. BIM staff are awaiting a third party peer review of the TIA, which we understand you have commissioned.

The *“Visitor Use Management Plan”* submitted in June 2023 likewise acknowledged challenges with access to the site and a desire to reduce car access to the site. This plan, however, removed commitments to improve access to this site. This report instead stated, *“Metro Vancouver will work with Bowen Island Municipality to fund key phases of the cross-island multi-use path (MUP) within the park.”*

Finally, your letter dated December 1, 2023 stated firmly that Metro Vancouver will not fund construction of the Multi-use path, or a connection between the planned Multi-use path and the proposed park.

The challenges of access to the proposed Regional Park are a key concern raised by BIM Council and staff and Bowen residents. The IT Executive Committee likewise expressed concerns with compliance with Policy 5.5.7. Metro Vancouver’s initial application provided assurance of funding to address these off-site challenges with access, which could be used to support compliance with Policy 5.5.7. The updated Management Plan in June 2023, and confirmed in your letter dated December 1, indicate that the previous offer to address off-site challenges of transportation has been removed.

Given the revisions to your application to remove commitments to improve cycling access to the proposed Regional Park, please outline how Metro Vancouver will work to improve cycling access to the Proposed Regional Park, including meeting the recommendation in the Bunt and Associates TIA to provide Cycling facilities leading to the site.

2. Adaptive Management

Metro Vancouver’s submissions have indicated that Park management will utilize “adaptive management,” but no details have been provided as to how that will be implemented. While your letter states that Metro Vancouver would be willing to enter into a Section 219 Covenant in relation to the proposed phasing plan” Metro Vancouver staff have been clear to BIM staff that, under no circumstances, would Metro Vancouver agree to a Section 219 Covenant and phasing plan that would result in a total number of campsites below that proposed in your application. As such, please provide specific additional information regarding the nature of adaptive management proposed and what steps Metro Vancouver would be willing to commit to taking if

the proposed park has greater impacts than those projected in the submitted Transportation Impact Assessment and Visitor Use Management Plan.

3. Water Demand

The IT expressed concern that “water is an issue in that area based on public feedback and reports indicating issues with water in that area”. Your response noted the submission of a technical memorandum *Water Study Analysis Results* by Water Street Engineering dated June 23, 2023. That memorandum concludes, based on an analysis of the well certification records, that there is sufficient quality of water to meet the estimated peak demands of the proposed campground. The memorandum recommends additional well testing be conducted “to confirm the well supply quantity and quality.” BIM staff would recommend that completion of this recommendation be conducted to address concerns raised by the Islands Trust.

4. First Nation Engagement

BIM has referred Bylaws 608 & 609 to the Squamish First Nation, and to date has not received a response from the referral. I understand from your letter, and other conversations with Metro staff, that you have worked closely with the Squamish First Nation, and other Indigenous groups, in your planning for the proposed Regional Park. To address the concern from the Islands Trust, Metro Vancouver may wish to provide information on the state of their engagement, and, if possible, encourage the Squamish First Nation to provide any comment on the proposal.

Next Steps

At their July 10, 2023, Council Meeting, BIM Council referred Bylaws 608 and 609 to the Islands Trust for comment, and to a number of internal advisory committees and external agencies BIM began the referral process, and Metro Vancouver staff were present at those initial committee referral meetings. However, staff paused referral meetings to allow Metro Vancouver to address concerns raised by the Islands Trust. Upon receiving a response from Metro Vancouver, addressing the concerns raised by the Islands Trust, BIM Staff will return your response to BIM Council and seek a referral to any response to the Islands Trust to ascertain if, given additional information, the Islands Trust finds that the revised application is not contrary to or at variance with the Islands Trust Policy Statement. Upon receiving this statement from the Islands Trust, BIM staff will complete the remaining committee referrals before returning all comment received to date to BIM Council.

Sincerely,

Daniel Martin

Daniel Martin
Manager of Planning and Development

cc: Liam Edwards, Bowen Island Municipality CAO
Hope Dallas, Bowen Island Municipality Corporate Officer
Lydia Mynott, Landscape Architect, Regional Parks, Metro Vancouver
Mike Redpath, Director, Regional Parks, Metro Vancouver
Stefan Cermak, Director, Planning Services, Islands Trust

To: Climate Action Committee

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

Date: March 11, 2024 Meeting Date: April 4, 2024

Subject: **Appointment of Enforcement Officers and Assistant District Director**

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. appoint Metro Vancouver employee Sonny Johal as assistant district director;
 - ii. rescind the appointment of Scott Brown as an officer; and
 - iii. appoint Metro Vancouver employees Sonia Ganjehei and Nicole MacDonald 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 Scott Brown; and
 - ii. appoint Metro Vancouver employees Sonia Ganjehei and Nicole MacDonald.
-

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 retirements, recruitment, and promotions within Metro Vancouver. Staff recommend that the MVRD Board appoint staff and rescind appointments accordingly.

PURPOSE

To appoint one Metro Vancouver employee as a Board-designated assistant district director and two Metro Vancouver employees as Board-designated officers, and to rescind the appointment of one former officer.

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. Two new positions within Metro Vancouver resulted in vacancies being filled in

2023. 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 THE ASSISTANT DISTRICT DIRECTOR

An Assistant District Director has the same powers as the District Director and is appointed to assist the District Director in the administration of the *Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008*. These powers include all the powers of an Officer as well as the ability to issue permits, approvals and orders under the Bylaw.

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. appoint Metro Vancouver employee Sonny Johal as assistant district director;
 - ii. rescind the appointment of Scott Brown as an officer; and
 - iii. appoint Metro Vancouver employees Sonia Ganjehei and Nicole MacDonald 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 Scott Brown; and
 - ii. appoint Metro Vancouver employees Sonia Ganjehei and Nicole MacDonald.
2. That the MVRD Board receive for information the report dated March 11, 2024, titled "Appointment of Enforcement Officers and Assistant District Director" and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

There are no additional financial implications as the MVRD appointees are already employed by Metro Vancouver and there are no costs associated with rescindments.

CONCLUSION

Recent changes in staffing have resulted in a need to update staff appointments as the 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.

To: MVRD Board of Directors

From: Heather McNell, Deputy Chief Administrative Officer, Policy and Planning

Date: April 5, 2024 Meeting Date: April 26, 2024

Subject: **Where Matters II – Final Report**

REGIONAL PLANNING COMMITTEE RECOMMENDATION

That the MVRD Board:

- a) receive for information the report dated March 13, 2024, titled “Where Matters II – Final Report”;
 - b) forward the “Where Matters II – Final Report: Walkability and Greenspace Relationships with Health and Climate Change” report to member jurisdictions for information with an offer of presenting the report findings to councils; and
 - c) direct staff to forward the “Where Matters II – Final Report: Walkability and Greenspace Relationships with Health and Climate Change” report to staff at the Ministry of Health including local Health Authorities, Ministry of Housing, Ministry and Municipal Affairs, and Ministry of Transportation and Infrastructure for information.
-

At its April 5, 2024 meeting, the Regional Planning Committee considered the attached report (Attachment 1) titled “Where Matters II – Final Report”, dated March 13, 2024. The Committee subsequently amended the recommendation as presented above in underline style.

The full “Where Matters II Final Report: Walkability and Greenspace Relationships with Health and Climate Change” was presented as an attachment to the associated Regional Planning Committee staff report but, given its large size, only the executive summary (Attachment 2) is being forwarded to the Board. The full report will be available on the Metro Vancouver website.

This matter is now before the Board for its consideration.

ATTACHMENTS

1. “Where Matters II – Final Report”, dated March 13, 2024.
2. “Where Matters II – Final Report Walkability and Greenspace Relationships with Health and Climate Change”, dated February 29, 2024, pages 1 to 13.

REFERENCES

1. [“Where Matters II – Final Report Walkability and Greenspace Relationships with Health and Climate Change”, dated February 29, 2024.](#)

67265316

To: Regional Planning Committee

From: James Stiver, Division Manager, Regional Land Use Policy,
Regional Planning and Housing Services

Date: March 13, 2024

Meeting Date: April 5, 2024

Subject: **Where Matters II – Final Report**

RECOMMENDATION

That the MVRD Board:

- a) receive for information the report dated March 13, 2024, titled “Where Matters II – Final Report”; and
 - b) forward the “Where Matters II – Final Report: Walkability and Greenspace Relationships with Health and Climate Change” report to member jurisdictions for information with an offer of presenting the report findings to councils.
-

EXECUTIVE SUMMARY

Transportation investment and land use decisions can have considerable public health consequences. The physical environment where we live, work, and play shapes our activity and travel patterns which in turn directly impacts vehicle emissions and our health and wellness. Since 2016, Metro Vancouver has been part of a research partnership led by Dr. Lawrence Frank, formerly at UBC’s Health and Community Design Lab (School of Population and Public Health), to study and quantify the health and economic benefits of walkable communities and access to parks. Phase 2 of the Where Matters project is now complete and is being presented to the Regional Planning Committee and MVRD Board for information. It documents the direct and indirect health-related impacts and costs of transportation and land development decisions.

The findings confirm that living in more walkable rather than car-dependent neighbourhoods is associated with:

- increased walking (from 5 to 35 percent), transit use (from 3 to 17 percent), and fewer motor vehicle trips (declining from 92 to 44 percent);
- significantly lower travel-based greenhouse gas emissions (from 17 to 6 kilograms per person / day);
- higher rates of residents achieving the recommended amount of moderate to vigorous physical activity per week, resulting in reduced levels of obesity (51 percent lower odds) and diabetes (39 percent lower odds);
- time spent in cars declining from 37 to 19 minutes per day, while walk and bike time rising from 2 to 14 minutes per day; and
- residents reporting a 47 percent higher sense of community belonging.

PURPOSE

To provide the Regional Planning Committee and MVRD Board with the final *Where Matters II – Final Report: Walkability and Greenspace Relationships with Health and Climate Change* project report and a summary of findings for information.

BACKGROUND

Metro Vancouver has been participating and financially contributing to the “Where Matters” study with other partners including TransLink, Vancouver Coastal Health, the Real Estate Foundation of BC, and UBC’s Health and Community Design Lab, to better understand the relationship between health outcomes and built environment. Phase 2 of the Where Matters Study also included the City of North Vancouver as a partner.

While there is a general recognition of the association between walkability and park access and better health outcomes, the first phase of the Where Matters Study, completed in 2019, explored the extent of that relationship for the first time in the Metro Vancouver region. The Study explored and quantified the relationships between the multiple health-related impacts of two of the determinants of health, the built and natural environments, as well as their collective influence on healthy behaviours. Phase 2 of the Where Matters Study is now complete. It leverages the findings of the first phase of the Study, and further explores the relationships between the built environment, health, and travel data to also assess the impacts of transportation and land use decisions on the prevalence of chronic diseases, travel patterns, and greenhouse gas (GHG) emissions.

WHERE MATTERS STUDY

The promotion of public health and well-being is an important component in building complete, healthy communities and an important objective of community and regional planning in this region. While there are other determinants of health, the Where Matters Study looked at multiple health-related impacts of the built and natural environments, as well as their collective influence on health outcomes and healthy behaviours, separated by age and income.

The promotion of public health and walkability is fundamental to many of the strategies and policy actions in *Metro 2050*, including:

- focusing growth in Urban Centres and Frequent Transit Development Areas (Strategy 1.2);
- developing resilient, healthy, connected, and complete communities with access to a range of services and amenities (Strategy 1.3); and
- coordinating land use and transportation to encourage transit, multiple-occupancy vehicles, cycling, and walking (Strategy 5.1).

At its July 5, 2019 meeting, the Regional Planning Committee received a staff report dated June 11, 2019 titled, “Where Matters: Health and Economic Impacts of Where We Live Final Report” on the research findings of the first phase of the Where Matters Study (Reference 1). Phase I of the Where Matters Study developed a Built Environment Database for the region (Reference 2) that considered how the region’s built environment is related to the prevalence of chronic disease and physical activity behaviours by considering: walkability, access to park space, and neighbourhood

type (ranging from ‘car dependent’ to ‘walkable’). The results of the Study confirmed that higher levels of walkability and access to parks are associated with increased physical activity and lower incidents of chronic disease, hypertension, and stress. When comparing the results from people living in walkable areas to car dependent areas:

- People are 45 percent more likely to walk for transportation;
- People are 17 percent more likely to meet the weekly recommended level of physical activity;
- People are 42 percent less likely to be obese;
- People are 39 percent less likely to have diabetes;
- People are 14 percent less likely to have heart disease;
- People are 23 percent less likely to experience stressful days; and
- People are 47 percent more likely to have a strong sense of community belonging.

WHERE MATTERS STUDY - PHASE II

Phase 2 of the Where Matters Study tracks how Metro Vancouver’s communities are changing over time, and how these changes impact public health and climate change. It builds on the previous work and connects the same measures of walkability and place types with climate impacts, and provides the ability to evaluate if health relationships with the built environment are connected (i.e., does a change in neighbourhood results in a change in health?).

The Phase 2 Study utilizes the Vancouver Walkability Index, TransLink’s 2017 Travel Diary Survey data, the BC Generations Health Survey, Metro Vancouver’s Greenspace data, and air quality data from the Canadian Urban Environmental Health Research Consortium. This data can be used to determine measurable biological responses such as body weight, inflammation, and stress which, over time, can impact the prevalence of chronic disease.

Findings

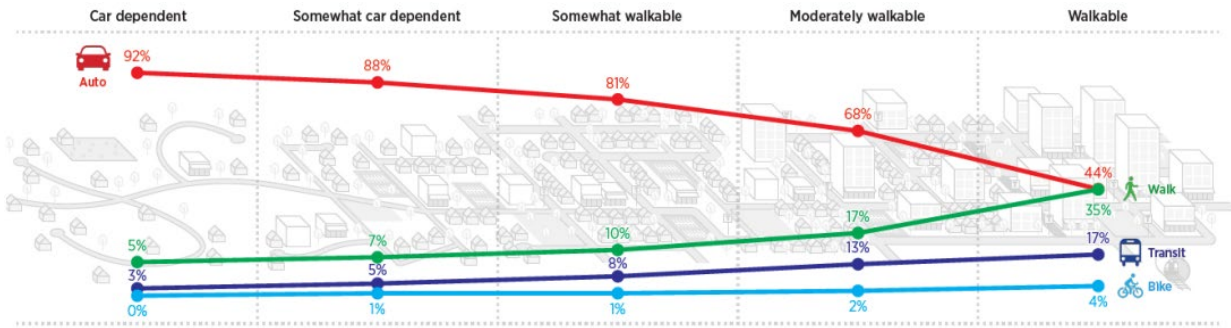
Travel and Climate Change

The Study concludes that higher levels of neighbourhood walkability are associated with increased walking and transit use, and fewer motor vehicle trips. Using travel data from TransLink’s 2017 Trip Diary Survey, the region’s travel habits were compared with travel-related emissions, walkability and other factors. In particular, when comparing the most car dependent to the most walkable areas of the region:

- the proportion of trips by car declined from 92 to 44 percent;
- walking increased from 5 to 35 percent; and
- transit use rose from 3 to 17 percent.

The Study also demonstrates a strong connection between walkability and travel mode choice. When comparing the most car dependent to the most walkable areas of the region, the average per person vehicle kilometres travelled declined from 11.92 to 5.83 per day (Figure 1).

Figure 1. Proportion of Daily Trips by Mode of Transportation and Place Type

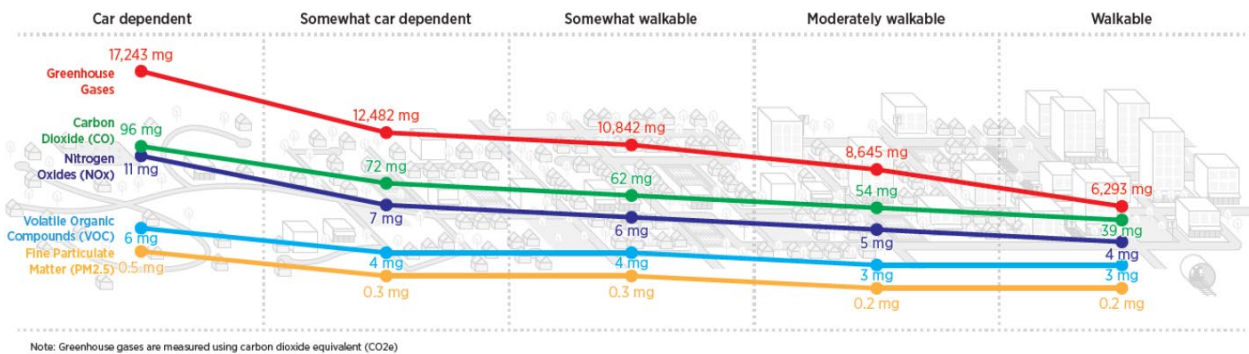


These results provide clear support for encouraging increased development densities and walkability as a GHG emissions reduction measure.

Greenhouse Gas Emissions

Private vehicle trips are responsible for roughly 32 percent of regional GHG emissions, and travel-related vehicle emissions have well-documented adverse human health impacts. Comprehensive lifecycle emissions estimates were generated for each reported trip, and a model was developed of daily GHG emissions on the same variables. The Study’s model results show that emissions were significantly lower in more walkable neighbourhoods when adjusting for regional accessibility, vehicle ownership, income, and other factors. Travel-related GHG emissions declined nearly threefold, from 17 to 6 kilograms per person / day from the least to most walkable Place Type. Overall, those living in the region’s more walkable areas generated between half to a third as many GHG emissions as those in the most car-dependent areas (Figure 2).

Figure 2. Amount of Typical Daily Transportation-Related Emissions by Place Type



Walkability

Walkability is one of the key community variables analyzed by Where Matters II. Walkability is a measure of the physical characteristics of the urban environment at the neighbourhood level that support walking. The results of the Study show that higher levels of walkability are associated with higher rates of walking as a transportation mode, and higher rates of residents achieving the recommended amount of moderate to vigorous physical activity per week (i.e., 150 minutes). The most walkable places in the region have a mix of housing types ranging from moderate to denser

residential development, easy access to retail stores, amenities and services, and highly connected streets; these are referred to as ‘complete communities’ in *Metro 2050*. In general, when neighbourhood walkability is improved, the culmination of these changes has been shown to be a significant factor in living healthier, more environmentally-friendly lifestyles.

The Study summarizes the component indicators by providing regional scale mapping and a summary of the average Metro Vancouver regional values for each of the 5 core components of walkability for 2006, 2011 and 2016. Each of the components show an increasing trend at subsequent time points (noting a slight reduction in land use mix), increasing trends in intersection density and net residential density, and commercial floor area ratio (FAR). Table 1 shows a summary of average walkability component values for Metro Vancouver in 2006, 2011, and 2016.

Table 1. Average Walkability Component Values for Metro Vancouver by Year

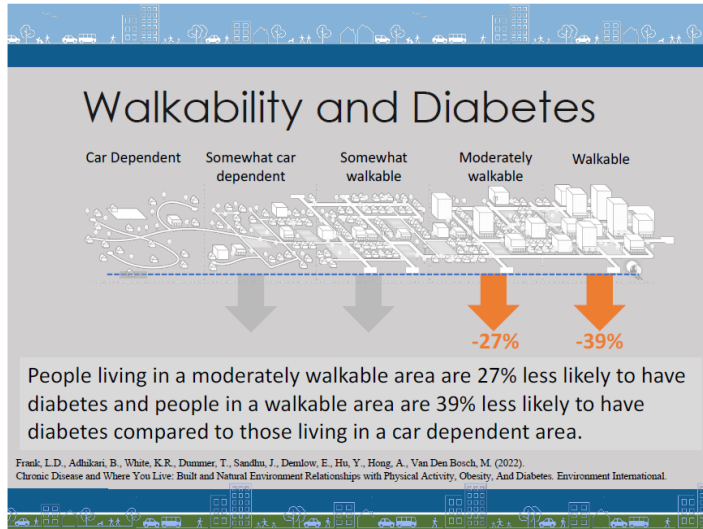
Community Design Characteristic	Year		
	2006	2011	2016
Intersection Density (intersections/km ²)	45	63	65
Net Residential Density (units/acre)	10	16	18
Commercial FAR	0.345	0.348	0.350
Land Use Mix	0.275	0.375	0.325

The region’s walkability mapping is currently being updated by Dr. Frank and his team as a separate project supported by the 2024 Board-approved Regional Planning budget. Later this year we will be able to see these changes between 2006 and 2021.

Community Health Impacts

The relationship between chronic disease and impacts of the built and natural environment were estimated using the BC Generations Project, a database of 30,000 British Columbians aged 35-69. This dataset was established over the past decade as a research platform for evaluating the genetic, behavioural, and environmental causes of chronic disease.

- **Obesity** – Living in walkable neighbourhoods has been linked to significantly higher levels of physical activity. Among the Metro Vancouver sample, obesity showed a 16 percent prevalence rate, with 12 percent being treated for hypertension, and 2 percent being treated for type 2 diabetes. The Where Matters II study found that a 1-unit increase in the walkability score was associated with a 9 percent reduction in the odds of becoming obese. When compared to the least walkable areas, those participants living in the most walkable areas have 51 percent lower odds of becoming obese.
- **Diabetes** – Related to obesity as an indicator, residents in the most walkable areas of the region have a 39 percent lower odds of having diabetes compared with those in the most car-dependent areas (Figure 3).

Figure 3. Relationship Between Walkability and Diabetes

- **Mental Health and Sense of Community** – Sense of community belonging and concern over social isolation has become a major mental health issue in North American cities in recent years. The Where Matters II study found that participants living in the most walkable areas of the region were 47 percent more likely to report having a strong sense of community compared with those in the most car-dependent areas. However, participants in the most walkable areas were also shown to be 1.74 times more likely to report experiencing anxiety and stress compared to those living in the least walkability areas, which could appear to be a counter indicator; more consideration of this data is needed to better understand that relationship.

Summary

The physical environment where we live, work, and play shapes our activity and travel patterns which in turn impacts our wellness and vehicle emissions. Time spent in cars is a sedentary activity while walking and biking are forms of physical activity. When comparing the least to the most walkable areas of the region the time spent in cars declined from 37 to 19 minutes per day, while walk and bike time rose from 2 to 14 minutes per day respectively.

NEXT STEPS

It is recommended that copies of this staff report with the attached “Where Matters II – Final Report: Walkability and Greenspace Relationships with Health and Climate Change” be shared with all member jurisdictions for information with an offer of a staff presentation to councils. The final report will also be posted on the Metro Vancouver website for download and will be promoted broadly in other ways. Joint presentations and webinars with the other project partners that highlight the Study’s results will be explored.

ALTERNATIVES

1. That the MVRD Board:

- a) receive for information the report dated March 13, 2024, titled “Where Matters II – Final Report”; and
 - b) forward the “Where Matters II – Final Report: Walkability and Greenspace Relationships with Health and Climate Change” report to member jurisdictions for information with an offer of presenting the report findings to councils.
2. That the Regional Planning Committee receive for information the report dated March 13, 2024, titled “Where Matters II – Final Report and provide alternative direction to staff.

FINANCIAL IMPLICATIONS

Metro Vancouver was a partner in the Where Matters Study, and contributed \$20,000 towards Phase 2 of the Where Matters project. These funds were included in the 2020 MVRD Board-approved budget for Regional Planning. The project leveraged a \$170,000 grant from the Canadian Institute of Health Research, and the overall budget totaled \$542,000.

CONCLUSION

Transportation investment and land use decisions can have considerable public health consequences. The physical environment where we live, work, and play shapes our activity and travel patterns which in turn impacts our wellness and vehicle emissions. Since 2016, Metro Vancouver has been part of a research partnership led by Dr. Lawrence Frank, formerly at UBC’s Health and Community Design Lab (School of Population and Public Health), to study and quantify the health and economic benefits of walkable communities and access to parks. While there is a general recognition of the association between walkability and park access and better health outcomes, the first phase of the Where Matters Study, completed in 2019, explored the extent of that relationship for the first time in the Metro Vancouver region. Phase 2 of the Where Matters project documents the direct and indirect health-related impacts and costs of transportation and land development decisions as well as the impacts on GHG emissions. The findings confirm that living in more walkable neighbourhoods can be associated with lower emissions, higher rates of physical activity and sense of community belonging, and lower rates of obesity, diabetes, and cardiovascular disease.

The promotion of public health and walkability is fundamental to many of the strategies and policy actions in *Metro 2050*. The connection between walkability and improved health outcomes demonstrates that local governments have a key role to play in supporting health and wellness by:

- building compact residential areas;
- increasing intersection density;
- supporting compact, mixed-use neighbourhoods; and
- improving access to parks.

However, the most walkable parts of the Metro Vancouver region also tend to be the least affordable. More work is needed by Metro Vancouver, member jurisdictions, other levels of government, and other agencies and organizations in this region to ensure that social equity continues to be a consideration of land use and development decision making, and that lower income households are not priced out of the places with the best health outcomes.

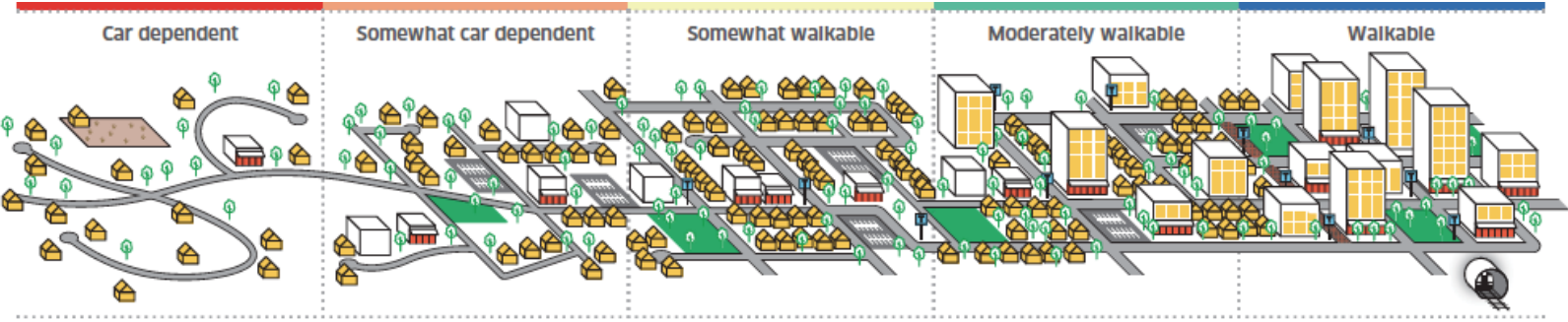
ATTACHMENT

1. ~~Where Matters II – Final Report: Walkability and Greenspace Relationships with Health and Climate Change.~~

REFERENCES

1. [Regional Planning Committee staff report dated June 11, 2019, titled “Where Matters: Health and Economic Impacts of Where We Live Final Report”.](#)
2. [Where Matters: Health and Economic Impacts of Where We Live Policy Brief, May 6, 2019.](#)

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Where Matters II – Final Report Walkability and Greenspace Relationships with Health and Climate Change

Prepared For:



Prepared By:

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 - Victor Gasper, Manager, Customer Research & Insights
- City of North Vancouver
 - Michael Epp, Director of Planning
 - Andrew Devlin, Manager Transportation Planning

WHERE MATTERS...



WHEREVER

YOU

GO...

THERE

YOU

ARE

Executive Summary

Where Matters II documents public health and climate change win – win “co-benefits” from creating walkable communities with access to greenspace. Where Matters II investigated relationships between the built and natural environment where people live and the prevalence of physical and mental chronic diseases and sense of community. The physical environment where we live, work, and play shapes our activity and travel patterns which in turn impacts our wellness and vehicle emissions. Health and climate change are both impacted by the location and design of transportation and land use decisions. Demand for evidence linking built and natural environment features with our individual health and the health of the planet (e.g. climate change) is featuring more prominently within local, regional, provincial, and federal decision-making contexts to help shape investment priorities.

Where Matters II is a multi-sectoral (government, academia, industry) interdisciplinary (public health, urban planning, transportation) collaboration. Primary funders are the Ministry of Transportation and Infrastructure, and the Real Estate Foundation of BC; who along with Metro Vancouver, TransLink, and the City of North Vancouver sponsored this project. WMII leverages and spatially integrates physical environment data with health outcome and travel data to assess causal impacts of transportation and land use actions on chronic disease, and associations with travel patterns and GHG emissions.

Walkability was measured consistently in 2006, 2011, and 2016 creating the ability to document how lower mainland communities have changed over time. This data along with greenspace and other social environment predictors was spatially joined with health outcome and travel data (see Figure 0-1).



Figure 0-1: Health and Climate Impacts of the Built and Natural Environment

Where Matters II provides a blueprint to track how communities are changing over time; and tracking how these changes impact public health and climate change. Tracking physical changes to the built environment over time and linking it with travel and health outcome data provides planners and decision-makers with a tool that links the health of a population and the environment with community design. WMII utilizes the Vancouver Walkability Index¹, TransLink’s 2017 travel survey data, the BC Generations Health Survey, Metro Vancouver’s Greenspace data, and air quality

¹ Developed by Dr. Lawrence Frank and researchers at the Health & Community Design Lab (HCDL). Dr. Frank led this work as the Bombardier Chair in Sustainable Transportation over a 17 year period at the University of British Columbia.

data from the Canadian Urban Environmental Health Research Consortium (CANUE). The conceptual study design shown in Figure 0-2 captures how transportation, land use, pedestrian design, and greenspace investments through travel and activity patterns affect our behaviours and exposures. These factors result in biological responses such as weight, inflammation, and stress which through time impact physical and chronic disease and downstream costs.

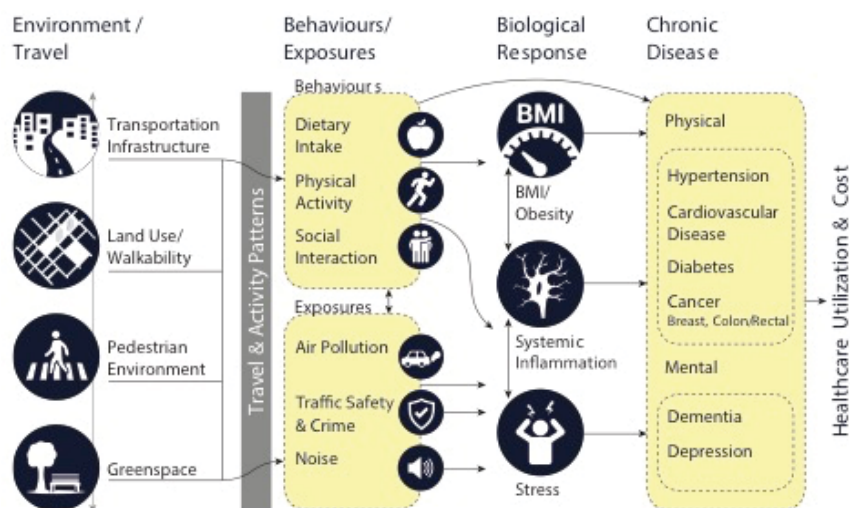


Figure 0-2: Conceptual Framework²

Where Matters found significant reductions in diabetes, and cardiovascular disease rates and increases in sense of community for those living in more walkable areas of the Vancouver region. Where matters II builds on this

work and connects the same measures of walkability and community design with climate impacts. It also provides the ability to evaluate if health relationships with the built environment are causal. We can connect health outcomes more accurately to a person’s neighbourhood and assess if a change in neighbourhood results in a change in health.

Tracking Walkability Changes

Figure 0-3 shows changes in the four main components of walkability between 2011 and 2016 across Metro Vancouver. Increases in residential density were largely concentrated in the urban centres and frequent transit development areas in the region. Changes in commercial floor area ratio (FAR) were widespread for areas with existing commercial and retail land uses with concentrated pockets of high change in some outlying areas in Richmond, Surrey, and Langley.³ Land use mix shows relatively stable patterns across existing established mixed-use areas in Vancouver, Burnaby, and New Westminster, with larger changes in outlying and suburban areas. This is due to the fact that these previously single-use areas (e.g., residential subdivisions) are becoming more mixed with floor area from different land uses. Lastly, relatively limited change in intersection density was detected for the region with the exception of those outlying areas with greenfield development and significant new updates to the road network, especially in areas like Burke Mountain in Coquitlam and South Surrey.

² Frank, L. D., Iroz-Elardo, N., MacLeod, K. E., Hong, A. The pathways from built environment to health: Connecting behavior and exposure-based impacts. 2016. [Journal of Transport and Health](#).

³ Note that these areas may not exhibit high levels of commercial Floor Space Ratio (FSR); but have become more neighbourhood retail oriented.

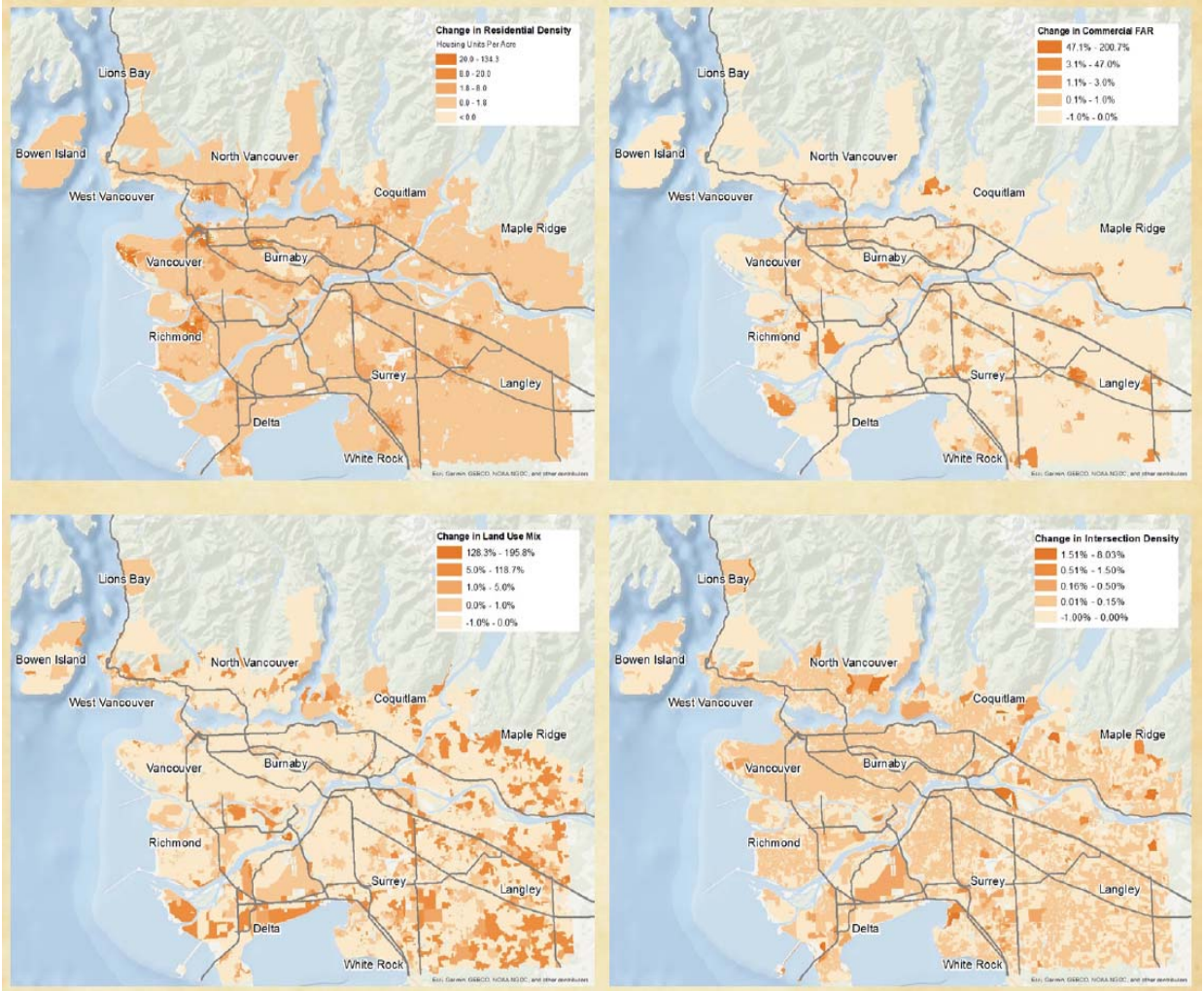


Figure 0-3: Longitudinal changes (2011-2016) by each component of walkability in Metro Vancouver.

Changes in residential density for four key areas experiencing the most population between 2011 and 2016 are shown in Figure 0-4 and include Downtown Richmond, Lonsdale in North Vancouver, False Creek/Olympic Village in Vancouver, and UBC. Similar findings can be mapped and quantified for the other metrics where changes were the greatest.



Figure 0-4: Longitudinal changes (2011-2016) in residential density for four key areas in the region.

The Where Matters II conceptual framework (Figure 0-2) and subsequent analyses show that changes in walkability metrics (e.g. residential density) result in changes in travel and related downstream health and GHG outcomes. Increased density creates demand for

and proximity to shops and services which increases land use mix. Density and mix along with connected street networks and retail built up to the sidewalk without large surface parking lots (higher retail FAR) supports walking and physical activity, less driving and sedentary time, and reduced vehicle emissions.

A 2021 walkability surface is now being created for Metro Vancouver providing measurement of these same walkability metrics at a 4th time points spanning a 15-year period. Tracking how communities are changing around these key walkability metrics supports the potential for piloting a performance-based approach to transportation funding and once again making the Lower Mainland a global leader in progressive land use and transportation planning. This would explore the prioritization of active transportation and transit funding based on local government achievement of performance-based goals to meet health and GHG reduction objectives. This is a form of performance-based funding that has been used in education and public health and can fuse a stronger link between regionally and provincially led transportation funding with local government-controlled land use planning.

Greenspace Access & Exposure

Road-based network buffers were developed to analyze Metro Vancouver's Land Cover data layer which allowed us to more accurately measure the proportion of different types of natural and developed land uses accessible to an individual. Three greenspace indicators were utilized for this study: 1) tree canopy coverage, 2) Normalized Difference Vegetation Index (NDVI), and 3) access to developed parks. Metro Vancouver had a median proportion of about 25% tree canopy coverage varying from <1% to 96% coverage⁴ at the postal code level. Nearly all postal codes evaluated (98.5%) were within 1 kilometre of a park 1-hectare in size or larger. Seventy-four percent of postal codes had a park at least 1-hectare in size within 400 metres. Greenspace was used to predict physical and mental health outcomes.

Figure 0-5: Metro Area Land Cover



Travel & Climate Change

Travel data from TransLink's 2017 travel survey on over 28,000 households containing 200,000 trips reported over a 2-day period was used to evaluate how travel habits and travel-related emissions relate with walkability and other factors. Higher levels of walkability are associated with increased walking and transit use, and fewer motor vehicle

⁴ Median tree canopy coverage for the region was 24% for 400 metre buffer neighbourhoods and 26% for 1-kilometre buffer neighbourhoods.

trips (Figure 0-6). The proportion of trips by car declined from 92 to 44 percent and walking increased from 5 to 35 percent and transit rose from 3 to 17 percent from the least to the most walkable areas of the region. Chapter 4 results convey that overall relationships between travel patterns and walkability remain significant after controlling for regional accessibility, vehicle ownership, income, and other factors. Results also show that mean per capita vehicle kilometers traveled declined from 11.92 to 5.83 per day from the least to the most walkable areas of the region.

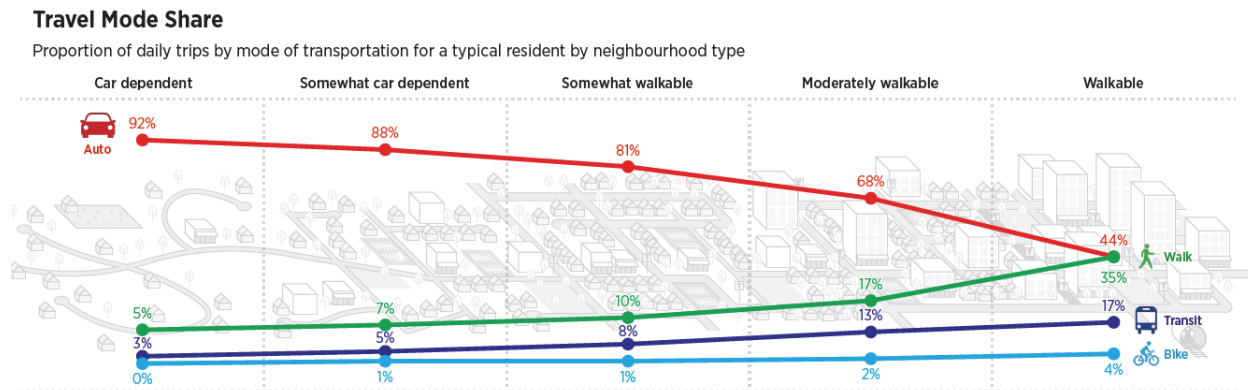


Figure 0-6: Travel mode share by walkability

Time in cars is a sedentary activity while walking and biking are forms of physical activity. Figure 0-7 shows a decline from 37 to 19 minutes of time in cars and a reduction from 23 to 9 kilometres traveled from the least to the most walkable areas. Conversely, walk and bike time rose from 2 to 14 minutes per day from the least to the most walkable areas.

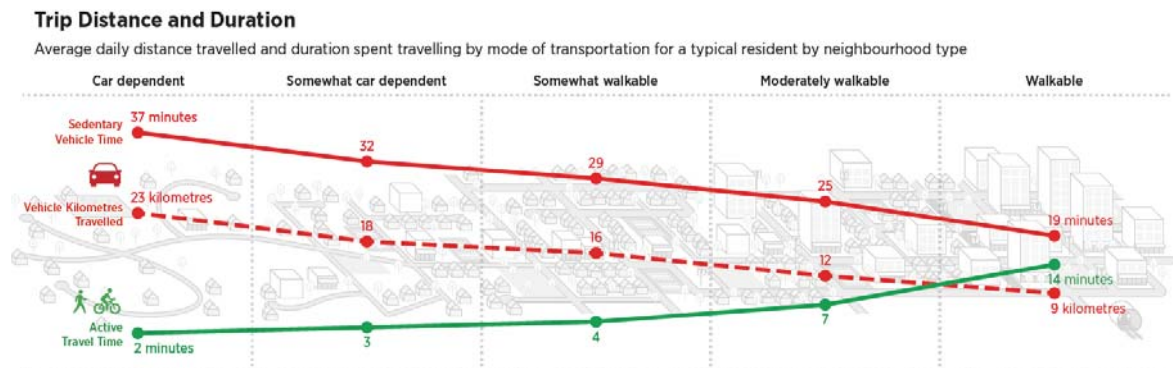


Figure 0-7: Distance and Duration

Comprehensive lifecycle emissions estimates were generated for each reported trip, and models were developed of daily greenhouse gas and local air pollutant emissions, dependent on the same explanatory variables. Model results in Chapter 5 show that emissions were significantly lower in more walkable neighbourhoods when adjusting for regional accessibility, vehicle ownership, income, and other factors. Travel-related GHG emissions declined nearly threefold from 17 to 6 kilograms per person / day (Figure 0-8).

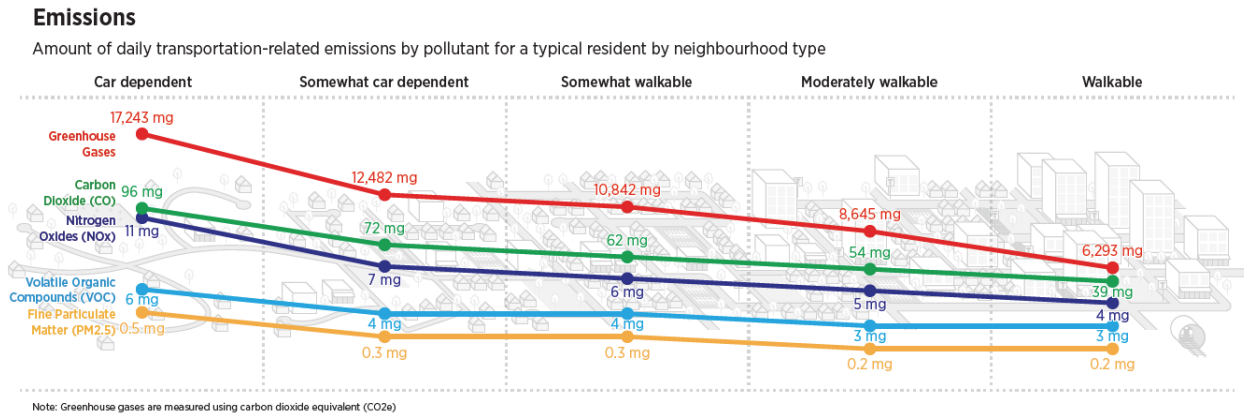


Figure 0-8: Average daily emissions from travel by quintile of walkability

Travel-related vehicle emissions have well-documented adverse health impacts. Where Matters estimated per capita daily travel-related amounts of Volatile Organic Compounds (VOCs), Oxides of Nitrogen (NO_x), Small Particulate Matter (PM_{2.5}), and Carbon Monoxide (CO). Overall, those living in walkable areas generated between half to a third as much of these pollutants as those in the most car-dependent areas of the region (see Figure 0-8). CO declined from 96 to 39, NO_x declined from 11 to 4, VOC declined from 6 to 3, and PM 2.5 declined from 5 to 2 milligrams per day. Detailed emissions estimates that account for vehicle type and fuel, congestion level, vehicle occupancy, and other key factors.

Community Health Impacts

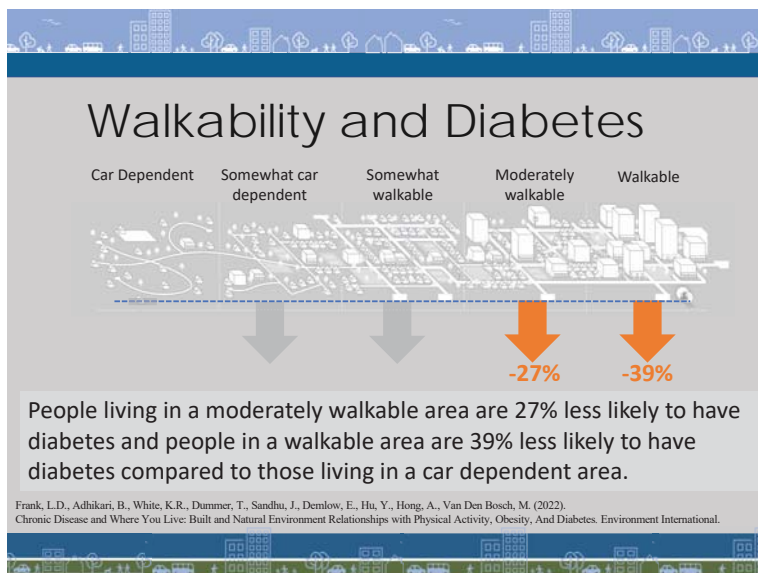
Chronic disease relationships with and impacts of the built and natural environment were estimated using the BC Generations Project (BCGP), a database of 30,000 British Columbians aged 35-69 years which represents. BCGP is a component of the Canadian Partnership for Tomorrow's Health (CanPath) Pan-Canadian prospective health cohort. This dataset was established over the past decade as a research platform for evaluating the genetic, behavioural and environmental causes of cancer and other chronic diseases. BCGP collects health, lifestyle, occupation, residential history, diet and physical activity, socio-demographic, behavioural and health-related data. Walkability datasets were linked with BCGP participants allowing us to investigate the causal impact of exposure to walkable versus car-dependent environments over time and how changes in walkability impact chronic disease and health behaviours.

Obesity, Hypertension & Diabetes

Obesity and obesity-related diseases continue to adversely impact health and economic indicators across low, middle and high income countries. Overweight and obesity are linked to increased risk of numerous chronic conditions including type 2 diabetes mellitus (T2DM) and high blood pressure (HBP), which are leading causes of cardiovascular disease and premature mortality globally. Living in walkable environments has been linked to significantly higher levels of physical activity via active travel. Among the Metro

Vancouver sample, obesity showed a 16% prevalence rate, with 12% being treated for hypertension, and only 2% being treated for type 2 diabetes.

We evaluated how changes in walkability over time impacted obesity. A reduction in the prevalence rate of obesity was observed with increased levels of walkability. **A 1-unit increase in the walkability change score was associated with a 9% reduction in odds of becoming obese.** When compared to the least walkable areas, those participants living in the most walkable areas had a 51% lower odds of becoming obese. This association was further reinforced by now-published evidence from Where Matters I. Figure 0-9 shows residents in the most walkable areas of the region have a 39 percent lower odds of having diabetes compared with those in the most car-dependent areas.



This relationship was tested longitudinally in the current study where change in walkability over a short time frame (5.5 years) was found to be an insufficient duration of exposure to cause downstream chronic health impacts such as type 2 diabetes or hypertension (at the 95% confidence level). However, other studies have begun to document causal relationships.

Figure 0-9: Walkability & Diabetes Risk⁵

Cancer Risk

Cancer is the leading cause of death in Canada with lung, breast, colorectal, and prostate cancer accounting for approximately half of the cancer cases diagnosed. Two out of five Canadians are expected to receive a diagnosis of cancer in their lifetime resulting in one in four cancer-related deaths after diagnosis. Despite advances in detection and treatment, lung cancer is the leading cause of death in Canada with a 5-year survival of 19%. Little research has effectively linked built or natural environment features with Cancer outcomes. We found that increases in walkability were linked with decreasing trends for lung cancer hazards while a decreasing trend in risk for colorectal cancer was observed for participants with higher NDVI exposures but neither result was significant at the 95 percent confidence level. Potential protective trends for greenness and walkability were identified for certain cancer types but more research is needed on a larger sample.

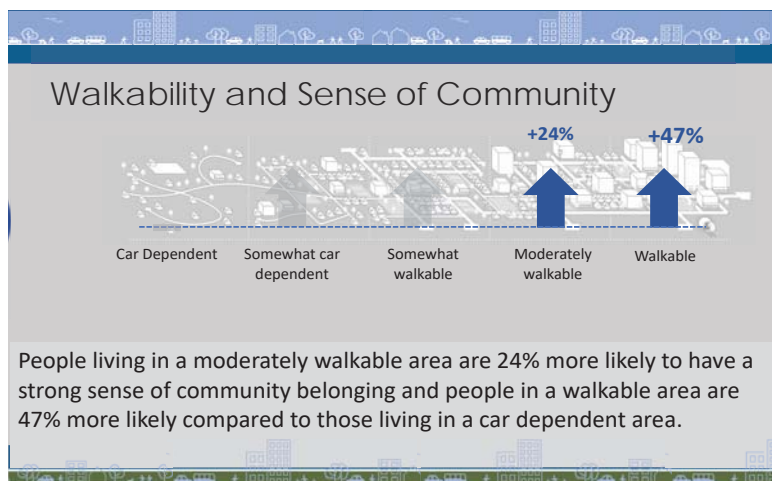
⁵ Frank, L.D., Adhikari, B., White, K.R., Dummer, T., Sandhu, J., Demlow, E., Hu, Y., Hong, A., Van Den Bosch, M. (2022). Chronic Disease and Where You Live: Built and Natural Environment Relationships with Physical Activity, Obesity, And Diabetes. Environment International. <http://doi.org/10.1016/j.envint.2021.106959>

Mental Health and Sense of Community

Mental disorders have a significant impact on the global burden of disease, affecting communities and people of all ages in both high and low-income countries. Sense of community and concern over social isolation has become a major mental issue in recent years.

Figure 0-10: Walkability & Sense of Community

In 2023, the US Surgeon General released a major report on social isolation and similar policy discussions are underway in Canada. Where Matters I found participants living in the most walkable areas of the Vancouver region were 47% more likely to report having a strong sense of community compared with those in the most car-dependent areas. Figure 0-10 reports these statistically significant results.⁶



Depression stands as a significant public health issue affecting 344 million individuals globally in 2019, and 4.7% of Canadians aged 15 and older exhibited it in 2012. Anxiety disorders stand as the second most common mental disorder globally, affecting approximately 301 million individuals in 2019, and 14% of Canadians aged 12 in the same year. We did not observe any significant association between walkability and depression.

However, participants in the most walkability areas were 1.74 times more likely to report experiencing anxiety compared to those living in the least walkability areas. Participants living in areas with very high walkability had statistically significant increased odds of experiencing anxiety, even after adjusting for demographic, lifestyle, and health-related variables. These results are counter to results suggesting a higher sense of community and social capital in more walkable areas. More work is needed to understand the underlying mechanisms of this potential relationship and its generalizability.

⁶ Results are based on My Health My Community Survey Data Collected by Vancouver Coastal Health Authority. Where Matters I: Health & Economic Impacts of Where We Live, University of British Columbia, 2019.

Summary and Conclusions

Findings presented in this report support GHG reduction and health promotion policies at the Provincial and Regional levels. Transportation and public health constitute two of the biggest Provincial responsibilities and perhaps the largest expenditures. These two issues are interrelated; yet institutionally separated. Both benefit from walkability and are adversely impacted by car dependence. Transportation investment decisions have considerable public health consequences. Results support Metro Vancouver's Regional Growth Strategy and TransLink's Transport 2050: Regional Transportation Strategy. Results further underpin the Ministry of Transportation and Infrastructure's CleanBC Roadmap to 2030. Findings support recently enacted Provincial bills 44, 46 & 47 which include a wide range of actions to increase density across most of BC municipalities primarily in association with transit. Bill 44 requires local governments to amend zoning bylaws to increase permitted density in areas currently zoned single-family or duplexes.

Residents within the more walkable areas of the lower mainland generated a third to half as much emissions as those in the most car-dependent areas and are at lower risk of several obesity-related chronic diseases. However, the most walkable parts of the lower mainland are also the least affordable and the less fortunate are priced out of the places with the best health outcomes. The promotion of walkability as a population health and GHG reduction solution requires mechanisms to make it more affordable to the less fortunate. Chronic disease is concentrated in the most underserved and constitutes a massive economic burden in BC and across Canada.

In 2015, the estimated cost of chronic disease was \$7.8 billion and significant portion of the overall provincial budget (BCCDC). Where Matters I documented higher rates of chronic disease in the most car-dependent areas of the lower mainland. The estimated costs of chronic disease are massive. One study by the Chronic Disease Alliance of Canada in 2017 found that the direct cost of Chronic Disease accounts for about 58% of the annual health spending in Canada (CDPAC / APMCC 2017). Transportation and health care constitute two of the biggest Provincial expenditures. Findings from Where Matters I and II studies documents currently externalized direct and indirect health-related impacts and costs of transportation and land development decisions. It presents a dynamic 5-year surveillance approach to quantify and internalize impacts into future decision-making processes.

A broad range of findings presented confirm these relationships built around a dynamic model where changes to walkability over time are captured and related to health and travel-related climate change outcomes. Living in a more walkable environment is associated with generating less harmful emissions, more physical activity, and lower obesity, diabetes, and cardiovascular disease rates. Where Matters provides a model for tracking key features of the physical environment that impact health and climate change – two of the most pressing societal / provincial mandates. Where Matters has measured walkability at the postal code level using parcel-level land use data at what will soon be 4 time points and linked with the census in a consistent manner. This project shows how changes in walkability impact obesity and is presented as a test case. Tracking changes

in access to greenspace can also be done consistently over time and along with walkability can be linked with a broader array of travel, emissions, and health outcomes.

Tracking changes in those features of the built and natural environment that logically impact health and climate change is arguably a necessary form of surveillance given the broad array of population-level consequences of these actions. A dynamic change detection framework is presented that can further be used as a decision support tool to guide infrastructure investments and land use actions. A performance-based approach to transportation funding could be introduced whereby at least some portion of investments in transportation infrastructure is awarded based on the achievement of positive changes to the built and natural environment. This concept is presented as one method to further strengthen the link between local government-led land use decisions and regional and provincially-led transportation investment processes.

To: Regional Planning Committee

From: Laurie Bates-Frymel, Senior Planner, and Agatha Czekajlo, Senior Policy and Planning Analyst, Regional Planning and Housing Services

Date: March 15, 2024 Meeting Date: April 5, 2024

Subject: **Tree Canopy Cover and Impervious Surface – 2020 Update**

RECOMMENDATION

That the MVRD Board:

- a) receive for information the report dated March 15, 2024 titled “Tree Canopy Cover and Impervious Surface – 2020 Update”; and
 - b) share the findings and datasets with member jurisdictions with an offer of a staff presentation to Council upon request.
-

EXECUTIVE SUMMARY

In 2020, impervious surface covered 54 percent of lands within Metro 2050’s Urban Containment Boundary. This represents an increase of 4 percent since 2014, with most jurisdictions seeing an increase in imperviousness. In 2020, tree canopy covered 31 percent of lands within the Urban Containment Boundary. This represents a decrease of 1 percent since 2014, with the majority of jurisdictions experiencing loss, primarily associated with greenfield development and densifying urban areas. Increased growth and intensification pressures, as well as implementation of the new provincial housing legislation allowing greater intensification of urban lots, will likely lead to further tree canopy cover losses and impervious surface increases. However, with the implementation of progressive tree retention and urban forest expansion strategies, it is possible to offset these losses.

With the adoption of *Metro 2050*, a regional target was introduced to increase the total regional tree canopy cover within the Urban Containment Boundary to 40 percent by the year 2050. *Metro 2050* also includes an action for Metro Vancouver to collect tree canopy cover and impervious surface data and share it with member jurisdictions. Regional tree canopy cover, impervious surface, and potential planting area datasets have been updated based on the most recent regional data from 2020 and compared with measurements taken in 2014.

PURPOSE

To provide the Regional Planning Committee and MVRD Board with the latest data update on the status of tree canopy cover and impervious surface across the urban part of the region.

BACKGROUND

Adopted by the MVRD Board in February 2023, *Metro 2050* commits Metro Vancouver to collect and maintain tree canopy cover and imperviousness data, and to share these datasets with member jurisdictions. *Metro 2050* also includes a regional target to “increase the total regional tree canopy cover within the Urban Containment Boundary from 32% to 40% by the year 2050”.

2020 REGIONAL TREE CANOPY COVER AND IMPERVIOUS SURFACE REPORT

Tree canopy refers to the leaves and branches, and their coverage can be identified by the ground area they cover when viewed from above. Impervious surface, such as paved roads and buildings, are hard surface areas that allow very little or no water to pass through.

Using 5 metre resolution land cover classification data from 2020 (the most recent regional land cover data available), Metro Vancouver has summarized tree canopy cover and impervious surface for various geographies in a technical report titled “2020 Regional Tree Canopy Cover and Impervious Surface in Metro Vancouver” (Reference 1). The 2020 tree canopy cover and impervious surface data were compared to the previous regional datasets to assess change between 2014 and 2020. In addition, the technical report includes projections of future tree canopy cover levels as greenfield and infill development continue, as well as a number of recommendations to retain and enhance tree canopy cover while reducing impervious surface. The technical report and associated data will be posted on Metro Vancouver’s website and Open Data Portal after the Board receives them. It is noted that several Metro Vancouver member jurisdictions have conducted finer-resolution tree canopy analyses within their boundaries, and some have also reported change over time. Metro Vancouver’s analysis complements this work and provides a consistent regional-scale assessment that fills data gaps for municipalities that do not currently have local mapping.

Why are Tree Canopy Cover and Impervious Surface Measurements important?

Trees provide a range of important ecosystem services that benefit humans such as shading, cooling, carbon sequestration, stormwater management, and physical, mental, and social well-being (References 2 and 3). Aside from monitoring progress towards the urban tree canopy target of *Metro 2050*, measuring tree canopy cover is a simple way to determine the extent of the region’s urban forest and the magnitude of services it provides; this is particularly important to measure in the context of this rapidly urbanizing region. In contrast, impervious surface is associated with many of the negative effects of urbanization, such as higher temperatures (i.e., the ‘Urban Heat Island’ effect) and increased flood risk, hydrological cycle disruptions, and poor water quality, all of which can impact ecological and human health. Measuring the level of impervious surface across a landscape gives an indication of the potential extent of these negative effects.

Although tree canopy cover and imperviousness are ecological health indicators, their connection to factors such as urban temperatures and stormwater management also means they are good indicators of how resilient communities may be to climate change-related impacts. Looking more closely at whether these indicators are distributed equitably can also help to identify communities or populations that may be more vulnerable to risks and receiving fewer ecosystem service benefits.

Tree Canopy Cover and Impervious Surface Levels and Change Since 2014

The technical report analyzes change since 2014 and draws the following key conclusions:

- In 2020, tree canopy covered 31 percent of lands within the Urban Containment Boundary (UCB).
- Most of the urban tree canopy cover was located within residential areas (38 percent) and recreation, open space and protected natural areas (36 percent).

- Private lands had a relatively low tree canopy coverage (27 percent), but the majority of tree canopy cover in the UCB (57 percent) was found on private land – primarily because the majority of land in the UCB (69 percent) is privately-owned.
- Between 2014 and 2020, **tree canopy cover decreased by 1 percent** within the UCB (from 32 to 31 percent). Some member jurisdictions saw increases in tree canopy cover, but most experienced loss (Figure 1). Concentrated areas of loss generally corresponded with planned greenfield development and densifying urban areas.
- In 2020, impervious surface covered 54 percent of lands within the UCB.
- Most of the UCB’s impervious surface was located within residential areas (39 percent) and road rights-of-way (27 percent). Impervious surface on private lands was relatively high (57 percent).
- Between 2014 and 2020, **impervious surface increased by 4 percent** within the UCB (from 50 to 54 percent). Some member jurisdictions saw reductions in impervious surface, but impervious surface increased for most. Similar to areas that observed tree canopy cover loss, areas of increasing impervious surface generally corresponded to greenfield and industrial development.
- Approximately 21 percent of the tree canopy cover and 19 percent impervious surface within the UCB was found within single-detached residential neighbourhoods.

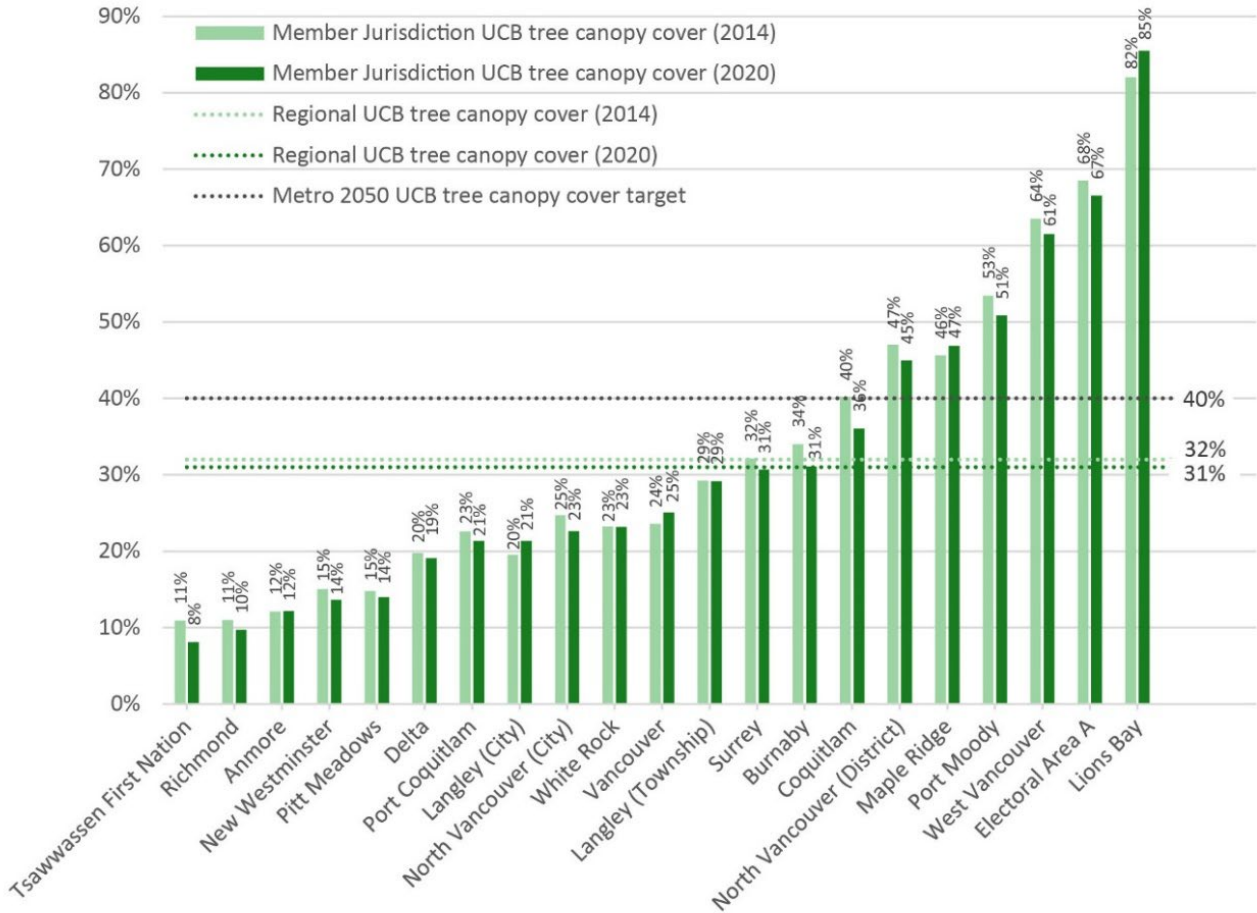
If the region’s remaining greenfield lands within the UCB are developed and single-detached housing stock is redeveloped as expected over the next 20-30 years, tree canopy cover is projected to continue to decrease from 31 percent to 29 percent over this timeframe. However, this estimate did not consider implementation of the newly-adopted provincial housing legislation (see ‘Potential Impact of the New Provincial Housing Legislation’ section below).

Tree Planting to Offset Losses and Achieve the Metro 2050 Tree Canopy Cover Target

Municipalities, including several Metro Vancouver member jurisdictions, often use tree planting programs and policies as a way to maintain or expand tree canopy, which can also help to offset anticipated future losses from development and redevelopment. However, to offset the projected decline in UCB tree canopy cover over the next 20-30 years it is estimated that roughly 1,990 hectares of land within the UCB would have to be dedicated to tree planting. An additional 8,000 hectares (a total of 9,900 ha) of tree canopy cover would be required to achieve the *Metro 2050* UCB tree canopy cover target (i.e., 40 percent).

Achieving the *Metro 2050* UCB tree canopy cover target will be challenging. Metro Vancouver’s analysis indicates that about 30,000 hectares of land within the UCB is currently potentially available for tree planting. This includes non-tree vegetation, soil patches, barren surfaces, and pavement that does not fall on roads, which under the right circumstances, could be modified to increase tree canopy cover. Further site-level assessments would be needed to determine what areas have the greatest potential to increase tree canopy cover through tree planting.

Figure 1. Tree Canopy Cover within the Urban Containment Boundary by member jurisdiction in 2020 and 2014, compared to the Metro 2050 target



Note: Belcarra and Bowen Island are not included because they fall outside the UCB. Lions Bay was removed from the UCB in 2021.

Potential Impact of the New Provincial Housing Legislation

More information about the pace and scale of uptake is needed to fully assess the potential impacts on tree canopy cover from the intensification of single-detached neighbourhoods and transit-oriented areas required by the recently-adopted provincial housing legislation. However, it is anticipated that the recent legislative changes will make it even more challenging for the region to achieve its urban tree canopy target. That will continue to be monitored and will likely be a key consideration during the next update of the tree canopy cover and impervious surface dataset. Staff are considering how best to track intensification trends and will continue to monitor and report out on change over time.

Discussions with Member Jurisdiction Staff

The “2020 Regional Tree Canopy Cover and Impervious Surface in Metro Vancouver” technical report was shared with the Regional Planning Advisory Committee - Environment Subcommittee during its meeting on February 15, 2024, and the Regional Planning Advisory Committee on March 15, 2024. Member jurisdiction staff expressed serious concerns about limited space for trees, particularly in light of other competing space requirements (e.g., stormwater management, utility

infrastructure, housing intensification). They also recognized challenges associated with young tree mortality during drought conditions. Member jurisdiction staff were encouraged to consider the best practices and alternatives provided in the Metro Vancouver Tree Regulations Toolkit, which was recently updated with land use / zoning-related examples and is being presented in a separate staff report on this Regional Planning Committee meeting agenda (Reference 4), as well as Metro Vancouver’s Urban Forest Climate Adaptation resources for advice about tree species climate suitability, necessary soil volumes, and other considerations (Reference 5).

NEXT STEPS

It is recommended that the Tree Canopy Cover and Impervious Surface report findings and data should be forwarded to staff from member jurisdiction CAOs and City Managers. Staff will also promote the findings via social media and staff are also available to present the report and findings to Councils upon request. The main objective of the social media outreach will be to increase public awareness about the important benefits of urban forests such as shading, cooling, carbon sequestration, stormwater management, and physical, mental, and social well-being.

The 2020 tree canopy cover and impervious surface data is the most recent regional-scale data available. Regular updates of the data are important to track long-term trends and to support *Metro 2050’s* performance monitoring. Regional remote sensing data is collected every 6 years and therefore the next tree canopy cover and impervious surface update is planned for 2026. The collation of remote sensing data from across the region, generation of the regional land cover classification dataset, select site validation, and spatial analysis takes time. Based on previous update timelines, staff anticipate that the next report will be completed in 2028.

ALTERNATIVES

1. That the MVRD Board:
 - a) receive for information the report dated March 15, 2024 titled “Tree Canopy Cover and Impervious Surface – 2020 Update”; and
 - b) share the findings and datasets with member jurisdictions with an offer of a staff presentation to Council upon request.

2. That the MVRD Board receive for information the report dated March 15, 2024 titled “Tree Canopy Cover and Impervious Surface – 2020 Update” and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

There are no financial implications to this report. Work associated with measuring these indicators was completed as part of the Regional Planning annual work program.

CONCLUSION

The 2020 “Regional Tree Canopy Cover and Impervious Surface in Metro Vancouver” technical report concludes that in 2020 tree canopy covered 31 percent of the lands within the UCB, with variations among neighbourhoods and land use types. Impervious surface covered 54 percent of the lands within the UCB. Since 2014, regional tree canopy cover has decreased by 1 percent and impervious surface has increased by 4 percent within the UCB.

As the region’s remaining greenfield lands are developed and single-detached housing stock is redeveloped and intensified over the next 20-30 years, tree canopy cover in the UCB is projected to decrease from 31 to 29 percent. However, with the implementation of progressive tree retention and urban forest expansion strategies, it is possible to offset these losses and work towards the 40 percent tree canopy cover target for the region’s urban areas, as set out in *Metro 2050*. Changes to tree canopy cover and impervious surface will continue to be monitored and reported.

ATTACHMENT

1. Presentation re: Tree Canopy Cover and Impervious Surface – 2020 Update

REFERENCES

1. [2020 Regional Tree Canopy Cover and Impervious Surface in Metro Vancouver - Technical Report](#)
2. [The Urban Forest and Ecosystem Services: Impacts on Urban Water, Heat, and Pollution Cycles at the Tree, Street, and City Scale](#)
3. [Urban natural environments as nature-based solutions for improved public health – A systematic review of reviews](#)
4. [Metro Vancouver Tree Regulations Toolkit](#)
5. [Metro Vancouver’s Urban Forest Climate Adaptation Resources](#)

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Attachment 1



Tree Canopy Cover, Impervious Surface, and Tree Regulations

DATASET AND TOOLKIT UPDATE

Laurie Bates-Frymel
 Senior Planner (Environment),
 Regional Planning & Housing Services

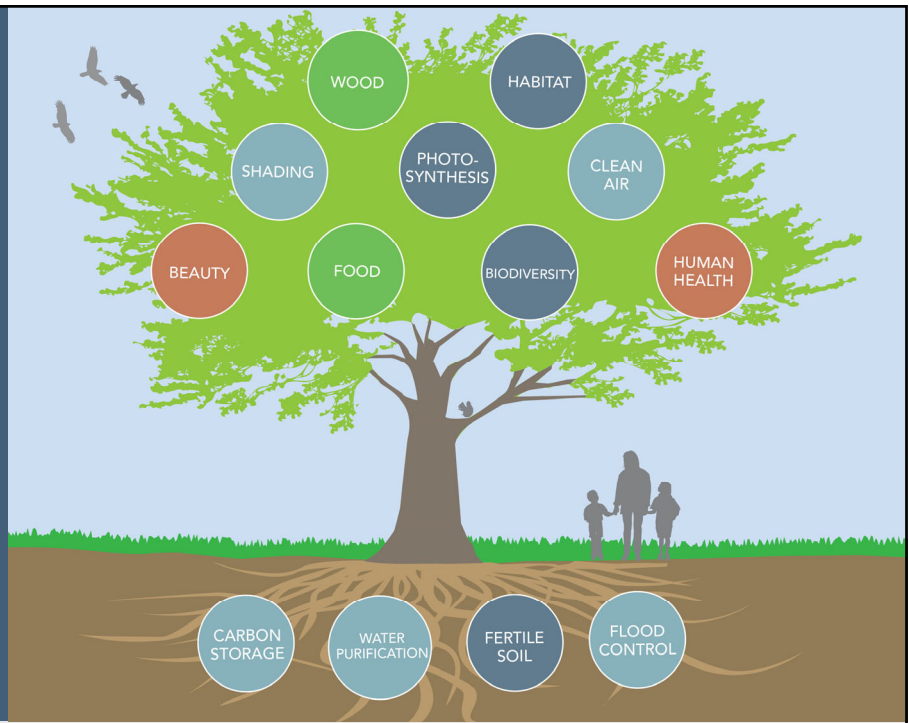
Agatha Czekajlo
 Senior Policy and Planning Analyst,
 Regional Planning & Housing Services

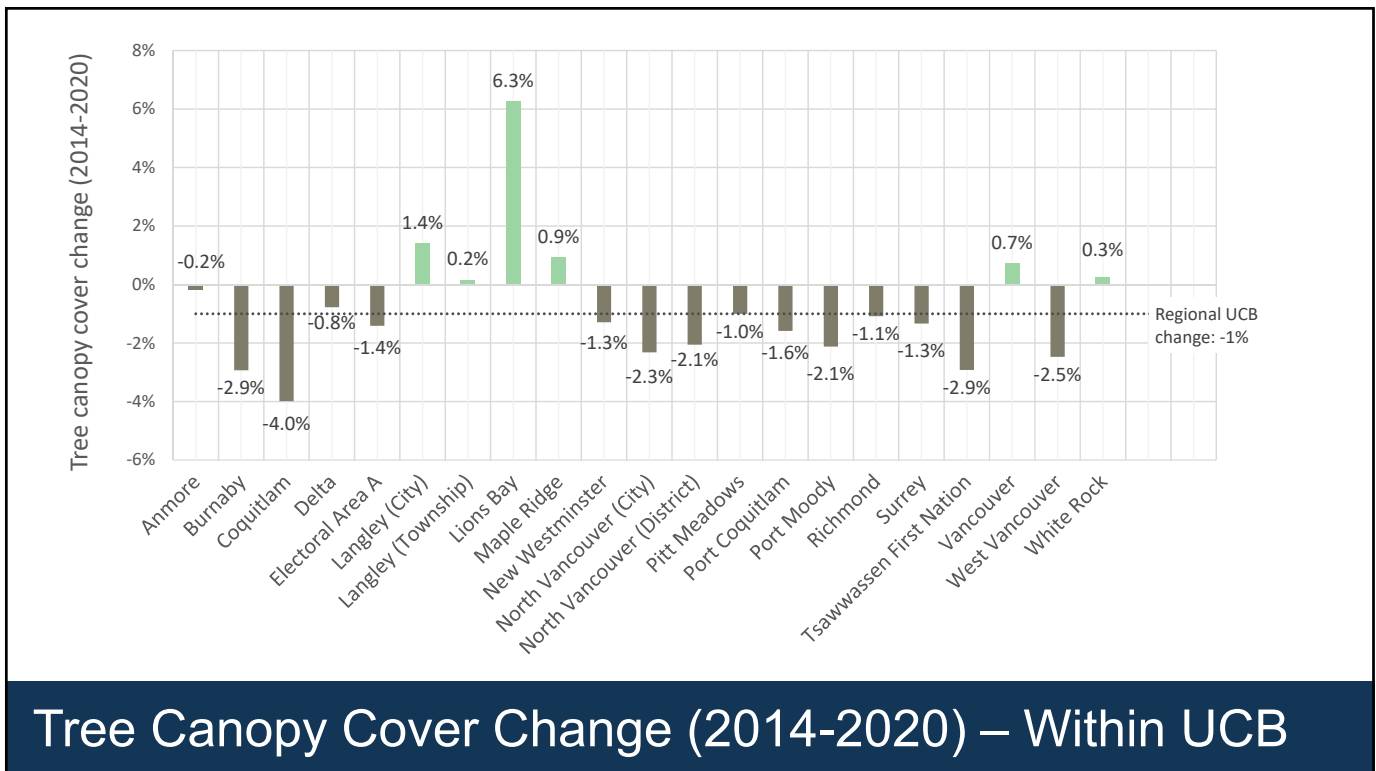
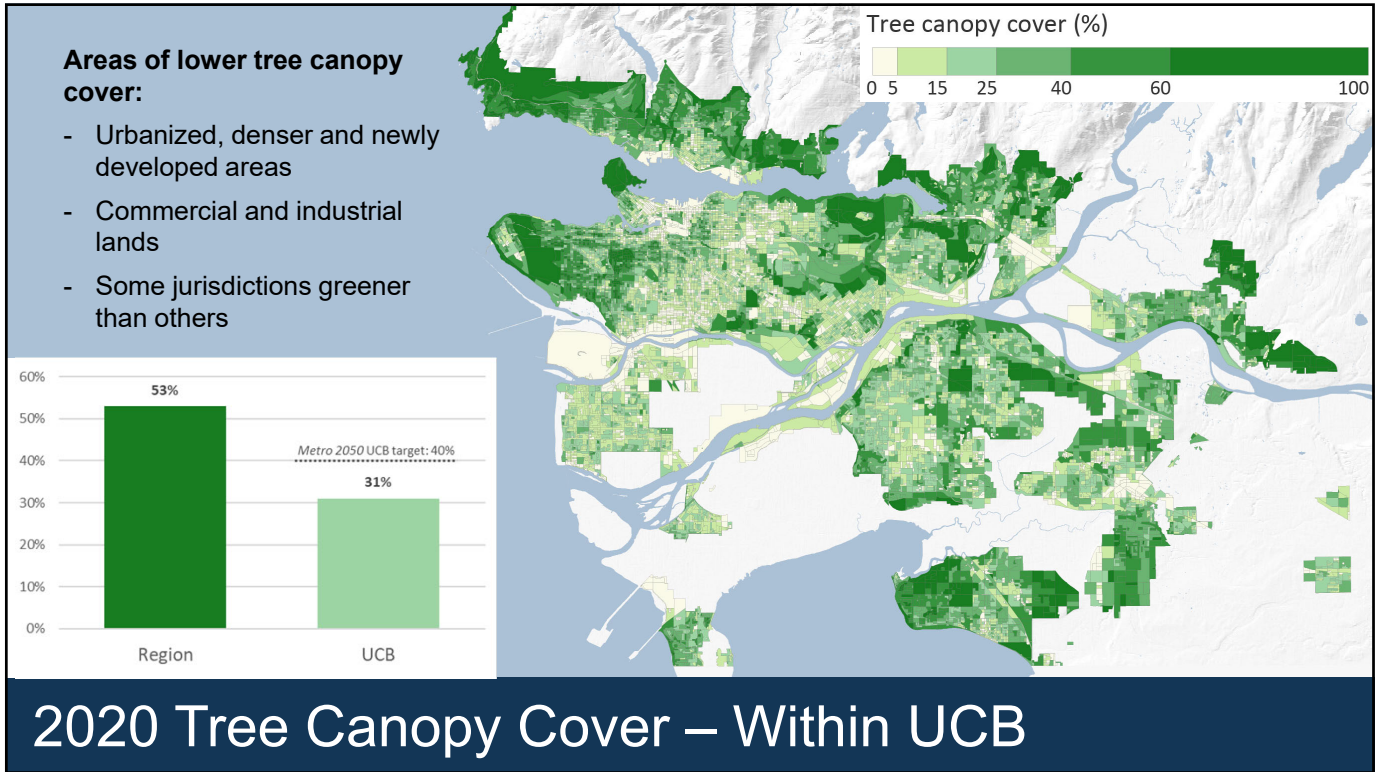
Edward Nichol
 Senior Planner,
 Regional Planning & Housing Services

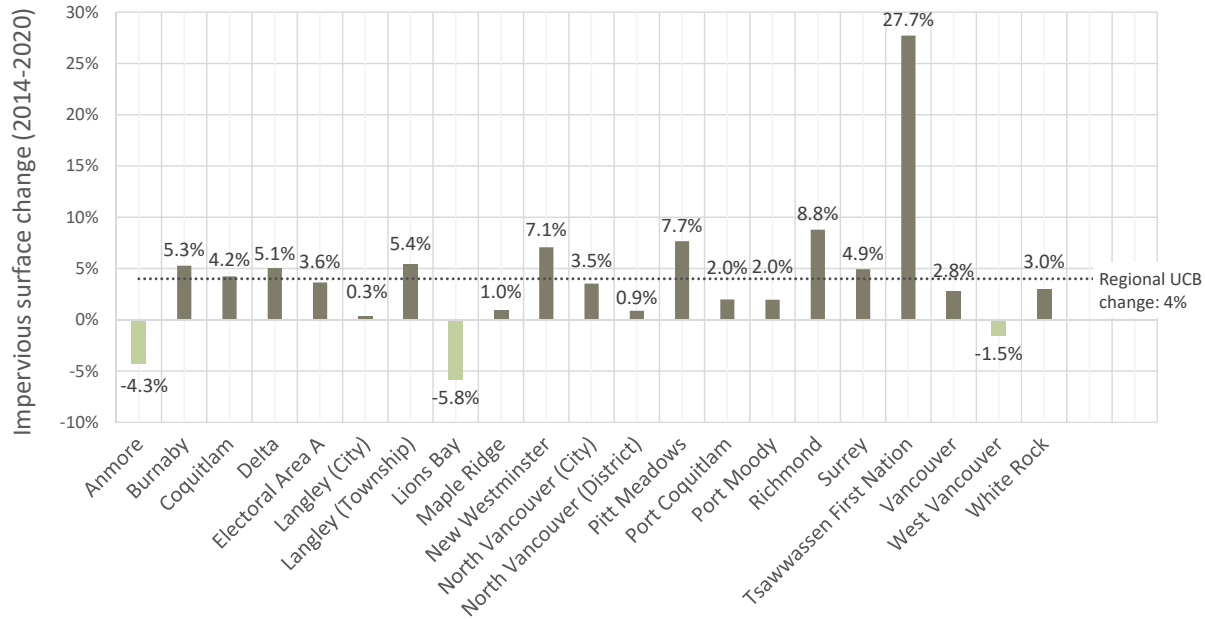
Regional Planning Committee – April 5, 2024
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Why measure
 ‘tree canopy
 cover’ and
 ‘impervious
 surface’?







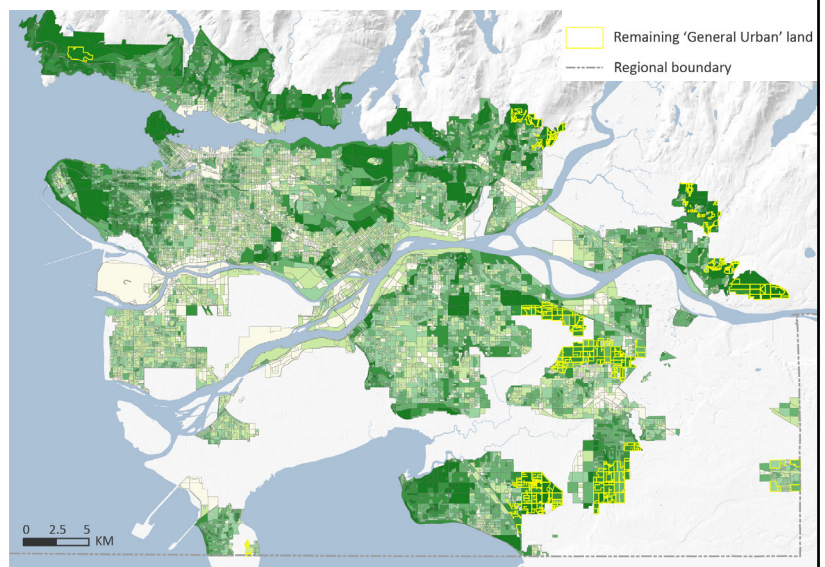
Impervious Surface Change (2014-2020) – Within UCB

FUTURE PROJECTIONS OF TREE CANOPY COVER

Tree canopy cover is projected to **decrease** from 31% to 29% due to continued development within the UCB

+1,990 ha of tree planting required to offset projected loss

+8,000 ha of tree planting required to reach *Metro 2050's* UCB tree canopy cover target of 40%



DATA SUMMARY

- Tree canopy cover in the Urban Containment Boundary (UCB)
 - **Decreased by 1%** between 2014 and 2020 (32% to 31%)
 - In 2020 - 38% on Residential lands, 27% on private lands
- Impervious surface in the UCB
 - **Increased by 4%** between 2014 and 2020 (50% to 54%)
 - In 2020 - 39% on Residential lands, 57% on private lands
- Tree Canopy Cover Future Projections for the UCB
 - Expected to **decrease from 31% to 29%***
 - 9,900 ha of tree planting in the UCB needed to offset this loss and reach *Metro 2050's* UCB 40% tree canopy cover target

TREE REGULATIONS TOOLKIT UPDATE

- **Toolkit Purpose:**
 - Guidance on regulatory tools that influence the preservation and growth of trees and tree canopy
- **Structure:**
 - Higher-level plans
 - Tools regulating land use
 - Tools regulating trees



TREE REGULATIONS TOOLKIT UPDATE

New Information On:

- Land use trends and tree canopy cover
- Considerations for canopy cover targets
- Land use bylaws and development permit areas
- Development, subdivision, and servicing bylaws
- Worksheets to assess regulatory framework and identify opportunities for improvement



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9



Thank you

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To: Regional Planning Committee

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

Date: March 8, 2024 Meeting Date: April 5, 2024

Subject: **Metro Vancouver Tree Regulations Toolkit Update**

RECOMMENDATION

That the MVRD Board:

- a) receive for information the report dated March 8, 2024, titled “Metro Vancouver Tree Regulations Toolkit Update”; and
 - b) forward the “Metro Vancouver Tree Regulations Toolkit Update” to member jurisdictions for information with an offer of a presentation to Councils upon request.
-

EXECUTIVE SUMMARY

This report highlights the updated Metro Vancouver Tree Regulations Toolkit. The findings indicate that, as the region develops, it is critical to require adequate space to retain or grow trees post-development, and that regulatory tools such as land use bylaws, development permit areas, and development, subdivision, and servicing bylaws, can support the foundation for long-term protection and growth of trees.

Originally developed by Diamond Head Consulting in 2021, the Toolkit provides guidance on regulatory tools that can be used to protect trees and increase tree canopy cover at the local level. In response to the ongoing challenges associated with preserving trees in this rapidly growing urban region, and working towards the regional urban tree canopy cover target in *Metro 2050*, Metro Vancouver again retained Diamond Head Consulting in 2023 to update the Toolkit with more robust information in the land use-focused sections of the document. That work has now been completed.

PURPOSE

To provide the Regional Planning Committee and MVRD Board with the updated Metro Vancouver Tree Regulations Toolkit.

BACKGROUND

Healthy trees provide communities with important ecosystem services, including shading and cooling, stormwater absorption, habitat, and carbon storage. Collectively, the trees within the public and private lands of a community (including the trees in parks, around buildings, along streets and in backyards) make up the urban forest. Since 2016, Metro Vancouver has supported local urban forestry efforts across the region by providing data and resources, convening practitioners, and advocating for innovative approaches that improve the health and resilience of the region’s urban forests, with the first iteration of the Tree Regulations Toolkit being completed in 2021. The Metro Vancouver Tree Regulations Toolkit has now been updated (Attachment 1).

TOOLKIT UPDATE

At its June 9, 2021 meeting, the Regional Planning Committee received the report “Metro Vancouver Tree Regulations Toolkit” (Reference 1). That report introduced the first iteration of the Toolkit, and noted that it may be updated in the future to add more substantial content to the land use-focused sections of the document.

The 2021 Toolkit focused on tools that primarily regulate trees (e.g., tree bylaws); additional content on tools that primarily regulate land use was included as supplemental information. In 2023 Metro Vancouver retained Diamond Head Consulting, the consultant behind the 2021 iteration, to update the Toolkit with more information on the land use-focused sections. The update was undertaken in response to the ongoing challenges associated with preserving trees in this rapidly growing urban region, and with the objective of updating the information to incorporate current best practices.

Urban Tree Canopy Cover and Impervious Surfaces

In 2024, Metro Vancouver’s Tree Canopy Cover and Impervious Surfaces dataset was updated; this update is also being presented in a separate report to the Regional Planning Committee in this meeting’s agenda package. The results show a decrease of 1 percent tree canopy cover within the region’s Urban Containment Boundary from the years 2014-2020. Metro Vancouver’s tree canopy cover is currently projected to continue to decline within the Urban Containment Boundary, primarily due to urban growth, development, and the intensification of land uses. These projections, in combination with the tree canopy loss observed between 2014-2020, highlight the need for innovative regulatory and supportive approaches to protect and retain trees at the local level through land use and development processes. This work will be critical for the region to reverse the current trends and move us towards a path to achieving the ambitious 40 percent tree canopy cover target set out in *Metro 2050*.

Toolkit Overview

The Metro Vancouver Tree Regulations Toolkit provides guidance on selecting and using regulatory tools that can help preserve trees and increase tree canopy cover based on best practices. Earlier iterations of the Toolkit were informed by survey results from consulting arborists and local staff across the region, as well as a review of scientific literature, practitioner guides, and bylaws from across Canada and the United States. Information is included on higher-level plans (such as regional growth strategies and official community plans), tools that regulate land use and influence the space available to retain or replace trees (such as zoning bylaws and subdivision and servicing bylaws), and tools that regulate trees as their primary purpose (such as covenants and tree bylaws).

The updated Metro Vancouver Tree Regulations Toolkit complements and supports several Metro Vancouver initiatives, plans, and policies, including:

- The *Board Strategic Plan 2022 - 2026*, which includes a priority action to support member jurisdictions to develop and implement effective policies and tools that will help the region achieve its targets to protect 50 percent of lands for nature and achieve 40 percent urban tree canopy (Reference 2);

- The *Climate 2050 Nature and Ecosystems Roadmap*, which includes an action for Metro Vancouver to provide data and resources to support urban forest management (Reference 3); and
- *Metro 2050*, which includes an action for member jurisdictions to adopt Regional Context Statements that include policy statements that: enable the retention and expansion of urban forests using various tools, such as local tree canopy cover targets, urban forest management strategies, tree regulations, development permit requirements, land acquisition, street tree planting, and reforestation or restoration policies, with consideration of resilience (Reference 4).

New Information Included in the Update

The section of the Toolkit dedicated to tools that primarily regulate land use has been updated. This section now includes new information on:

- current land use trends across the region and the implications for tree canopy cover and impervious surfaces;
- considerations for setting tree canopy cover targets;
- land use bylaws and development permit areas (including zoning bylaws, form and character development permit areas, climate change and energy conservation development permit areas, screening and landscaping bylaws, and development procedure bylaws);
- development, subdivision, and servicing bylaws; and
- worksheets to assess a local government's regulatory framework for protecting urban trees and to identify opportunities for improvement.

The Toolkit is organized based on relevancy for the public and private realms, and for tree retention and planting goals. Key bylaw components are described by their general purpose, core (recommended) components, and additional bylaw component options for consideration. Examples of bylaw components that have been successfully implemented by other jurisdictions are also included. The updated Toolkit includes icons and callout boxes to highlight the anticipated impacts and implications of recent provincial housing legislation changes on relevant bylaw components, where applicable.

Since the recent provincial housing legislation changes were announced towards the end of the Toolkit update process, additional work may be required in the future to better understand the impacts of the region's increased intensification of single-detached residential neighbourhoods, and determine how the housing legislation can be implemented in a way that maximizes tree retention.

NEXT STEPS

Staff will promote and share the Toolkit broadly throughout the region as a resource to inform urban forest planning and management, and encourage its use to update and strengthen local policies and regulations. It is recommended that copies of this staff report with the attached updated Metro Vancouver Tree Regulations Toolkit be forwarded to member jurisdictions for information with an offer of a presentation to Council upon request. The final report will also be posted on the Metro Vancouver website for download.

The Toolkit may be updated in the future, as needed. Metro Vancouver will continue to provide data and resources, convene with regional partners and practitioners, and advocate for innovative approaches to ensure a healthy and resilient regional urban forest.

ALTERNATIVES

1. That the MVRD Board:
 - a) receive for information the report dated March 8, 2024, titled “Metro Vancouver Tree Regulations Toolkit Update”; and
 - b) forward the “Metro Vancouver Tree Regulations Toolkit Update” to member jurisdictions for information with an offer of a presentation to Councils upon request.

2. That the MVRD Board receive for information the report dated March 8, 2024 titled “Metro Vancouver Regulations Toolkit Update and provide alternative direction to staff.

FINANCIAL IMPLICATIONS

This work was undertaken as part of Regional Planning’s regular work program and the MVRD Board-approved 2023 Regional Planning budget. The project cost was \$18,000.

CONCLUSION

The first iteration of the Metro Vancouver Tree Regulations Toolkit was developed by Diamond Head Consulting for Metro Vancouver in 2021. The Toolkit was developed to provide guidance on regulatory tools that can help protect trees and increase tree canopy cover at the local level. Metro Vancouver again retained Diamond Head Consulting in 2023 to update the Toolkit with more substantial information in the land use-focused sections of the document. As a next step, Metro Vancouver will promote and share the updated Toolkit broadly throughout the region as a resource to support urban forest planning and management.

ATTACHMENT

1. “Metro Vancouver Tree Regulations Toolkit – Second Edition”, dated March 2024

REFERENCES

1. [Metro Vancouver Tree Regulations Toolkit](#), Regional Planning Committee Report dated May 14, 2021
2. [Regional Planning Priority Actions in the Board Strategic Plan 2022-2026](#)
3. [Action 4.2 of the Climate 2050 Nature and Ecosystems Roadmap](#)
4. [Policy action 3.2.7. c\) ii of Metro 2050](#)

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Metro Vancouver Tree Regulations Toolkit

Second Edition



March 2024

Prepared by:



Commissioned by Metro Vancouver





Table of Contents

1.0 Introduction	1
1.1 Structure of the Toolkit	2
1.2 Toolkit Development	3
2.0 British Columbia’s Institutional Framework for Regulating Trees	5
3.0 Selecting the Right Tools and Options for your Community	9
4.0 Higher-level Plans	13
5.0 Tools Regulating Land Use	17
5.1 Current Land Cover and Considerations for Setting Land Use Canopy Cover Targets	18
5.1.1 Setting a Tree Canopy Cover Target	22
5.2 Land Use Bylaws and Development Permit Areas	24
5.2.1 Landscaping Standards	24
5.2.2 Planting Area Requirements	28
5.2.2.1 Making space for the planting area	30
5.2.3 Negotiated Development	33
5.2.4 Development Procedures	34
5.2.4.1 Procedural Considerations	34
5.3 Development, Subdivision and Servicing Bylaw	36
5.3.1 Procedural Considerations	36
5.3.2 Works and Services Standards for Trees in Boulevards	37
5.3.3 Landscaping Design Criteria and Standard Specifications	38



6.0 Tools Primarily Regulating Trees	43
6.1 Environmental Development Permit Areas	44
6.1.1 Identification of the Development Permit Area	45
6.1.2 Development Permit Area Guidelines	47
6.1.3 Other Types of Development Permit Areas	48
6.2 Covenants	49
6.3 Tree Bylaws	52
6.3.1 Bylaw Definitions	52
6.3.2 Exemptions	63
6.3.3 Prohibitions	64
6.3.4 Permitted Removal Reasons	65
6.3.5 Permit Application Information Requirements	68
6.3.6 Requirements and Incentives for Tree Retention and Replacement	70
6.3.7 Replacement Tree Planting Standards	76
6.3.8 Actions on Site	79
6.3.9 Securities	80
6.3.10 Penalties	84
6.3.11 Tree Bylaw implementation	85
7.0 Conclusion	87
8.0 References	89
Appendix 1. Practitioner Survey Results (2020)	
Appendix 2. Literature Review	
Appendix 3. Worksheet to Review Higher-Level Plans	
Appendix 4. Worksheet to Review Land Use Bylaws and Development Permit Areas	
Appendix 5. Worksheet to Review Development, Subdivision, and Servicing Bylaws	



Acknowledgements

Thank you to all the municipal staff and consulting arborists who answered our surveys in the fall of 2020. Thank you also to Edward Nichol and Marcin Pachcinski of Metro Vancouver, and Dr. Julian Dunster for their thorough review and comments on this Toolkit. The *Metro Vancouver Tree Regulations Toolkit* benefited from your input, guidance, and care.

TOOLKIT AUTHORS

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Camille Lefrançois	Mike Coulthard
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RECOMMENDED CITATION

Metro Vancouver. (2024). *Tree Regulations Toolkit - Second Edition*. Contract report prepared by Diamond Head Consulting.



1.0 Introduction

Trees provide Metro Vancouver communities with shade and cooling, intercept stormwater, store carbon, create habitat, and make our cities beautiful. Healthy forests in both urban and natural areas are an essential component of regional livability and resilience to climate change. However, the area covered by trees in Metro Vancouver’s urban areas (i.e., within the Urban Containment Boundary) is expected to decline from 32% to 28% over the next 20 to 30 years (Metro Vancouver, 2019). This canopy loss is anticipated due to development and lower density housing areas being re-developed as part of the region’s planned growth. At the same time, the urban forest is vulnerable to climate change, and unexpected canopy loss could occur in the region because of heat, drought, extreme weather events or pest and disease outbreaks. As a result, approaches to preserve trees and grow canopy cover need to consider a wide range of factors, from the impact of land use on the availability of permeable land to grow trees to the future climate suitability of tree species.

The *Metro Vancouver Tree Regulations Toolkit* (Toolkit) provides guidance for Metro Vancouver member jurisdictions on how they can develop comprehensive policy and regulations to preserve trees and grow tree canopy within British Columbia’s current legislative framework. Municipalities in British Columbia can use legislative tools

to off-set or prevent canopy loss and contribute to achieving *Metro 2050’s* 40% tree canopy cover target by 2050.

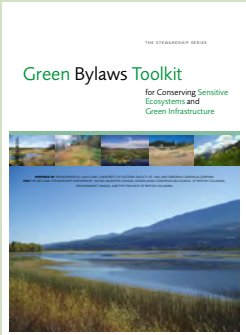
This Toolkit is a resource for municipal staff, decision makers and other practitioners, including planners, arborists, biologists, engineers and landscape architects, on using regulatory tools that influence the preservation and growth of trees and tree canopy. This Toolkit provides a framework for selecting regulatory tools to help achieve municipal tree preservation or canopy growth objectives.

No single best practices approach to regulating trees was identified during this review. The Toolkit therefore presents guidance based on best practices when available and recommends alternatives and options for consideration. Deciding on the most appropriate regulatory approach will require consideration of the community’s values and canopy cover objectives, as well as the budgetary implications for local governments and permit applicants.

This Toolkit is not legal advice. Users must conduct their own legal review of any bylaws, regulations, or policies developed using this Toolkit.

ADDITIONAL TOOLKITS AND GUIDANCE DOCUMENTS

There are several other useful guides and toolkits that may help readers and inform the development of a comprehensive set of bylaws to manage natural assets, including:



- The **Green Bylaws Toolkit for Conserving Sensitive Ecosystems and Green Infrastructure** (Stewardship Centre BC, 2021) provides guidance on tools for local governments to protect green infrastructure (natural and engineered).

- **Environmental Development Permit Areas: In Practice and in Caselaw** (Britton-Foster, Grant, & Curran, 2016) provides information about using Environmental

Development Permit Areas to protect riparian and terrestrial ecosystems. This report provides information about key components of environmental development permit areas (DPAs) and their judicial treatment in British Columbia.

- **Enhancing Climate Resilience of Subdivision and Development Servicing (SDS) Bylaws in the Columbia Basin: A Guidance Document** (Nelitz, Cooke, Curran, & Glotze, 2013) provides information to guide the update of subdivision and development servicing bylaws for the purpose of increasing climate resiliency and reducing the cost of building and operating infrastructure.
- The **Topsoil Bylaws Toolkit** (Curran, Dumont, Low, & Tesche, 2012) provides information and guidance for local governments to create effective topsoil policies that support rainwater management and reduce the impact of development.

1.1 STRUCTURE OF THE TOOLKIT

This Toolkit provides:

1. An overview of the available approaches to regulating trees in British Columbia
2. Considerations for selecting the right tools for your community
3. Descriptions of each tool including:
 - a. **Higher-level plans** that can support tree preservation or canopy growth through their vision and policy guidance (regional growth strategies and official community plans)
 - b. **Tools regulating land use** that influence the space available to retain or replace trees (land use bylaws and development permit areas and development, subdivision, and servicing bylaws)
 - i. The Toolkit provides information about:
 - Key components to retain or plant trees on private and public land
 - The core tool(s) commonly used and purpose of each component to achieve tree preservation and growth
 - c. **Tools regulating trees** as their primary purpose (environmental development permit areas, covenants, and tree bylaws)
 - i. The Toolkit provides detailed information about:
 - Key components listed in typical bylaw sections
 - The purpose of each component within the bylaw
 - Options for each component, either as a recommended best practice or a list of alternatives for readers to select from based on their community context

The majority of the content in this Toolkit is focused on tools regulating trees as their primary purpose because Metro Vancouver had identified a gap in regional guidance on this topic. In 2024, this Toolkit was updated to provide additional information about higher-level plans and tools regulating land use that provide the foundation for long term preservation of trees and growth of tree canopy in the region. Readers seeking to preserve trees and grow canopy cover should begin with higher-level plans and tools regulating land use before selecting tools to regulate trees. Callout boxes throughout this Toolkit provide examples, external resources, and findings from the practitioner surveys conducted for the development of this Toolkit.



1.2 TOOLKIT DEVELOPMENT

The Toolkit was developed with input from a practitioner survey of municipal staff and consulting arborists in the region. In addition, the project team conducted a review of scientific literature, practitioner guides and bylaws from several regions across Canada and the United States to explore best practices for regulating trees and tree canopy.

In 2020, practitioners in Metro Vancouver were surveyed to better understand regional perceptions of the strengths and needs for improvement of tree regulations. Two practitioner surveys were sent, the first targeting municipal staff involved in tree bylaw implementation, and the second targeting consulting arborists who have experience working through the development process (listed on the International Society of Arboriculture's list of consulting arborists for municipalities in Metro Vancouver).

Fourteen staff from Metro Vancouver member jurisdictions with private tree bylaws answered the municipal survey. Twenty-nine consulting arborists (who have experience preparing arborist reports on development projects across Metro Vancouver) answered the consult-

ing arborist survey. Appendix 1 contains the 2020 survey results. The project team conducted a review of academic literature and practitioner guides to identify components of successful tree regulations and key considerations for governance, planning and implementation supporting effective regulations. Appendix 2 contains the literature review.

Several Canadian tree bylaws were reviewed to inform the tree bylaws section. In Canada, only some provinces have legislation that explicitly enables the regulation of trees on private property. Municipalities in Ontario, Québec and British Columbia have private tree bylaws. Although bylaws from Ontario, Québec and the US were reviewed, British Columbia bylaws were selected for comparison in the Toolkit because of their legal compatibility with legislation in the Metro Vancouver region. Similarly, bylaws presented as examples in the land use section primarily come from British Columbia to ensure their applicability in the region, with a few examples from elsewhere included to provide inspiration from neighbouring jurisdictions.



2.0 British Columbia's Institutional Framework for Regulating Trees

British Columbia's institutional framework provides a range of policy and regulatory tools to preserve or grow trees in forest stands and urban areas. Figure 1 summarizes how tree and tree canopy considerations can be incorporated into British Columbia's available regulatory tools, including:

1. Higher-level plans:
 - a. Regional Growth Strategy
 - b. Official Community Plans and neighbourhood plans
2. Tools regulating land use and therefore the space available for tree retention and replacement:
 - a. Land use bylaws and development permits areas, including zoning bylaws, screening and landscaping bylaws, development procedures bylaws, and form and character or energy efficiency development permit areas
 - b. Development, subdivision, and servicing bylaws
3. Tools primarily regulating trees:
 - a. Environmental development permit areas
 - b. Covenants
 - c. Tree bylaws

These tools provide opportunities to regulate trees in British Columbia but may not be applicable in all instances; the relevance of each tool depends on each jurisdiction's context and the trees that are the focus of regulation. Figure 1 includes examples for how each tool can be used to regulate trees growing on private (blue headings) and public (red headings) land for two types of canopy: naturalized stands and

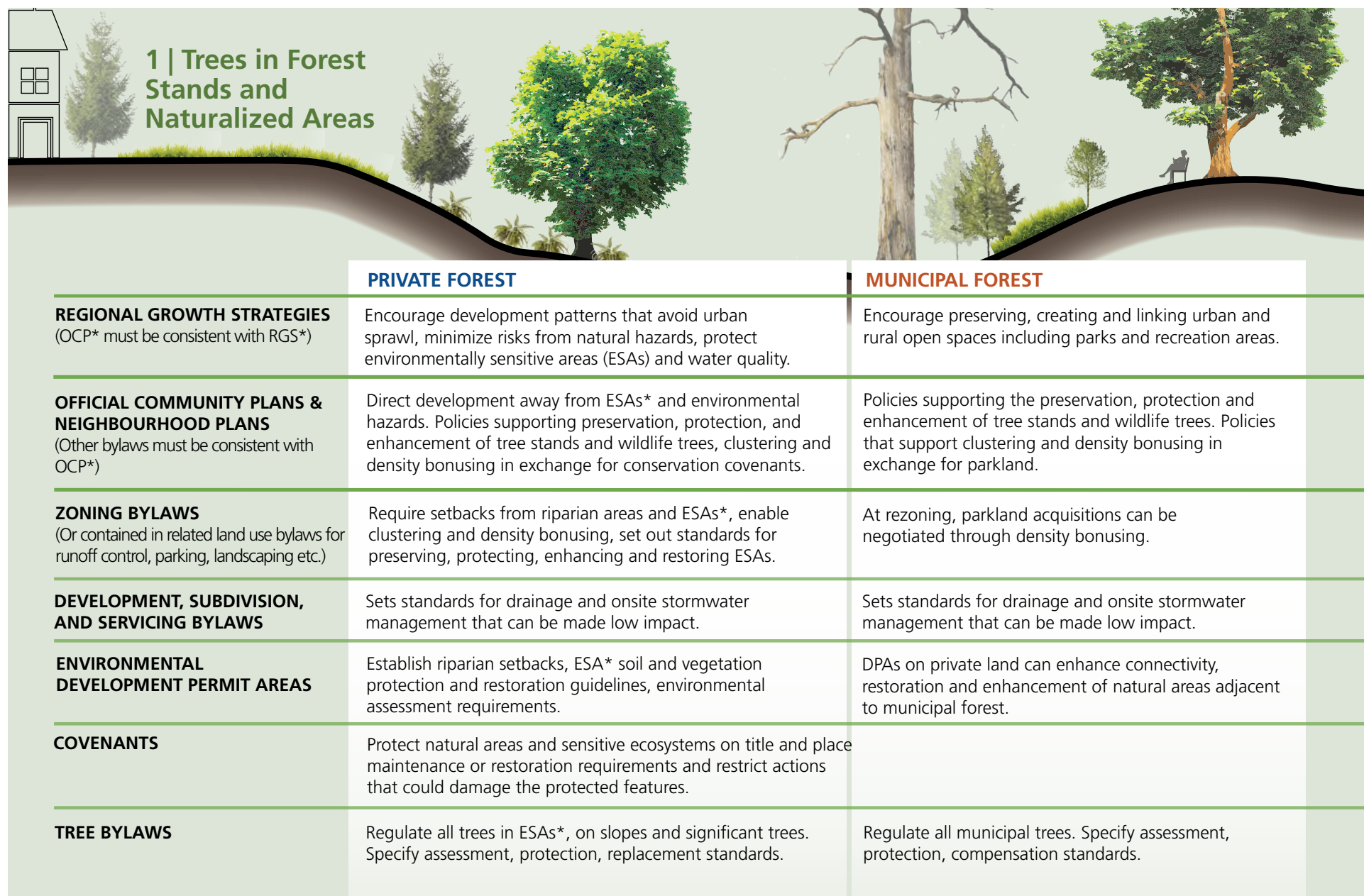
urban areas. Each column on the figure indicates if and how a tool would typically apply to this type of public or private tree canopy. For example, Figure 1 does not list content for 'Regional Growth Strategies' under private yard trees and private trees in a development because they are not typically addressed by that tool.

In addition to the regulations represented in Figure 1, some bylaws can stand alone or have their content addressed within zoning bylaws, subdivision and servicing bylaws or development permit areas.

These bylaws include:

- **Runoff control bylaws** | Runoff control bylaws can establish maximum percentage areas covered by impermeable surfaces varied by land use, zones, geography and size of paved areas
- **Soil removal and deposit bylaws** | Sometimes called sediment and erosion bylaws, these bylaws regulate grading, soil removal and deposition, soil storage and erosion control guidelines
- **Watercourse protection bylaws** | Watercourse protection bylaws can regulate specific activities and development in riparian setback areas

HOW REGULATORY TOOLS CAN BE USED TO PRESERVE TREES AND GROW TREE CANOPY IN THE REGION



***Short forms:** ESA – Environmentally Sensitive Area | OCP – Official Community Plan | RGS – Regional Growth Strategy

Figure 1. The key regulatory tools in BC that can be used to protect or grow urban forest canopy types.

2 | Trees in Urban Areas



MUNICIPAL STREET & PARK TREES	PRIVATE YARD TREES	PRIVATE TREE IN A DEVELOPMENT
Develop settlement patterns that minimize the use of automobiles and encourage walking, cycling and the efficient use of public transit.		
Policies and targets supporting parkland amenity contributions, new parkland, expansion of the urban forest, treed character of streets and areas, integration with goals such as stormwater management, biodiversity, energy conservation and walkability.	Policies supporting the treed character of new landscaping in land uses and neighbourhoods.	Policies and targets supporting tree and canopy retention, protection and enhancement.
At rezoning, negotiate amenity contributions for new parkland. Require setbacks of above and below ground structures, signage and weather protection favourable for street trees.	Require lot sizes, trees per lot, impermeable/permeable cover, off-street parking, screening and landscaping, favourable to yard trees.	IMPORTANT: The tree bylaw may not apply to the extent necessary to allow a permitted use or density.
Set standards for boulevard trees, spacing, soil volume, planting standards, access, utilities favourable for street trees.	Set standards for access and utilities placement favourable to yard trees.	Set standards for access and utilities placement favourable to retaining private trees.
	Promote energy conservation, water conservation and reduction of greenhouse gas emissions using trees.	
		Protect trees or tree groups on developing properties, place maintenance requirements and restrict actions that could damage the protected features.
Regulate all municipal trees. Specify assessment, protection, compensation standards.	Regulate certain trees and require a minimum number of trees/canopy per lot. Specify assessment and replacement standards.	Regulate certain trees and require a minimum number of trees/canopy per lot. Specify assessment, protection, replacement standards.

Tree types: Forest stands and naturalized areas | Urban trees

Jurisdiction: Public | Private

***Short forms:** ESA – Environmentally Sensitive Area | OCP – Official Community Plan | RGS – Regional Growth Strategy





3.0 Selecting the Right Tools and Options for your Community

This Toolkit provides options for content that municipalities could include in policy and regulatory tools to preserve trees and grow tree canopy. For a municipality considering what tool(s) to select, an urban forest governance lens may be helpful to identify the decision-making factors. Urban forest governance refers to the processes, interactions, organizations, and decisions that lead to the establishment and maintenance of urban forest resources and benefits (Lawrence, De Vreese, Johnston, Konijnendijk, & Sanesi, 2013). Applying an urban forest governance lens means defining the governance approach used by a specific municipality and using that information to help inform decisions about which tool(s) are likely to be most successful.

The paper “*Urban forest governance: Towards a framework for comparing approaches*” (Lawrence, De Vreese, Johnston, Konijnendijk, & Sanesi, 2013) defines a set of variables for systematically analysing urban forest governance. This Toolkit poses a set of analysis questions related to urban forest governance; these questions can be used to help define the relevant focus, level of effort, extent of change, key actors, capacity, and processes for developing new tree regulations.



Urban forest governance analysis questions

1. Community context:

- ◇ What are the urban forest canopy types that are the target of canopy preservation or growth: canopy in forest stands and naturalized areas, canopy in urban areas, or canopy in both naturalized forest stands and urban areas? Please refer to Figure 1 for the canopy types and how they might be regulated with different tools.
- ◇ What level of administration and enforcement effort can be supported by the jurisdiction's population size and geographic area?
- ◇ What level of regulation would align with community values?

2. Institutional frameworks:

- ◇ What types of policies, plans and regulations are already in place and how could they be enhanced or complemented with updates or new regulation?
- ◇ Will new policies or plans be required to support new regulation?
- ◇ What urban forest canopy or tree targets exist in policies and plans, and how could new regulations be used to achieve them?

3. Actors and coalitions:

- ◇ Who are the key internal and external stakeholders who need to be consulted?
- ◇ Who needs to support the decision and who will make the final decision?

4. Resources:

- ◇ Will funding and staffing need to increase to support the new regulation?
- ◇ What new technical information will need to be provided to internal and external stakeholders?
- ◇ Can other policies, programs or staff be used to implement the changes more effectively?


5. Processes:

- ◇ What are the narratives, conflicts and framing that justify the changes being made?
- ◇ What are the specific ways that actors and stakeholders will be consulted, engaged, involved, and empowered in decisions and implementation?
- ◇ What are the performance targets¹ for the change? How will success be measured and reported in relation to targets?

Answering these questions will help choose the right tools and options for your community. Your answers will inform the selection and design of policy and regulatory tools that will be appropriate for the community's governance context; and help identify the engagement and resourcing required to support their effective implementation.

¹ Examples of measurable targets include metrics such as canopy cover, rate of tree removal and replacement, replacement tree survival rates, or pervious cover.





Higher-level plans are established for a regional, municipal or neighbourhood planning scale. The plans set goals, targets and policies that guide planning and development at that planning scale, making them an important driver for tools that regulate land use and trees.



4.0 Higher-level Plans

The higher-level plans described in this section include Regional Growth Strategies, Official Community Plans and Neighbourhood Plans. Regional Growth Strategies are an agreement across local governments on the future, population in the region and employment projections, and targets, policies and actions, for example for the reduction of greenhouse gas emissions (Local Government Act, RSBC 2015, c 1, 2015). A Regional Growth Strategy describes objectives for and ways to protect environmentally sensitive areas. Local governments are required to include a regional context statement within Official Community Plans (OCPs) to demonstrate consistency with matters in the regional growth strategy. Since the publication of the first edition of the Tree Regulations Toolkit, Metro Vancouver published *Metro 2050*, the new Regional Growth Strategy.

METRO 2050

In 2023, Metro Vancouver adopted its new Regional Growth Strategy, *Metro 2050*. The Strategy shares the vision for the region's projected growth in population, housing, and jobs for the next 30 years. Strategy 3.2 focuses on the protection, enhancement, restoration, and connection of ecosystems. It includes a target to increase tree canopy cover within the Urban Containment Boundary from 32% to 40% by 2050.


Official Community Plans are comprehensive plans that can include environmental protection policies. They provide the policy support for the bylaws adopted in the community. Official Community Plans can also define settlement patterns that guide development and avoid sprawl, map key areas, and designate development permit areas and guidelines for development permits responsible for tree protection and replacement (Stewardship Centre BC, 2016). Official Community Plans can establish goals and indicators related to the preservation and growth of a community's urban forest and support the implementation of community-supported bylaws and policies for that purpose. More specifically, Official Community Plans can set policies related to the natural environment with regard to the protection of stands of trees and ecosystems. They can also provide guidance on equity components to ensure access to all community members and to recognize and support the rights of Indigenous Peoples regarding urban forest resources. Official Community Plans should also guide land acquisition for the purpose of preserving and growing tree canopy and support climate resilience of our communities through strategic use of tree canopy benefits and of urban forests in the face of changing growing conditions. Finally, they can guide the best use of trees for urban design and livability.

Neighbourhood Plans can be a helpful accompanying policy tool to set out targets for canopy cover. They can also define policy objectives and character elements of importance for the urban forest and neighbourhood character. This smaller planning scale enables more consideration to be given to the local land use and unique context of each neighbourhood within a municipality. To supplement this section of the Toolkit, practitioners can refer to Appendix 3 for a worksheet that helps local governments assess their Official Community Plan and Neighbourhoods Plans.

LOOKING BEYOND BRITISH COLUMBIA: WASHINGTON STATE'S REGULATORY FRAMEWORK FOR NO NET LOSS OF HABITAT

Municipalities in Metro Vancouver follow the rules set by the Province of British Columbia. However, looking at other jurisdictions, including Washington State, could offer new ideas for urban forest management. Washington State's Growth Management Act requires all municipalities and counties to adopt critical areas' regulations for the protection of the natural environment, wildlife habitats, and sources of drinking water. The municipal and county regulations must first avoid, then minimize and mitigate development impacts on critical areas. The State requires a no net loss approach which requires local governments to maintain the same quantity and quality of critical areas over time. As a result, cities like Bellingham have adopted a Critical Areas Ordinance to implement the no net loss framework that applies to both public and private lands. These requirements have resulted in significant investments in restoration, including stream daylighting, forest and wetland restoration, and now the development of a mitigation bank to direct compensation funds towards ecologically appropriate and functional mitigation for impacts anticipated to occur over the next 10 years.





Land use regulations create the foundation for long-term protection and growth of trees. These regulations control where trees can exist and how much space is available for them to grow in a particular land use type as it develops.

It will be ineffective to implement a tree bylaw or an environmental development permit area to protect trees or grow tree canopy if land use regulations do not require adequate space to retain or grow trees post-development.

5.0 Tools Regulating Land Use

Land use regulations significantly impact on tree preservation and growth because they influence the space available to retain or replace trees with development. As such, these tools will be critical to achieving Metro Vancouver's target to increase tree canopy cover to 40% within the Urban Containment Boundary (UCB) by 2050.

The availability of space to retain or replace trees varies widely across both public and private land uses. As urbanization and density increase in Metro Vancouver, the space available to grow trees tends to decrease. More specifically, studies have found that canopy cover declines significantly when median site coverage or housing density increases (Hilbert et al. 2019; Landry & Pu 2010; Troy et al. 2007). Local governments will need innovative land use policies to maintain and enhance tree canopy (where possible) and mitigate tree canopy loss in densely populated areas.

The land use bylaw components presented in this section contribute to tree preservation and growth because they influence the space available to retain or replace trees on private or public land. Practitioners can evaluate their current regulations to determine how much space they make for trees and how landscaping and tree retention mechanisms contribute to desired tree canopy cover outcomes.

Practitioners can use the following regulatory tools to address the components listed in this section:

- **Land use bylaws and development permit areas:** zoning bylaws can set rules for lot sizes, setbacks, building coverage, and how land can be used, which can, in turn, affect land cover and where tree canopy (and associated environmental benefits such as urban heat mitigation and stormwater interception) is distributed (Wilson, Clay, Martin, Stuckey, & Vedder-Risch, 2003). Zoning bylaws, screening bylaws, or 'form and character' and 'climate change' development permit areas can also regulate or provide guidelines for landscaping, retaining important trees, and promoting landscaping strategies for passive solar gain and cooling.
- **Development procedures bylaw:** can allow staff to approve minor variances to retain trees.
- **Development, subdivision and servicing bylaw:** can control the placement of trees and vegetation in streets and the landscaping design criteria and construction standards.

In a 2020 survey, the majority of municipal staff survey respondents indicated that they thought their zoning bylaws were not currently effective for preserving or growing canopy cover.

While some best practices for regulatory components influence tree canopy outcomes, others are more variable and context-specific. The following subsections provide detailed information about key bylaw components, including:

- Purpose of the bylaw component
- A recommendation for each component, either as:
 - ◇ Recommended components – central to the approach presented for tree retention or planting
 - ◇ Options – listed for every community’s consideration based on the specific land use or context
- Examples of where those regulatory components are being implemented in existing regulations

Before providing an overview of the regulatory components, the toolkit includes context about how land use influences the region’s tree canopy cover and impervious surface.

5.1 CURRENT LAND COVER AND CONSIDERATIONS FOR SETTING LAND USE CANOPY COVER TARGETS

This subsection presents information about the distribution of land uses in the Metro Vancouver region and their contributions to tree canopy and impervious surface cover. Land cover information provides context for which land uses have the greatest influence on tree canopy cover in Metro Vancouver.

Largest land uses in Metro Vancouver

Figure 2 illustrates the land use composition of the region’s UCB in 2020. The most abundant land uses were low-rise housing (single detached and small-scale, multi-unit housing), parks and greenspaces, road rights-of-way, and commercial and industrial uses. Nearly 40% of the region’s land area is in publicly managed parks and roads, while private land uses account for 60%. Therefore, when developing land use regulations to influence canopy cover, local governments must carefully consider how regulating their most extensive land uses can best support canopy preservation and growth.

Land uses across the region are not static and will continue to change. For instance, since 2014, the proportion of low-rise housing decreased as urban centres have densified. In addition, recently introduced Provincial regulations will result in all single-detached housing in the Urban Containment Boundary transitioning towards small-scale, multi-unit housing

LAND USE AREA WITHIN THE URBAN CONTAINMENT BOUNDARY

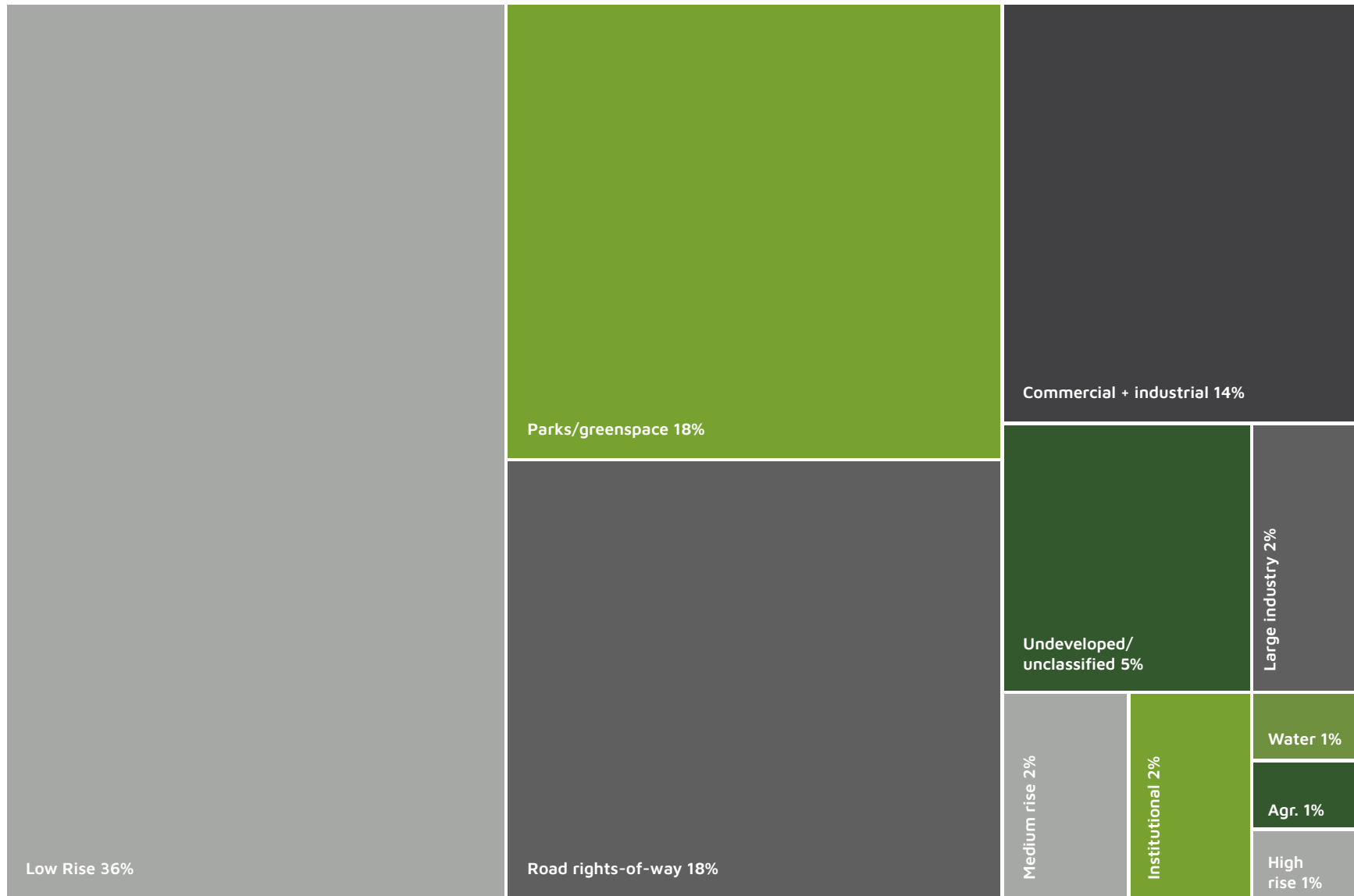


Figure 2. Approximate land uses contribution to Metro Vancouver's Urban Containment Boundary land base.

BC SMALL-SCALE, MULTI-UNIT HOUSING PROVINCIAL POLICY

In 2023, the BC provincial government introduced changes to the *Local Government Act* and *Vancouver Charter*. It published a Policy Manual to guide the implementation of changes to single-detached dwelling or duplexes zones to allow Small-Scale, Multi-Unit Housing (SSMUH). The Transit-Oriented Development Areas legislation will also concentrate development in areas within 800 m of rapid transit nodes. The regulatory changes will replace single-detached and duplex zones across the region's Urban Containment Boundary to allow a minimum number of residential units ranging from a minimum of three to six units based on the lot size and their proximity to a frequent transit stop.

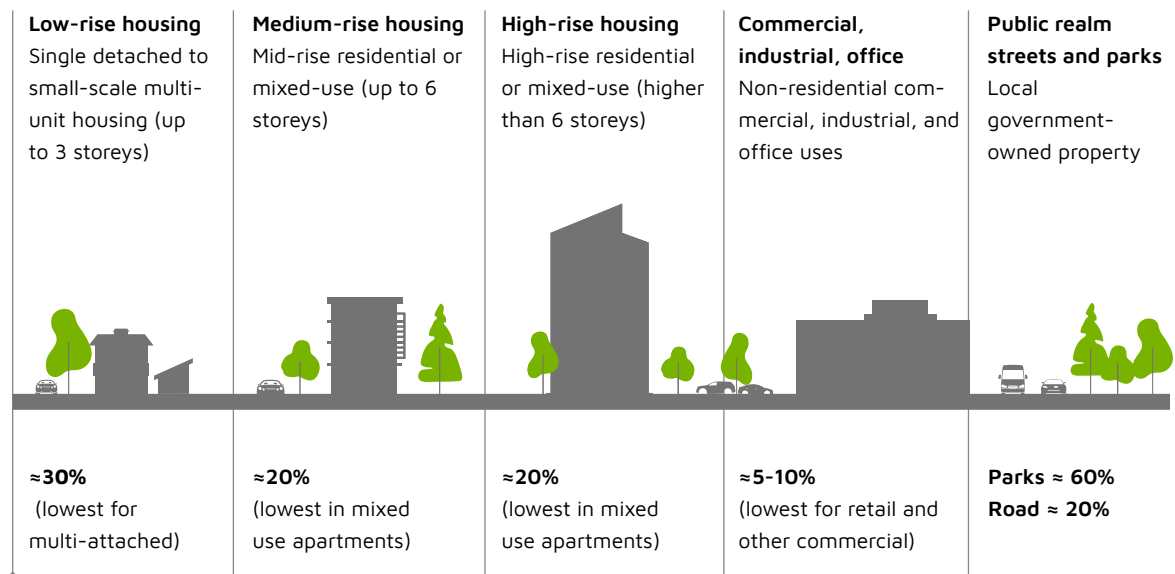


This section of the Toolkit uses icons to highlight the anticipated impacts and implications of the provincial regulatory changes on relevant bylaw components.

Where is most of the tree canopy in our region?

Metro Vancouver's 2024 Regional Tree Canopy Cover and Impervious Surfaces report (Metro Vancouver, 2024) found that in 2020 31% of the UCB was covered with tree canopy. Previous reporting concluded that low-density housing land uses had historically had the highest tree canopy ($\approx 35\%$), but since the 1970s, that canopy has been declining (Metro Vancouver, 2019). Meanwhile, high-rise housing had it highest canopy cover in the 1980s ($\approx 30\%$) and has been declining since. Today, low-density housing land uses have 1.5 times the canopy coverage found across higher-density housing areas. Commercial, industrial, and office land uses supported the least canopy cover of any land uses. Parks in the region contain approximately 60% canopy cover, while road rights-of-way supported approximately 20% canopy cover.

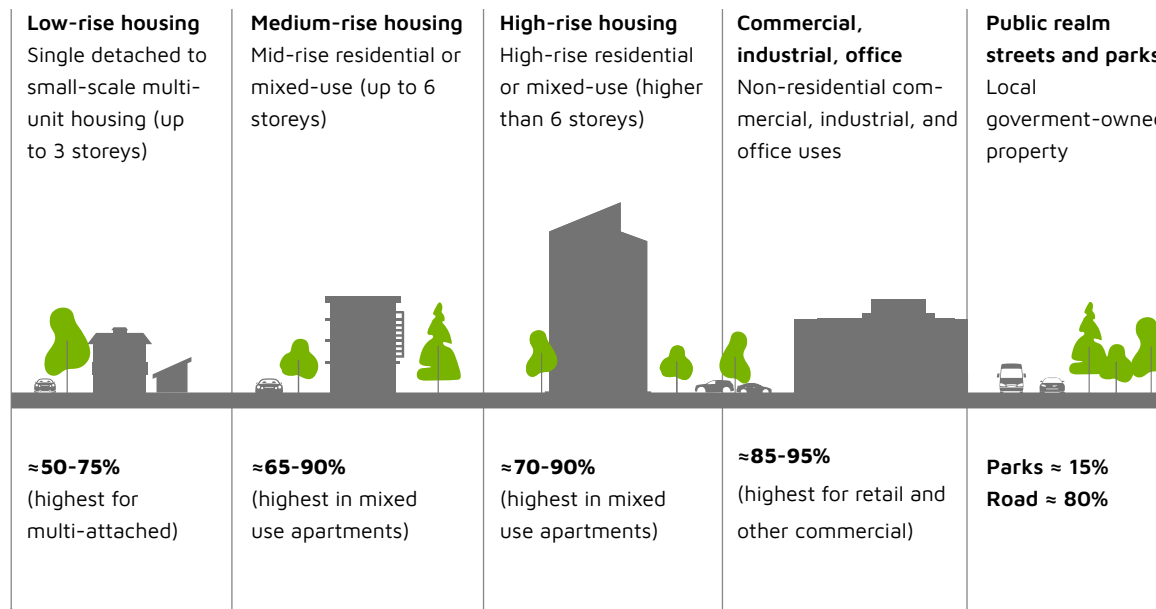
AVERAGE CANOPY COVER IN 2020



Where is most of the impervious cover in our region?

According to the Regional Tree Canopy Cover and Impervious Surface report (Metro Vancouver, 2024), in 2020 54% of land in the UCB was impervious, meaning it was covered by buildings or pavement. Commercial, industrial, and office land uses had the highest impervious surface of all land uses, reaching up to 94%. Housing land uses have seen comparable levels of impervious surface since the 1970s, with medium and high densities averaging around 75% impervious surface, because of larger site coverage and smaller lot sizes in lower density areas. In comparison, low density residential areas generally had lower impervious surface ranges from the 1970s to 2020 – 50% on average across the UCB. Recently adopted provincial government legislative changes promoting the transition in single-detached residential areas to small-scale, multi-unit housing are expected to increase site coverage and impervious surface further. Parks have the lowest impervious cover in the region at approximately 15%, while road rights-of-way have approximately 80% impervious cover.

AVERAGE IMPERVIOUS COVER IN 2020



IMPORTANT IMPERVIOUS COVER THRESHOLD FOR TREE CANOPY

Research and practitioner comments suggest a strong relationship exists between the proportion of tree canopy cover on a site and the extent of impervious cover (i.e., paved surfaces). Metro Vancouver’s land cover data (2014) shows that once a city block reaches 60% impermeable cover, it becomes unlikely to reach more than 30% canopy cover.

Given the close relationship between impervious and canopy cover, local governments seeking to preserve or grow canopy cover need to ensure that their regulations result in adequate pervious surface and soil to grow trees in the land uses where the community wants to see tree canopy. **Local governments need to retain soil to grow trees close to where people live.**

5.1.1 Setting a Tree Canopy Cover Target

To reach the regional 40% canopy cover target within the UCB, local governments must implement practical solutions that minimize the loss of canopy and pervious area, and maximize opportunities to enhance landscapes and retain and plant trees in each land use. Parks and conservation areas, crucial for providing canopy cover and space for nature, should not be the sole source of tree canopy. Research underscores the importance of providing nearby tree canopy for public health, exemplified by the '3-30-300 rule', which advocates for the visibility of 3 trees from homes, schools, or workplaces, at least 30% canopy cover in each neighbourhood (a minimum suggested to ensure residents receive health and wellbeing benefits), and access to greenspace within 300 metres of residences (Konijnendijk, 2022). The BC Coroner Service's report on the 2021 heat dome event also highlighted the provision of tree canopy and pervious surfaces as one of four core strategies to combat extreme heat and mitigate future public health risk (British Columbia Coroners Service, 2022). While not all land uses will be able to accommodate the same canopy coverage, it is essential to continue making space for trees and greenspace close to where people live across the region. Setting up a local government canopy cover target is an important tool to direct efforts towards achieving adequate tree canopy and distribute those important benefits across communities and the region.

Metro Vancouver's tree canopy cover reporting has highlighted a concerning trend of declining space for trees across various land uses. This trend threatens the regional target to grow canopy cover to 40% within the UCB. Setting canopy cover targets at the local level by land use will help practitioners focus on aligning their land use bylaws with those goals. A review of land use regulations and rights-of-way standards will allow for a better understanding of what can be achieved on a parcel or city block level. Those parcel-level targets can be scaled to the land use and local government-wide scale to better understand how the local government will contribute to regional targets.

When choosing a suitable target for a specific land use, practitioners should consider its contribution to a local government-wide target, the regional UCB target (as required in *Metro 2050* Action 3.2.7a), and to the provision of canopy close to where people live. Achieving 40% canopy cover across all land uses may not be feasible or appropriate.

To meet a canopy cover target, the number of trees and the necessary space required for planting must be allocated within each land use category. Table 1 presents the approximate tree density per hectare required to achieve various canopy cover targets. To achieve the targeted canopy cover with the tree density stated, the species planted should on average have a medium-size crown at maturity (mature crown spread 5 – 10 metres). The table also identifies that a certain percentage of each land parcel should be dedicated as a consolidated planting area (see inset) to accommodate tree growth. This percentage varies from around 5% to 30%, depending on the canopy cover target and parcel size. Ideally, each tree should have approximately 35 m² of pervious area; however, this can be reduced to 30 m² if shared with other trees (see Table 2 in section 5.3.2 for more details). If providing pervious area is not feasible, practitioners can employ engineered solutions such as soil cells or structural soil under impervious surfaces to achieve the desired outcome.

Table 1. Approximate tree density and percent of parcel area required to meet specific canopy cover targets at the parcel level

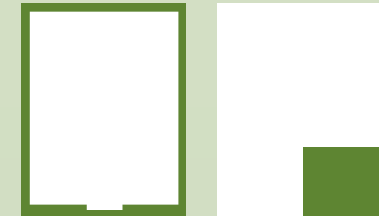
PERCENT CANOPY TARGET	TREE DENSITY PER HECTARE ¹	EXAMPLES OF PERCENT OF PARCEL REQUIRED FOR CONSOLIDATED PLANTING AREAS ^{*2}	
		2,000 SQUARE FEET PARCEL	9,000 SQUARE FEET PARCEL
60%	92	32% (space for 2 trees)	29% (space for 8 trees)
55%	85	32%	25%
50%	77	16%	22%
45%	69	16%	22%
40%	62	16%	18% (space for 5 trees)
35%	54	16%	18%
30%	46	16%	14%
25%	38	16%	11%
20%	31	16%	11%
15%	23	Less than 1 tree/lot needed	7%
10%	15	Less than 1 tree/lot needed	4%
5%	8	Less than 1 tree/lot needed	4%

¹ This tree density is based on the City of Vancouver’s average canopy cover per tree of 65 m²; Vancouver’s tree population averages 35 cm diameter at breast height and young trees are most abundant. However, trees 30 cm and larger provide most of Vancouver’s canopy area.

² To support a tree providing approximately 65 m² of canopy (8 m spread per tree), a minimum of 30 m² of consolidated pervious area should be provided. The examples of the percent of parcel required to provide the minimum planting area are based on parcel sizes of 2,000 and 9,000 sq. ft. (186 m² and 836 m²).

WHAT IS A CONSOLIDATED PLANTING AREA?

Unlike pervious area cover, a consolidated planting area requires contiguous soil volume in an arrangement that would support the growth of a large-size tree.



Example of the same lot’s pervious cover arranged in green slivers around a large grey impervious area (left) or in a consolidated form (right, preferred for tree planting)

For more details on implementing a consolidated planting area requirement in your land use bylaws, see section 5.3.2 on tree planting.



5.2 LAND USE BYLAWS AND DEVELOPMENT PERMIT AREAS

This subsection focuses on landscaping and site coverage guidelines, as well as regulations that create space to grow trees on private land. Practitioners may use various regulations to implement some of the components listed in this subsection based on local context and preferences. The regulatory tools are:

- **Zoning bylaws**, which set land use, density, building height and site coverage, and parking requirements
- **Form and character development permit areas**, which can regulate building design and landscaping
- **Climate change and energy conservation development permit areas**, which can promote landscaping solutions to reduce energy consumption
- **Screening and landscaping bylaws**, which can be used to preserve, protect, restore, and enhance the natural environment, screen or buffer land uses, and prevent hazardous conditions (e.g., require certain types of plants in wildfire hazard areas)

- **Development procedures bylaw**, which can define procedures to apply for variances to land use regulations, including application requirements and delegated minor variances

To supplement this section of the Toolkit, practitioners can refer to Appendix 4 for a worksheet that helps local governments assess their regulatory tools.

5.2.1 Landscaping Standards

Practitioners can use landscaping requirements or guidelines to meet canopy cover targets. These requirements can be used to encourage tree retention (given that retained trees help to achieve the landscaping requirements), but these requirements are primarily used for ensuring that a consistent landscape standard is achieved post-development. The core component of the landscaping requirements that influences canopy cover growth is the tree planting requirements.

RECOMMENDED COMPONENT

Tree planting and retention requirements

PURPOSE | Landscaping and screening requirements can set tree planting or retention minimums and specify adequate planting standards in all or specific zones.

In practice, it might include the following components:

1. Number of trees:

- **Tree density requirement*** to consistently distribute canopy cover across a land use. A tree density requirement may be based on:



- ◇ In residential land uses, the parcel or landscape area size



- ◇ In commercial or industrial land uses, the number of parking stalls
- **Screening buffer** to use trees as a buffer between different land uses. The buffer should be at least 3 metres wide to allow the planting of larger tree species.

*Note on tree density: Practitioners can align tree density targets in landscaping requirements with a tree bylaw's tree density target requirement (see the tree bylaw subsection 6.3.6.2 Replacement Requirements – Achieving canopy growth). For example, the tree bylaw may use the tree density to cap replacement requirements while zoning uses the same density as a minimum landscaping standard. Over time, the combined use of those tools would equalize the distribution of tree canopy, with heavily forested properties reducing canopy, and sparsely forested properties increasing it after development.

2. Planting standards:

- **Size at maturity** is an importance factor. To achieve the desired tree canopy target with the equivalent tree density requirement, trees must be mostly medium or large size at maturity, meaning that the species planted will reach a medium to large crown size. To achieve the targeted canopy cover with the tree density, local governments could require no more than 25% small trees at maturity, and no less than 50% large trees and medium trees at maturity to make up the difference.
- **Soil volume** minimums per tree are important to provide trees with sufficient growing space. They can be supplied with adequate pervious surface where trees are planted in the ground (see section 5.3.2 about planting area requirements) or with soil cells or structural soil if growing on structure or below impervious cover (see section 5.5.1 for recommended minimum soil volumes).
- **Installation and maintenance** requirements should reference the Canadian Landscape Standards, which provide industry best practices.
- **Tree species selection** should be guided by a list of climate-adapted and non-invasive species, as well as diversity guidelines. If it is not feasible to maintain a species list, practitioners should, at a minimum, require approval of the proposed species.

Examples of where this approach is used:

- Tree density requirements in zoning:
 - ◇ [Coquitlam zoning landscaping requirements for development](#)
 - ◇ [Kelowna zoning landscaping standards](#) (table 7.2; see inset)
 - ◇ Portland city code (11.50.050 On-Site tree density standards)
- Trees per parking stall requirements
 - ◇ [Township of Langley parking lot landscaping](#) (section 111.4)

TREE DENSITY REQUIREMENT FOR LANDSCAPING

The City of Kelowna's Zoning Bylaw includes landscaping requirements specific to four different types of land uses. The requirements include a minimum number of trees per hectare as well as a minimum growing medium area and soil volume.

Kelowna Zoning Bylaw – Section 7 Site Layout



ADDITIONAL OPTION | The recommended landscaping standards can be supported by development permit area (DPA) guidelines and other mechanisms to improve tree retention and planting:

Green standard/factor score or sustainability checklist: Local governments can use reporting standards that require applicants to report on their sustainability and greening efforts. Such tools can suggest a list of measures and their associated score, allowing applicants to select the tree retention or planting solutions that work best for their site. Sustainability report cards or green scores can be included in reports to Council and Committees for rezoning or development permit applications to demonstrate how well an application aligns with local government's sustainability values. While they are sometimes used as a voluntary standard, sustainability scores can also be used as a requirement for amenity density bonusing, as described in section 5.2.3.

- **Examples of where this approach is used:**
 - ◇ Toronto green standard (see inset)
 - ◇ Port Moody [sustainability report card](#)

Form and character landscaping guidelines: Form and character DPAs are a common tool for local governments to implement requirements related to greenspace, planting, and character for new development. Form and character DPA guidelines can support landscaping requirements by encouraging retention of existing mature trees or forest stands, tree planting (including sufficient spacing and soil volume), and achievement of specific goals such as shading, place making, native plantings, stormwater management, or energy efficiency.

- **Examples of where this approach is used:**

- ◇ Landscaping guidelines in Surrey’s Form and Character DPA provide details on the type of tree retention, landscaping, and planting conditions required in different land uses to maximize benefits from trees and provide adequate conditions to support tree growth.

Climate change and energy conservation Development Permit Area: Under energy conservation, water conservation and greenhouse gas emissions reduction DPAs, some guidelines can contribute to preserving trees and growing tree canopy while increasing carbon storage and meeting goals for climate action. These components include landscaping strategies such as planting trees for passive solar gain and cooling to reduce energy consumption (British Columbia Ministry of Community, Sport and Cultural Development, 2011). Trees should be located to serve as a windbreak, and shade trees to cool buildings and impervious surfaces where possible. Tree species that require less watering should be selected to minimize irrigation needs.

TORONTO’S GREEN STANDARD

The Toronto Green Standard is the City of Toronto’s sustainable design requirements for new private and City-owned developments. The Standard was introduced in 2006 as a voluntary standard for new development and has since been structured into a tiered program that offers a mix of mandatory and voluntary elements. Projects that demonstrate higher levels of performance may be eligible for a refund on development charges paid to the City. Design guidelines in the Toronto Green Standard address urban forestry, including:

- Soil volume required on the site and in the adjacent public boulevard
- Minimum soil volumes for each tree planting area (permeable area consolidation)
- Placement and spacing of trees
- Required watering and maintenance of trees after installation
- References to relevant bylaws and policies governing trees on public and private property

The Toronto Green Standard requires all new developments to increase tree canopy, soil volumes, and tree watering, while promoting the use of native species and exclusion of invasive species from landscaping. Additional tree planting or ecological restoration is voluntary and can be used to qualify for a development charge refund. The Toronto Green Standard is updated every four years to provide certainty and regularity to private landowners and the development industry. The urban forest is a crucial performance area for the Toronto Green Standard, which is a major implementation tool for the City’s Climate Action Plan.

Other example of a similar approach:

Seattle’s Green Factor is another score-based approach to implementing greening requirement within the City’s Municipal Code:

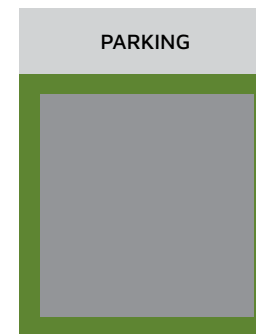
- Applicants must achieve a minimum number of credits
- Greening methods that earn credits: tree planting (highest for large species at maturity planted in adequate soil volume), pervious areas (highest for vegetated areas and greater depth of infiltration)



5.2.2 Planting Area Requirements

After establishing landscaping requirements aligned with their canopy cover targets, practitioners must ensure that site requirements provide adequate planting areas to sustain the desired canopy cover.

The additive impact of the regulatory components discussed in this section is shown on an example parcel where space to support trees on private property is initially insufficient:




RECOMMENDED COMPONENT

Planting area requirement

PURPOSE | The amount of pervious area provided on a parcel needs to be sufficient to support the landscaping requirements for tree retention and planting.

In practice, it might include the following bylaw components:

- **Minimum pervious area requirements (or maximum impervious area)** can support the provision of planting areas. Still, it may not be sufficient to achieve a consolidated tree planting area (e.g., narrow strips of grass surrounding a building).
- **Minimum consolidated planting (pervious) area** of at least 35 m² per tree (or 30 m² if the multiple trees share the soil volume) with minimum dimensions to create a shape large enough to support tree(s).
- **Engineered solutions** to achieve soil volume under impervious surfaces.

A consolidated pervious area requirement will create an area large enough to support a tree: 

The table below summarizes the minimum surface area required to support a tree (assuming a 1 m soil depth).



Table 2. Surface area of soil per tree assuming 1 m depth

TREE SIZE	APPROXIMATE SURFACE AREA (M ²) OF SOIL REQUIRED PER TREE (ASSUMING 1 M SOIL DEPTH)		
	On ground	Under hardscape – soil cells ⁺	Under hardscape – structural soil ⁺⁺
Small tree canopy spread is up to 6 m	8	x1.1	x5
Medium tree canopy spread is up to 10 m	20	x1.1	x5
Large tree canopy spread is greater than 10 m	35	x1.1	x5

⁺Soil cells are 92% soil, ⁺⁺Structural soil is 20% soil.

Examples of where this approach is used: Victoria missing middle zoning; Ottawa missing middle; [Portland City Code – Chapter 11.50 Trees in Development Situations](#)



CONSOLIDATED PLANTING AREA

The City of Victoria recently adopted missing middle zoning that allows houseplexes (buildings with at least 3 and no more than 6 dwelling units), corner townhouses and heritage-conserving infill housing in areas previously limited to traditional residential zoning. Schedule P of the Zoning Bylaw lists new requirements for the missing middle zone, including requirements for open site space that the City developed to provide a minimum connected surface area of a size and shape that will enable tree planting:

Site coverage, open site requirement:

- Open site space (minimum): 45%
- A single space the greater of 35m² or 6.5% of the lot area:
 - ◇ That is landscaped and not paved,
 - ◇ That does not have above or below ground structures, and
 - ◇ **All sides of which are at least 4.5 m long**

[City of Victoria Zoning Bylaw Schedule P – Missing Middle Regulations](#)

5.2.2.1 Making space for the planting area

To make space for the planting areas, practitioners need to consider site layout components that are competing for space on the parcels.

RECOMMENDED COMPONENT

Building setbacks to accommodate trees

PURPOSE | Trees require space from buildings and paved surfaces to grow to maturity without conflict with adjacent infrastructure. As such, local governments should be aware that setbacks will become limiting or altogether exclude tree planting once they get below the widths described below.

In practice, it might include the following bylaw components:

- **Front and rear setbacks:** at least 3 metres from foundations in the front or rear to allow tree planting more than 2 metres away from the building for medium-sized trees or 3 metres for large trees. Prioritize keeping the front setback larger to enable tree planting and cooling benefits, except where an existing forested area exists towards the rear of properties that could be preserved with a larger rear setback. Trees should be planted at least 1 metre from the property line.
- **Underground structures setbacks:** Setbacks often do not explicitly apply to underground structures in all zoning bylaws. Practitioners should note that if underground structures are permitted to reach the property line, it will result in tree impacts on and adjacent to that property. For instance, underground parkades that reach the property line may result in the removal of adjacent street trees and make it more difficult to replace trees. Being explicit about where zero setbacks for underground structures will be permitted would help to manage expectations about tree retention, planting, and canopy cover potential in adjacent streetscapes and sites as redevelopment occurs.

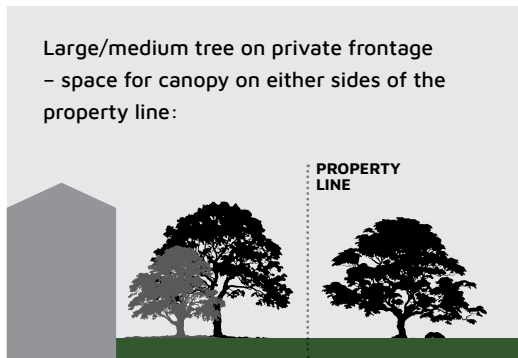
RECOMMENDED COMPONENT

Building setbacks to accommodate trees

A larger front setback will provide sufficient space from the building and soil volume to support trees that will grow to a larger size at maturity:



Where a 3-metre building and underground structure setback is not possible in the front or rear of the property, practitioners must review their Development Servicing standards for the rights-of-way to ensure that the boulevard width and placement make up for the lost opportunity for tree canopy – see section 5.3.1. Figure 2 below illustrates the relationship between front setbacks and boulevards for the provision of tree canopy.



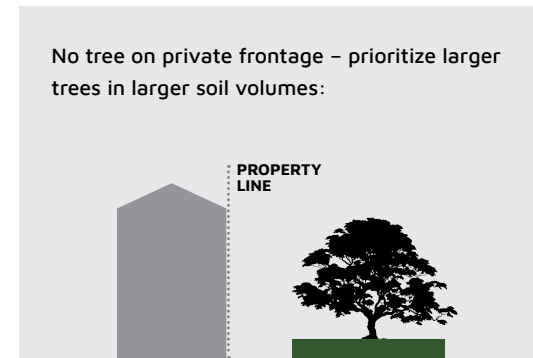
Large/medium tree on private frontage – space for canopy on either sides of the property line:

>3m front setback; at least 2m width boulevard



Small tree on private frontage – keep space for a large tree in the boulevard:

≥3m front setback; larger boulevard



No tree on private frontage – prioritize larger trees in larger soil volumes:

≤1m front setback; larger boulevard/soil volume

Figure 2. Relationship between front setbacks and boulevards for the provision of tree canopy.



The province's SSMUH Policy Manual recommends that local governments reduce building setbacks to improve the viability of more housing types. The Policy Manual recommends a range for front setbacks from 0-2m for lots with a minimum of 6 housing units to 5-6m for lots with a secondary suite or accessory dwelling. Recommended rear setbacks are as small as 1.5 m.

ADDITIONAL OPTION | Bylaw components to enable the provision of consolidated planting areas:

Site coverage: The maximum site coverage defines the proportion of a lot that can be occupied by structures. With the exception of landscaping grown on structure (discussed below), this represents an area that will not be available as pervious cover.

- **i** The province’s SSMUH Policy Manual recommends that local governments set a combination of maximum lot coverage with setbacks and maximum height requirements instead of floor area ratios. **Recommended maximum lot coverage** (i.e., proportion of the lot covered by a building footprint) ranges from approximately 30% for lots with only a secondary suite or accessory dwelling to 60% for lots with a minimum of 6 units.



- On mid- or higher-rise housing sites or other high-intensity land uses where full lot coverage cannot be avoided, tree planting will need to occur on structure. Tree planting on structure should still

be supported by adequate minimum soil volumes (see section 5.5.1 for recommended minimum soil volumes).

Parking requirements: On site parking requirements increase impervious cover or the footprint of underground parkades. Numerous local governments have explored reducing or increasing the flexibility of parking requirements as a way to meet objectives for affordability or to reduce greenhouse gas emissions, and this flexibility would also increase the ability to retain or replace trees on a lot.

- **i** The province’s SSMUH Policy Manual recommends that local governments minimize or even remove parking requirements in some areas to retain space for buildable area and increase permeability.

Smaller site coverage and reduced parking requirements will further contribute to maintaining pervious coverage and space for trees:



GREEN ROOFS AND TREE PLANTING ON STRUCTURE

Green roofs may provide an opportunity to plant vegetation and small trees to offset canopy loss, and they can provide many benefits. However, trees growing on structure will provide less and shorter-lived canopy compared to trees planted in the ground because of the more limited soil volumes, and the need to remove trees periodically to repair membranes.

5.2.3 Negotiated Development

In addition to setting the parameters for landscaping standards and planting area requirements that will support achieving the selected canopy cover targets on as-of-right developments, local governments can use regulatory tools to improve tree canopy preservation and growth on negotiated developments.

OPTIONS | The following regulatory components can help improve tree retention and planting outcomes:

Amenity density bonusing: Local governments can use amenity density bonusing to preserve tree stands in exchange for additional density. For example, local governments may allow a higher floor space ratio (FSR) and a clustering of development away from the forested area. Conservation covenants in favour of the local government are often used to protect greenspace for the long term. Local governments may also acquire the area of interest as parkland beyond the 5% parkland dedication they can require at subdivision. Finally, local governments can use a green factor or report card scoring system that allows applicants to choose the most appropriate tree retention and planting actions for their site/project to gain additional density.

- **Examples of where this approach is used:**

- ◇ Samamish (WA) uses a points system to allow applicants to select the tree retention or planting interventions best adapted to their project (*see inset*).
- ◇ The Green Bylaws Toolkit (2021) provides several examples of local governments in BC that used amenity density bonusing to protect sensitive ecosystems.

- ◇ In the US, municipalities like Portland, Oregon use density transfer mechanisms to achieve goals similar to what amenity density bonusing can provide in BC. For example, Portland's City Code includes Floor Area Ratio transfer aimed at preserving existing affordable housing and trees/greenspace to other parcels in exchange for affordability or tree protection restrictions.

Comprehensive development: Local governments can use comprehensive development zones to drive landscape-level planning for larger parcels of land. Communities may find it helpful to achieve forest stand preservation goals or to enable innovative treatments on sites with particular constraints.

SAMAMISH LOW IMPACT DEVELOPMENT INCENTIVES

The City of Samamish, Washington defines a set of techniques that can earn applicants 20% or 30% additional density on their development. The techniques listed in their Development Code include:

- Forest retention
- Restoration of vegetated areas
- Restoration of critical buffer areas
- Limited site disturbance, reforestation
- Reduced impervious surface
- Minimal foundation excavation

RECOMMENDED COMPONENT

Delegated minor variances for tree retention

PURPOSE | Local governments can use delegated minor variances to clarify how they expect permit applicants to modify their design to accommodate existing trees.

In practice, it might include the following bylaw components:

- **Significant trees** that are the target for retention. Most commonly, variances would be given for trees of high importance, such as heritage or significant trees (see tree bylaw section 6.3.1.1, additional options, for examples of typical categories of trees of high significance).
- **Delegated minor variances** that will be considered to enable tree retention. They commonly include variances to building setbacks, height, and parking.



The province's SSMUH Policy Manual recommends that local governments use delegated minor variances to expedite permitting where site conditions require variations to achieve the intended use, such as to retain trees or improve stormwater management outcomes.

Examples of where this approach is used:

- City of North Vancouver [Development Procedures Bylaw section 2 – definition for minor development variance permit](#)
- Seattle exceptional tree (see the inset)

5.2.4 Development Procedures

Practitioners can use their land use bylaws to provide flexibility for property owners and local governments to retain existing canopy with minor variances. Tree bylaws cannot prevent owners from achieving as-of-right development, meaning that tree removal will always be permitted where it is required to build a proposed development that conforms with the permitted use and zoning. Nonetheless, it is common for tree bylaws to require applicants to consider modifications to their proposed development to accommodate tree retention where possible (see tree bylaw section 6.3.4.2, conflict with buildings or structures).

5.2.4.1 Procedural Considerations

Land use bylaws should address the information required to support the application, such as a legal survey including trees, a tree inventory, and a site and landscaping plan that identifies retained and new trees. The bylaws should also define the appropriate professionals to undertake the inventories, design, and inspections (e.g., landscape architect, arborist, qualified environmental professional). Practitioners should seek out information about trees and environmentally sensitive areas on site at the pre-application or first application stage to consider options for retention at the early design stage.





SEATTLE'S EXCEPTIONAL TREE PROTECTION ZONING

The City of Seattle, Washington defines exceptional trees as species of a certain size growing individually or in groves. The City has a defined process to vary building setbacks and height to retain exceptional trees. The process and development requirements vary based on the zone:

- **Single-family zones:** Applicants must take advantage of front and rear yard setback departures to enable the retention of exceptional trees.
- **Lowrise zones:** Where an exceptional tree is threatened, applicants must either follow a Streamlined Design Review process to make adjustments to enable tree retention, or they must consider increases in the permitted height detailed in the Tree Protection Code to achieve the same purpose. Additional departures to increase FAR and height or reduce the number and standard of required parking spaces may also be explored with applicants to enable the retention of exceptional trees.
- **Midrise and commercial zones:** Applicants must explore options such as departures from the land use code (as approved by a Design Review) or changes to parking plans to retain exceptional trees.

[Seattle Department of Construction & Inspections \(2019\) – Tree Protection Regulations in Seattle.](#)

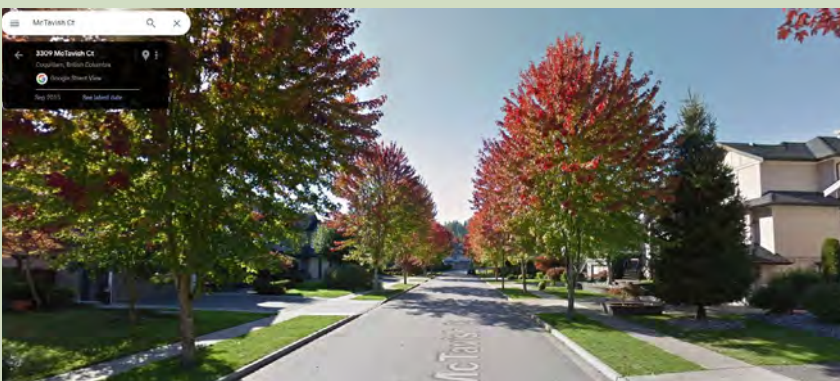
BOULEVARD LOCATION

The City of Coquitlam’s streetscape standards require the installation of boulevards between the street curb and sidewalks to urbanize its streets. Since 2018, the [Frontage Works Program](#) has required development or building permit holders in southwest Coquitlam to either make the rights-of-way upgrades or to pay a fee for the City to make the improvements. The examples below show streets in the same neighbourhood that were built before and after the standards and Frontage Works Program required installation of a boulevard between the street curb and sidewalk:

Boulevards adjacent to private land:



Boulevards located between the curb and sidewalk:



5.3 DEVELOPMENT, SUBDIVISION AND SERVICING BYLAW

This subsection focuses on development, subdivision and servicing bylaws that set the standards and specifications for works and services for land development in local governments. In most cases, these bylaws define the standards for landscaping in road rights-of-way that make up a significant proportion of public lands across Metro Vancouver. Road rights-of-way often need to accommodate multiple functions and services within a limited footprint both above and below ground, which adds complexity to tree planting. However, roads are also an important location to grow tree canopy and to deliver the benefits of tree canopy close to where people live and work. The options presented in this section can improve outcomes by ensuring sufficient space and soil are provided in the road rights-of-way to support tree canopy.

To supplement this section of the Toolkit, practitioners can refer to Appendix 5 for a worksheet built to help local governments assess their regulatory tools.

5.3.1 Procedural Considerations

As part of the development, subdivision and servicing process, procedures should address the information required to support the application (e.g., legal survey including trees, tree inventory, site plan), securities that the local government will collect, documentation required for substantial completion, and the professionals (e.g., Landscape Architect) who will undertake the design, inspection, testing and record keeping of landscaping trail and street trees (unless installed by the local government).

5.3.2 Works and Services Standards for Trees in Boulevards

The first step to providing tree canopy in rights-of-way is for practitioners to ensure that the boulevard width and location are adequate to support the targeted tree canopy.

RECOMMENDED COMPONENT

Boulevard or median planting strip

PURPOSE | The boulevard designates the area between the private property line and the street curb that local governments generally use to plant trees and install street furniture like streetlamps or utilities. The boulevard excludes sidewalks, curbs, and driveways. The median is the strip of land between two lanes of opposing traffic. The works and services standards will generally define when a boulevard and landscaping are required by road classification and/or zone or land use. Local governments should require boulevard landscaping in their services standards/required service levels and provide the largest width possible for a boulevard or median tree planting strip.

In practice, it might include the following bylaw components:

- **Minimum boulevard width:** Where trees are planted in a median or a boulevard planting strip shared with utilities, a minimum width of 2 m is recommended. This width generally ensures enough space for trees to grow and allows for a setback from utilities or vehicles. However, if the utilities are not located in the boulevard area, trees can be planted in a space that is at least 1.5 m wide. Wider planting strips or access to additional soil volume either under the sidewalk or via root bridges to adjacent soil volume areas may be necessary to support medium- to large-sized trees.
- **Location of the boulevard:** Boulevard planting strips can either be located between the curb and the sidewalk or adjacent to the private frontage when there is a monolithic sidewalk (i.e., a sidewalk abutting a curb). While the planting strip adjacent to a private front yard can seem to provide a more continuous planting space, these locations are often perceived as an extension of private property where City tree planting may not be welcomed. Locating the boulevard between the curb and the sidewalk provides a clear distinction between public and private land, establishes a more continuous street tree canopy, and provides a more clearly dedicated space for trees in land uses with smaller front setbacks. Regardless of setbacks in the adjacent land use, locating boulevards between the street curb and the sidewalk should be prioritized where local governments seek to achieve more canopy closure above the street.

Examples of where this approach is used:

- The City of Coquitlam's streetscape standards and Frontage Works Program require boulevards located between the street curb and the sidewalk to achieve uniform tree planting (see inset).

5.3.3 Landscaping Design Criteria and Standard Specifications

After setting the location and width of the planting strips, practitioners should ensure that landscaping standards will support canopy growth.

RECOMMENDED COMPONENT

Landscaping criteria, standards, and specifications

PURPOSE | Landscaping standards are essential to ensure trees are planted in appropriate locations and are of a quality and size to survive and thrive. In most cases, local governments will use the Master Municipal Construction Documents (MMCD) as their base standard and then provide supplementary standards in a bylaw.

In practice, it might include the following bylaw components:

- **Plant spacing, location and type:** Design criteria should include minimum spacing to allow adequate space for trees of different sizes at maturity. Criteria should also guide location to avoid long-term conflicts. Local governments can incorporate species diversity guidance in the standards and provide a preferred species list to encourage planting climate-suitable and non-invasive species.
- **Stock size and quality:** Landscaping standards should refer to the Canadian Nursery Tree Stock Standard for stock size and quality.
- **Soil volume:** Soil volume minimums ensure that newly constructed streetscapes can accommodate trees (see Table 3 below). Soil volumes can be met either in ground where native soils have been retained or with a combination of topsoil and soil cells or structural soil. Continuous, connected soil trenches should be encouraged. When adequate soil volumes are not achievable via planting strips, use soil cells to increase soil volumes and connect root zones of planting under paving. The soil volume provided for local street trees is one of the most significant ways these bylaws affect urban tree canopy.
- **Soil depth:** Soil depth is an important metric for accommodating adequate soil volume. Most tree roots grow within the top 0.6 m of soil and as deep as 1 m if there is adequate air and water to survive. Establishing a soil depth of up to 1,000 mm enables boulevards to hold more soil in the planting strip. It may also provide options for integrating stormwater into the lower depths of the boulevard. The installation of soil to these depths must be done to the correct specification to minimize settling that could result in tripping hazards and the need to add more soil in the future.
- **Soil solutions, surface treatments and root barriers:** Design criteria should enable the use of structural soils or soil cells to meet soil volume requirements. Standards should establish the quality of soil and installation for topsoil, structural soil and soil cells. Root barriers should be used whenever trees are planted within 2 metres of hardscape.
- **Standards for the landscape plan and bonding:** Typically, a warranty period is attached to the landscaping requirement where developers are responsible for installing and planting boulevards. Bonds should be of an amount that covers the cost of stock, installation, maintenance, and inspections. Where surface treatments are required to prevent tripping hazards, tree grates should be used sparingly (due to cost), and alternatives such as bonded gravel or compacted sand should be enabled.

RECOMMENDED COMPONENT

Landscaping criteria, standards, and specifications

- **Irrigation and drainage:** Design criteria can specify when the local government requires irrigation for street trees. Standards can provide specifications for installing irrigation infrastructure or drainage in tree planting spaces. Irrigation and drainage requirements are particularly important for planting sites with more limited soil volume or extensive hardscape that limits infiltration.
- **Utility and infrastructure setbacks:** Utility and infrastructure setbacks can result in trees being excluded from a streetscape or private yard. It is necessary to balance the potential for infrastructure conflict with the flexibility to include trees in spaces shared with utilities. Setbacks should be firm when a hazard could be created (e.g., intersection visibility, gas main connections) but allow for reasonable flexibility in other situations. Where there is inadequate space to achieve utility setbacks and a dedicated trench for trees, consideration should be given to making up the difference by extending the right-of-way onto private land.

The table below provides the recommended soil volume minimums for street trees (Metro Vancouver, 2017).

Table 3. Minimum recommended soil volume per tree

TREE SIZE	Min soil volume (m ³) ⁴	Shared or irrigated soil volume (m ³)
Small tree canopy spread is up to 6 m	8	6
Medium tree canopy - spread is up to 10.0 m	20	15
Large tree canopy - spread is greater than 10.0 m	35	30

Credit soil volume according to actual content of soil:

- Soil: Volume of soil (Length x Width x Depth)
- Soil cells: Volume of soil cell installation (Length x Width x Depth) x 0.92
- Structural soil: Volume of structural soil (Length x Width x Depth) x 0.2



- **ADDITIONAL OPTION** | Components that can support the street boulevard standards described above to achieve more tree canopy:

Perforated curbs: Directing water from our streets into boulevards can be a way to reduce stormwater runoff while improving water access for street trees.

- **Examples of where this approach is used:**
 - ◇ The City of Coquitlam’s streetscape standards make use of perforated curbs to direct stormwater from the roadway into boulevards.

Discrete solutions to expand tree planting space: Streetscape design standards define the standard location for streetscape components such as utilities, sidewalks, road lanes, bicycle lanes, boulevards, stormwater, trees and lighting in a streetscape. Standards should allow flexibility to adjust streetscape design when there are competing interests in the streetscape by establishing a hierarchy of preferred and alternative compliance methods for different streetscape components. They can also allow for discrete solutions that maximize tree planting space where space in the boulevard becomes limited, such as:

- **Curb bulges in the parking lane:** Curb bulges are commonly used to improve pedestrian safety at intersections but can also help stagger tree planting where space might be too limited in the boulevard.
- **Suspended slab sidewalks:** Suspended slabs can be used to achieve load-bearing requirements for sidewalks while retaining soil volume under sidewalks.
- **Permeable pavement:** Permeable sidewalks can allow for water infiltration through a sidewalk or bike lane.
- **Siting responsive to site condition:** Rights-of-way upgrades to improve action transportation can compromise tree retention or planting, yet tree canopy is also important to encourage those modes of transportation. Where healthy trees are already growing along a street, using atypical siting to install new bike lanes or sidewalks can help retain canopy.
 - ◇ **Examples of where this approach is used:** The 10th Avenue bike lane near the Vancouver General Hospital was designed to retain as many mature trees as possible along the corridor. The bike lane width and alignment vary along the corridor to respond to pre-existing site conditions.







Environmental development permit areas, covenants, and tree bylaws can be effective tools to regulate the protection, restoration, and replacement of trees. They should be supported by higher-level plans and land use regulations to effectively preserve trees and grow tree canopy.

6.0 Tools Primarily Regulating Trees

This Toolkit provides detailed information about regulatory tools focused on preserving trees and growing tree canopy, specifically:

- **Environmental development permit areas**, which identify locations that need special treatment for certain purposes such as the protection of the natural environment, its ecosystems and biological diversity and typically include:
 - Identification of the development permit area
 - Development permit area guidelines
- **Covenants**, which can require that an amenity be protected, preserved, conserved, maintained, enhanced, restored or kept in its natural or existing state
- **Tree Bylaws**, which regulate the protection and replacement of individual trees and typically include:
 - Bylaw definitions
 - Prohibitions
 - Permitted removal reasons
 - Permit application information requirements
 - Requirements and incentives for tree retention and replacement

- Replacement tree planting standards
- Actions on site
- Securities
- Penalties
- Tree bylaw implementation

The following sections provide the detailed information for each key component of the two regulations, including:

- Purpose of the component
- Recommendations for each element, either as:
 - Must have – a recommended best practice or list of alternatives that should be chosen based on the community context, values, goals and impacts
 - Recommended or additional options – listed for every community’s consideration, where they may help achieve specific goals or manage impacts
- Examples of where each option is found in existing regulations



6.1 ENVIRONMENTAL DEVELOPMENT PERMIT AREAS

The Local Government Act allows land to be designated under a development permit area (DPA) for the protection of the natural environment that may “require protection measures, including that vegetation or trees be planted or retained” (section 491(1) of the *Local Government Act*).

Regional and community planning processes will often identify natural values and hazards related to forest stands that overlap with but are not adequately addressed by tree bylaws. Using development permit areas (DPAs) can define land with a specific management intent to align it with strategic objectives for protection of the natural environment. For example, in British Columbia, DPAs can be used for the (LGA, 2015):

- *Protection of the natural environment, its ecosystems and biological diversity;*
- *Protection of development from hazardous conditions;*
- *Establishment of objectives to promote energy conservation;*
- *Establishment of objectives to promote water conservation; or*
- *Establishment of objectives to promote the reduction of greenhouse gas emissions.*

DPAs can complement tree bylaws by providing protection,

restoration or enhancement guidelines to achieve a broader range of objectives in these areas when development occurs.

Practitioners surveyed emphasized the importance of environmentally sensitive areas, waterfront and riparian areas for protecting tree stands. Some communities have also found form and character DPAs and energy DPAs to be helpful in managing urban trees or tree stands.

Environmental DPAs are used to protect natural features from the impacts of construction or land alteration activities (Britton-Foster, Grant, & Curran, 2016). They are often used to protect environmentally sensitive areas including the marine foreshore, watercourses, wetlands and sensitive terrestrial ecosystems. Environmental DPAs can help protect trees from development activity by identifying significant forest stands and enforcing design guidelines to protect them. Environmental DPAs can be designed to require that identified forested areas be protected and, if degraded, restored or enhanced as a requirement of a development application. Environmental DPAs can be designed to work with, or independently of, a tree bylaw.

6.1.1 Identification of the Development Permit Area

PURPOSE | Identify the environmentally sensitive areas where the development permit applies and “describe the special conditions or objectives that justify the designation” (Local Government Act, 2015)

MUST HAVE: Mapping Environmentally Sensitive Areas

Environmentally sensitive areas must be defined in order to provide landowners with information on whether the development permit guidelines will apply to their development application.

EDPAs may use mapping of varying precision to designate areas where the development permit guidelines may apply. The designation of those areas is often done using external mapping data from regional or provincial sources. At a minimum, environmental DPAs should provide a principled basis for landowners to understand what falls within or does not fall within the approximate area boundary (Britton-Foster, Grant, & Curran, 2016).

Available technology and spatial information for mapping allows municipalities to provide relatively detailed locations of DPAs. The scale, precision and update frequency of mapping must be carefully considered, as environmental DPAs with precise but inaccurate mapping have been challenged.

ADDITIONAL OPTIONS | In addition to the mapping of environmentally sensitive areas, municipalities may wish to consider the mapping and protection of a network of ecosystems to preserve landscape level ecosystem connectivity. This network of ecosystems is called green infrastructure network mapping.

- **Green infrastructure network mapping**

Green infrastructure networks seek to identify a network of interconnected natural areas that will conserve ecosystem values and functions as well as provide benefits to wildlife and people. A green infrastructure network consists of:

- Core habitat areas that provide a home range for species
- Natural corridors across urban areas that prevent the fragmentation of core habitat areas

Once mapped, green infrastructure network areas can be included and protected within environmental DPAs. The mapping can also serve to inform Neighbourhood Plans and other landscape-level plans.

At the regional level, Metro Vancouver manages and updates the Sensitive Ecosystem Inventory. This inventory may be a good starting point for municipalities wishing to map environmentally sensitive areas. It would however need to be accompanied by a detailed assessment of environmentally sensitive areas to develop mapping at the municipal and neighbourhood scales.

PROTECTING TREES WITHIN DPAS

It is common for jurisdictions that have a tree bylaw and an environmental DPA to include trees within DPAs in the bylaw’s definition of protected trees. The inclusion of trees within development permit areas in the tree bylaw strengthens their protection because of the enforcement mechanisms included in the tree bylaw. The tree bylaw can also ensure that, when the development permit is waived or not required, a suitable tree permitting and replacement process applies. If both an environmental development permit area and tree bylaw exist, consideration should be given to exempting applicants from a tree removal permit in cases where a development permit has been granted and ensuring that both policies are designed to have essentially the same requirements for tree protection, removal and replacement in DPAs.



In practice

The City of Surrey implements a sensitive ecosystems DPA that encompasses both a streamside protection DPA and green infrastructure network. It allows the City to protect habitat patches, to avoid the fragmentation of ecosystems, and to require habitat restoration with development.

6.1.2 Development Permit Area Guidelines

PURPOSE | Development guidelines inform landowners about what the requirements are for protecting DPAs when they develop adjacent lands.

OPTIONS

Many guidelines exist that can help preserve trees and grow tree canopy. The options highlighted in this Toolkit include tree protection within DPAs, the preservation and enhancement of forested ecosystems, restoration, and information requirements.

Tree protection within DPAs

Trees within EDPAs are usually protected unless deemed hazardous. Tree protection measures include:

- **Relocating** proposed buildings, structures, servicing or roads to prevent root impacts
- **Fencing** can be required during construction, or as a permanent fixture
- **Pruning** to carefully select branches for removal to reduce the wind load in trees (Stubbs et al., 2019)

Preservation or enhancement of forested ecosystems

Forested ecosystems can be preserved or enhanced with measures such as:

- **Tree species requirements** to maintain the composition and density of native species with replanting
- **Retention of wildlife** trees to provide habitat within forested stands
- **Preservation or enhancement of specific areas** to prevent fragmentation or maintain connectivity
- **Buffer zone planting** in the zone adjacent to the DPA. Natural landscaping may be required to provide a soft transition from the environmentally sensitive area to the development area

Restoration

Where existing ecosystems are degraded or damaged, environmental DPAs can require measures to return the environmentally sensitive area to its natural state:

- **Planting of native trees and plants** to restore the native plant community
- **Removal of invasive species** to prevent competition with native species and spread into adjacent natural areas

Information requirements

Environmental DPA guidelines can require applicants to provide reports from qualified professionals such as:

- **Site conditions and monitoring** from a qualified environmental professional (i.e., a person in good standing with a legislated self-regulating association in British Columbia who is acting within their area of expertise, such as a professional Biologist, Agrologist, Arborist, Forester, Geoscientist, Engineer, Architect, or Landscape Architect)
- **Riparian assessment to identify the Streamside Protection and Enhancement Area** per Provincial methods defined in the Riparian Areas Regulation
- **Stand prescriptions to reduce the likelihood of windthrow** along new exposed forest edges
- **The identification of hazardous trees** by an ISA Certified Arborist who holds the Tree Risk Assessment Qualification (TRAQ)



6.1.3 Other Types of Development Permit Areas

Tree retention is often regulated within hazardous condition DPAs such as steep slopes DPAs to be helpful for tree retention. However, wildfire DPAs may conflict with tree preservation or replacement goals where trees pose a wildfire risk to structures. Where wildfire DPAs apply, it is important to ensure that the wildfire DPA and the tree bylaw are aligned to enable consistency with wildland urban interface management objectives. Alignment could involve permitting removals for wildfire risk reduction in the bylaw and ensuring that replacement trees and landscapes conform with FireSmart guidelines.

6.2 COVENANTS

Covenants are a tool local governments use to regulate trees on individual land parcels, usually with rezoning, subdivision, or development permits. The Province of British Columbia's Land Title Act, section 219 allows covenants (sometimes also called conservation covenants) to be registered on title. This toolkit section offers a brief description of the use of covenants to preserve trees and grow tree canopy but is not a comprehensive discussion of the legal and technical requirements of covenants in British Columbia.

Covenants registered under section 219 of the Land Title Act are a voluntary agreement between a property owner and a designated organization (government body or land trust organization) registered on the property title. Section 219 covenants can be both positive (require actions) and negative (prohibit actions) in nature (WCEL, 2005; LTA of BC, 2014). They can be used to protect, conserve, maintain, enhance, restore or keep amenities such as natural, environmental, wildlife or plant value in its natural or existing state (LTA, s.219). Conservation covenants can 'run with the land', binding all future owners of the property for the full term of the agreement, which can be perpetual.

Section 219 covenants can protect trees or sensitive ecosystems on developing properties, impose maintenance or restoration requirements and restrict actions that could damage the protected features. For example, covenants can require documentation such as tree protection and replanting plans or risk assessments prior to undertaking the subdivision of land. Covenants usually include a baseline report documenting the state of the land at the time of registering the covenant (NATEP, 2018). The report can describe special features and serves as a benchmark for future monitoring. Covenants can help to provide clarity around what is protected on a site; both to the mu-



nicipality as the site moves through the development process, and to future owners so that they know what is protected on their property. Covenants can be amended or discharged and do not have to be perpetual agreements.

Working landscape covenants can also be developed to allow sustainable activities such as organic farming or sustainable forestry on land under a conservation covenant (WCEL, 2005). This type of conservation covenant is more complex than ones that protect land in its natural state. Working landscape covenants should clarify the priority for the management of the covenant area and require a management approach to be established in accordance with those priorities and the objectives of the covenant.

Statutory rights of way created under Section 218 of the *Land Title Act* are sometimes used to secure access to a property, such as for a public trail, in addition to a Section 219 covenant that specifies the positive (e.g., maintenance requirement) and negative (e.g., restricting tree removals) obligations of the owner granting the covenant.

6.3 Section Table of Contents Tree Bylaws

6.3	Tree Bylaws	
6.3.1	Bylaw Definitions	52
6.3.1.1.	Protected Tree	52
6.3.1.2.	Diameter at Breast Height	58
6.3.1.3	Tree Protection Zone	59
6.3.1.4	Applicant or Application Type	61
6.3.1.5	Pruning	62
6.3.1.6	Other Best Practices Definitions	63
6.3.2	Exemptions	63
6.3.3	Prohibitions	64
6.3.4	Permitted Removal Reasons	65
6.3.4.1.	Risk, dead and dying trees	65
6.3.4.2.	Conflict with Buildings or Structures	65
6.3.5	Permit Application Information Requirements	68
6.3.6	Requirements and Incentives for Tree Retention and Replacement	70

6.3.6.1. Replacement Requirements – Achieving Successional Replacement	70
6.3.6.2 Replacement Requirements – Achieving Canopy Growth	72
6.3.6.3 Cash-in-lieu	74
6.3.7 Replacement Tree Planting Standards	76
6.3.7.1 Species list	76
6.3.7.2 Spacing and soil volume	77
6.3.7.3 Stock and planting standards	78
6.3.8 Actions on Site	79
6.3.8.1 Tree protection measures	79
6.3.8.2 Notification and marking	79
6.3.9 Securities	80
6.3.9.1 Securities for tree retention	80
6.3.9.2 Securities for tree replacement	82
6.3.10 Penalties	84
6.3.11 Tree Bylaw implementation	85





6.3 TREE BYLAWS

The *Community Charter* enables Council to “regulate, prohibit or impose requirements in relation to [...] trees” (sections 8(3)(c), 50 and 52). Regional and local planning processes increasingly identify tree protection and replacement as important community values. While environmental DPAs often provide adequate protection for tree stands and ecosystems, tree bylaws serve to regulate the protection or replacement of individual trees or groups of trees found across the municipal landscape.

While there are established best practices for some bylaw components, others are less well-defined. The alternatives and options available should be selected after consideration of a municipality’s urban forest governance context.

The following sections are organized in typical bylaw sections or themes. Each section describes the key components that should be considered when developing tree bylaws and highlights when a best practice recommendation or an alternative option would be

relevant. Examples of communities that have used any of the approaches presented are not exhaustive but provide readers with further opportunities to explore and adapt the options that are most appropriate for their local context.

6.3.1 Bylaw Definitions

Bylaw definitions set a common understanding for terminology used throughout the bylaw. Many bylaw definitions refer to established technical standards and clarify how to interpret other sections of the bylaw.

6.3.1.1. Protected Tree

PURPOSE | To define what trees the bylaw applies to. Public or private trees (or both), tree size and species are common criteria discussed. The definition itself does not drive the protection or replacement outcomes; tree protection rather depends on the acceptable reasons for removal and the replacement requirements.

MUST HAVE: PROTECTED TREE SIZE

Tree bylaws need to identify the size of trees that the bylaw will apply to:

- * Option 1: Small trees
- * Option 2: Medium trees
- * Option 3: Large trees

OPTION 1: SMALL TREES (for example ≥ 6 cm DBH)

Communities may decide to regulate trees at a small size when the bylaw is less restrictive of tree removals and is using the permit system to track tree removals or is restrictive only under certain circumstances (e.g., limits removals in one year or when related to a subdivision). This could be used in conjunction with other categories of protected trees that have greater restrictions on their removal.

Context

This approach may be most relevant for municipalities interested in tracking tree removals and not placing too many restrictions on the removal of protected trees.

Found in Nanaimo, Anmore, Québec City (QC)

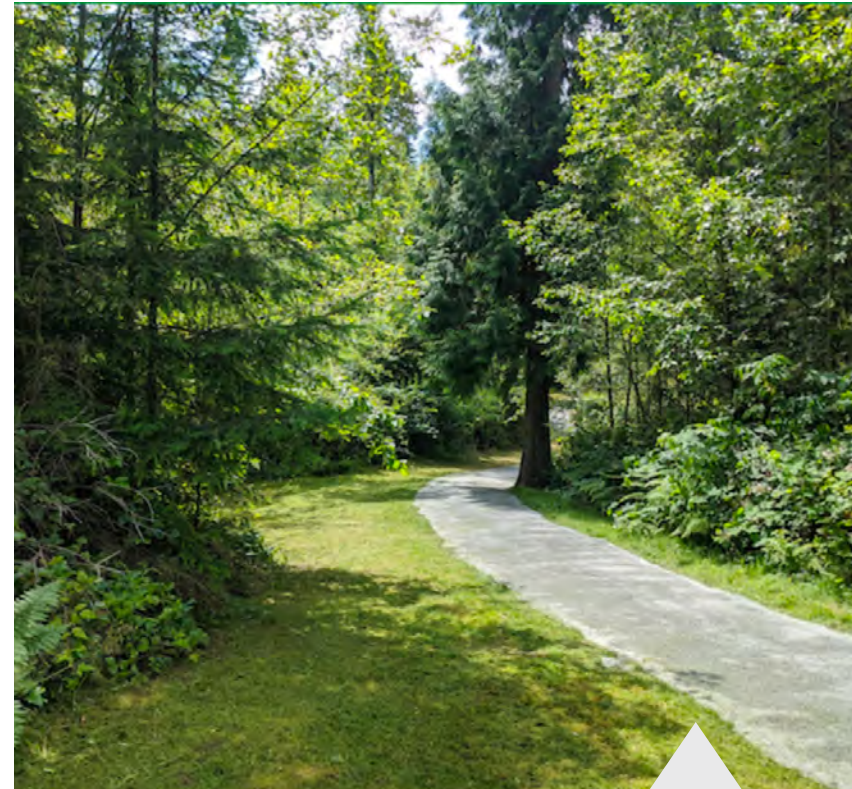
Pros

- Regulates most of the trees and canopy in a municipality
- Provides a good indication of the rate of tree removals
- Can identify and encourage retention of young trees that are more adaptable to development disturbances, with development

Cons

- Creates very high permit volume unless there are exemptions allowing removals in some circumstances (e.g., a certain number of trees being cut without a permit each year)
- May not be supported by the community without allowances to remove some trees
- Creates higher costs for development related applications to survey many trees and prepare management plans
- It is not usually practical to restrict removals or require replacements for small trees so often the bylaw functions more as a permit to track removals

This option may be best implemented with additional protected tree definition options, to restrict the removal of specific trees of importance.



In practice

The Village of Anmore requires a tree cutting permit for all trees 10 cm or larger in DBH if the number removed is greater than annual allowable cut and not in direct hazard or conflict with infrastructure.

Hedges, alder and cottonwood are exempt from the definition.

In practice

Brampton does not require permits for trees with a DBH less than 30 cm.



OPTION 2: MEDIUM TREES (for example ≥ 20 cm DBH)

The tree bylaw applies to medium-sized trees, which enables municipalities to regulate reasons for removal and replacement requirements for those trees.

Context

Medium-size protected trees are the most common in Lower Mainland tree bylaws. This size class may be most appropriate for communities that are fairly urban and where most properties have few trees. Alternatively, it may be appropriate in communities that have many trees and where the bylaw is not restricting tree removal but is using the permit system to track removals.

Most commonly 20 cm DBH found in Burnaby, Delta, Richmond, Port Coquitlam, Vancouver, New Westminster, Maple Ridge, Abbotsford, Courtenay, Squamish
30 cm DBH found in Surrey, White Rock, Victoria, Brampton (ON)

Pros

- Typically regulates more than half of the trees and canopy in a municipality
- Seems to be a practical size for the number of trees brought into regulation based on the large number of municipalities using either 20 cm or 30 cm DBH
- Results in more tree replacement in the landscape than a larger protected tree size, if tied to a replacement requirement

Cons

- Creates relatively high permit volume unless there are exemptions allowing removals in some circumstances (e.g., a certain number of trees being cut without a permit each year)
- Increases regulation on private property. Tree replacement requirements also tend to be higher, which is a cost to applicants and may not receive broad community support.

For communities using this protected tree size to monitor removals, this would be best implemented with other categories of protected tree that have greater restrictions on their removal. Municipalities choosing this protected tree size should also consider defining hedges and whether they are protected under the bylaw.

OPTION 3: LARGE TREES (for example ≥ 50 cm DBH)

The tree bylaw applies to large-sized trees, which enables municipalities to regulate reasons for removal and replacement requirements only for mature specimens of larger species.

Context

This approach may be most appropriate for communities with limited resources and low development pressure that want to prioritize protecting the largest, oldest trees.

Found in the District of North Vancouver, West Vancouver

Pros

- Typically regulates the large canopy trees in a municipality
- Associated with a low volume of permits, generally easy for the community to support because few trees are regulated

Cons

- Most of the urban forest is unregulated and can be cut without a permit
- Only regulates large trees that are relatively rare on properties, so may be perceived as a disincentive for having a larger tree on a property

In addition to defining the protected tree size, municipalities that require replacement trees as a bylaw requirement should protect replacement trees regardless of their size.

In practice

The District of North Vancouver defines large-diameter trees as 75 cm or greater.





In practice

Courtenay protects 6 species 0.5 m and taller in size.

ADDITIONAL OPTIONS | In addition to defining protected trees with a diameter size, several municipalities adopt tree protection or replacement requirements for other types of individual trees or tree stands of interest. These options become particularly relevant when a tree bylaw is permissive of removals because they offer a more targeted way to protect trees of special interest. Common categories of trees included in protected tree definitions are municipal trees, species of interest, trees on sensitive land, heritage or significant trees and hedges.

Municipal trees: Municipal trees must be protected and many communities choose to protect trees on public land through their tree bylaw, although they can also be protected under different bylaws. Regulating the protection of municipal trees in a tree bylaw can offer consistency and ease of access for information about tree protection on public and private land. However, some communities protect them in other bylaws such as a street and traffic bylaw or a parks and boulevard bylaw supported by a municipal tree policy.

Places where this approach is found: Surrey, White Rock, Saanich, Victoria, Courtenay and many others

Species of interest: Communities that want to maintain habitat value with

tree species important to the local ecology may decide to include smaller trees of specific species to their protected tree definition. In these cases, the potential impacts of climate change on these species should be considered so that regulations enable replacement with species suitable to the future climate when necessary.

Trees on sensitive land: Communities may choose to protect trees located on sensitive lands defined by a mapped boundary or descriptive criteria, such as lands that:

- Are susceptible to flooding or erosion, or have unstable slopes or poor drainage
- Have special significance for animal, bird or plant life, including wetlands, forests and nesting areas
- Have cultural or historical significance
- Foster connectivity and biodiversity for flora and fauna
- Are adjacent to waterways

Places where this approach is found: Saanich, Courtenay, Squamish, Mississauga (ON)

Heritage or Significant trees: A municipality might choose to protect a specific list of trees when:

- Heritage trees have been identified in the community and owners have allowed trees to be placed on a register
- Specific qualities have been defined for trees (e.g., size, health, age, heritage, endangered, uniqueness) that will require a higher standard to be met to remove the tree – a set of criteria, nomination process and community board would typically be required to assess whether trees are significant

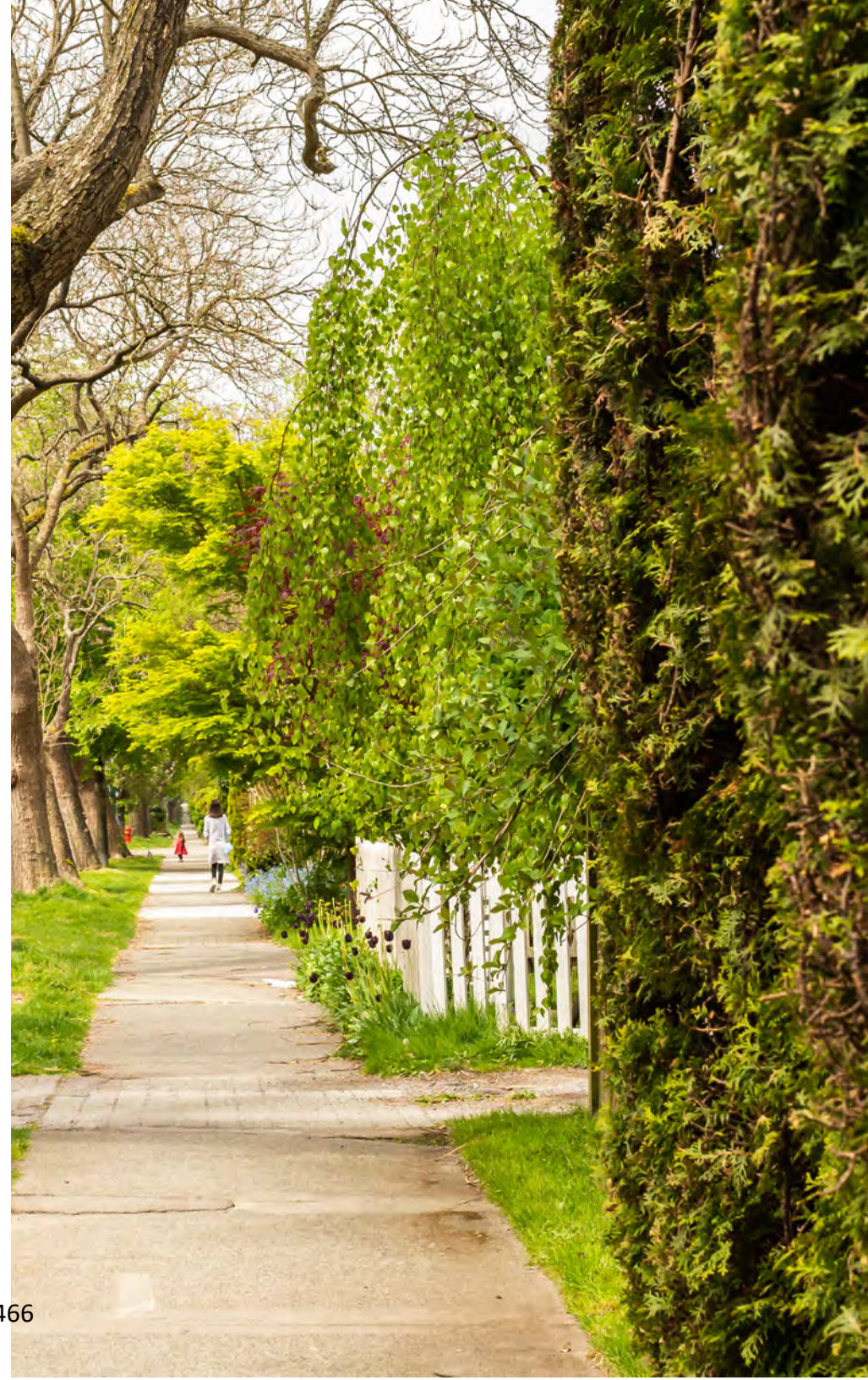
Places where this approach is found: *Maple Ridge, New Westminster, Surrey, Mississauga (ON)*

Hedges: Hedges can be challenging to regulate when they contain trees that meet the protected tree size definition because:

- All trees in a hedge grow up together and it may be appropriate to retain them or remove them as a group even if only one or some of the trees meet acceptable reasons for removal
- Hedges can contain many protected trees that, if approved for removal under a bylaw with a high replacement ratio, would have unreasonably high tree replacement requirements
- Hedges are often sheared and pruned in a way that would be considered damaging to a regular tree and so it can be necessary to distinguish regular maintenance of hedges from tree damaging activities that would be a violation of a bylaw

Once a hedge is defined, it can either be protected or exempted under the bylaw as a hedge, rather than as individual protected trees.

Places where this approach is found: *New Westminster*





6.3.1.2. Diameter at Breast Height

PURPOSE | A diameter at breast height (DBH) definition is typically used to indicate how to measure a tree and determine if it is a protected tree, to calculate the tree protection zone (see below) and sometimes to calculate replacement requirements.

MUST HAVE: Diameter at Breast Height Measurement

A measurable definition is a must have to consistently determine the DBH of a tree.

BEST PRACTICES FOR MEASURING DBH

The International Society of Arboriculture defines best practices for measuring DBH (Bond, 2013):

- For a 'typical' single trunk, DBH is found by measuring the diameter at 1.4 m above the ground²
- For a tree that branches out at or below 1.4 m, so that the diameter is smaller below 1.4 m, then the diameter is measured at the smallest point below the branching point
- For a multi-stemmed tree that branches between 1 and 1.5 metres, measure either:
 - The smallest point below the fork (Magarik, Roman, & Henning, 2020) or
 - Measure each stem 30 cm above the branching point and sum the result

Recent research recommends measuring multi-stemmed urban trees by taking the diameter measurement at 30 cm, or below the fork (Magarik, Roman, & Henning, 2020). The research found no significant differences between these and other multi-stemmed measurement methods, and that this approach was an improvement over other methods because of the ease of measurement, simplicity and repeatability.

² It is standard practice in forestry to measure DBH at 1.3 m (Husch, Beers, & Kershaw, 2003; Avery & Burkhart, 2002) and some bylaws use this height as the standard for measuring DBH.

6.3.1.3 Tree Protection Zone

PURPOSE | To define the area around a tree that must be protected to prevent damage to roots so that the tree can be successfully retained during construction, or to determine when a tree cannot be retained successfully.



MUST HAVE: Tree Protection Zone

A measurable definition is a must have to consistently determine the tree protection zone.

The International Society of Arboriculture's (ISA) best management practices for Managing Trees During Construction (Fite & Smiley, 2016) defines the tree protection zone as an arborist-defined area surrounding the trunk. It is intended to protect roots and soil within the critical root zone and beyond, to maximize future tree health and stability.

Typically, the tree protection zone is calculated using either a trunk diameter method or a dripline method. The ISA's best management practices and the American National Standards Institute A300 (Part 5) Standards refer to tree protection zone multiplication factors of between 6 x and 18 x DBH dependent on relative tree age and tolerance (based on Matheny and Clark, 1998, and the British Standards Institute) (Fite & Smiley, 2016). The American National Standards Institute A300 (Part 5) Standards state that the tree protection zone should not be less than 6 x DBH without mitigation measures. Australian and British Standards use a multiplier of 12 x DBH as standard. Best management practices for the Pacific Northwest recommend using both 12 x DBH and dripline plus 1 m and selecting whichever is larger to define the tree protection zone (Oregon State University, 2009).

Based on the available best management practices guidance, it is recommended that municipalities consider defining the tree protection zone as:

- The area, on an approved plan prepared by an arborist, that shows the land surrounding the trunk of a protected tree expected to contain the bulk of the critical root zone of the tree, or
- In the absence of an approved plan, the area of land surrounding the trunk of a protected tree contained within a circle having a radius calculated by multiplying the diameter at breast height of the tree by 12 or dripline plus 1 m, whichever is larger



TREE PROTECTION ZONE VS. CRITICAL ROOT ZONE

The International Society of Arboriculture (ISA) defines the tree protection zone as an arborist-defined area intended to protect roots and soil within the critical root zone and beyond, whereas the critical root zone is the area immediately adjacent to the trunk where roots essential for tree health and stability are located.

The tree protection zone is used to inform the area around the tree that should be fenced during construction and should always be larger than the critical root zone; however, final fencing location is informed by professional judgment, species tolerances and site constraints that reflect where most of the roots are believed to be located on a site. For example, fencing would not block a sidewalk, or if a building existed within the tree protection zone, then the roots are less likely to be growing under the foundation and the fencing would be adjusted accordingly. If the tree protection zone is reduced on one or more sides, then increasing the tree protection zone on the opposite side may be appropriate (Fite & Smiley, 2016).

The ISA's best management practices for Managing Trees During Construction (Fite & Smiley, 2016) note that the critical root zone is subjective, they also note that regulations may choose to define it (e.g., the City of New Westminster defines the critical root zone as 6 x DBH). In the event that the tree protection zone needs to be temporarily reduced for a construction activity, the ISA best management practices note that the tree protection zone should not be reduced to an area smaller than the critical root zone.

While cutting roots within the critical root zone should always be avoided, there are instances when cuts may be required (e.g., sidewalk or utility repair). The ISA BMPs note that stability is compromised for some species when roots are cut at a distance of 3 x DBH (Fite & Smiley, 2016). However, an arborist must judge the proximity of cuts that can be tolerated and still allow the tree to remain stable.

6.3.1.4 Applicant or Application Type

PURPOSE | A definition of different types of applicants or applications is used when the requirements of the bylaw need to be differentiated.

RECOMMENDATION | Application types can be differentiated if a community wants to vary requirements such as the information required to assess the permit application (e.g., arborist report, tree survey, replacement plan, etc.), permit fees, replacement requirements, securities or cash-in-lieu according to the scale and complexity of the permit type.

DEVELOPMENT REQUIREMENTS IN LAND USE REGULATIONS AND DPAS

Requirements specific to development can instead be addressed separately in land use regulations or development permit area guidelines, in which case a tree bylaw would typically exempt tree cutting and removal approved under subdivision or development permits. It should be noted that regulating trees under multiple bylaws creates parallel processes that are usually administered by different departments; this approach requires careful coordination to ensure that the outcomes of each regulation are consistent with municipal objectives for the preservation of trees and growth of tree canopy.





6.3.1.5 Pruning

PURPOSE | To define acceptable pruning that can be carried out on a protected tree with or without a permit.

MUST HAVE: Acceptable Pruning

Describing acceptable pruning clarifies both enforcement and the public’s understanding of what type of pruning is acceptable. The pruning definition should be in accordance with the most current version of the American National Standards Institute Publication “American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Management – Standard Practices” and the companion “Best Management Practices” Series of the International Society of Arboriculture. Explicitly defining tree damaging activities, such as topping and excessive crown reduction, helps to clarify what is not acceptable pruning.

Bylaws do not always require a permit for acceptable pruning; however, if pruning is being regulated, then the pruning definition should define the size of limb requiring a tree permit, and only require that permit for protected trees.

PRUNING BEST MANAGEMENT PRACTICES

The ISA’s Best Management Practices for Pruning (Lilley, Gillman, & Smiley, 2002) note that pruning dose is guided by the objectives of the pruning, and the tolerance of tree to loss of foliage. Objectives listed in the Best Management Practices include:

- Improving structure
- Risk mitigation
- Clearance
- Maintaining health
- Restoration
- Size management
- Improving a view
- Improving aesthetics
- Managing wildlife habitat
- Reduce density

Pruning systems described in the best management practices include natural, pollard, topiary, hedge, espalier, pleach and fruit (Lilley, Gillman, & Smiley, 2002).

6.3.1.6 Other Best Practices Definitions

Other definitions that may be useful to include are:

- **Arborist:** means a person holding a current certification of ISA Certified Arborist issued by the International Society of Arboriculture
- **Tree risk assessor:** means a person who holds the International Society of Arboriculture’s Tree Risk Assessment Qualification (TRAQ)
- **Arboricultural best practices:** means practices in accordance with the most current version of the American National Standards Institute Publication, “American National Standard for Tree Care Operations - Tree, Shrub, and Other Woody Plant Management - Standard Practices” and the companion “Best Management Practices” Series of the International Society of Arboriculture
- **High or extreme risk tree:** means a tree that has, in the opinion of a Tree Risk Assessor, a high or extreme TRAQ risk rating
- **Qualified Environmental Professional:** means a person in good standing with a legislated self-regulating association in British Columbia who is acting within the individual’s area of expertise and includes a professional Biologist, Agrologist, Arborist, Forester, Geoscientist, Engineer or Technologist



6.3.2 Exemptions

PURPOSE | Exemptions are used to enable certain groups or activities to proceed without a tree permit. Exemptions are needed when it would be impractical for a group to apply for tree permits given the frequency or volume of their work, or when other statutes give them the power to cut or remove trees. Exemption may include tree cutting or removal:

- For farming use
- Pursuant to the Hydro and Power Authority Act
- For Survey lines work pursuant to the Land Surveyors Act
- By the Government of Canada, the Province of British Columbia or Regional Government on their own properties
- By a public utility for the purpose of safety, maintenance or operation of the utility’s service or infrastructure on their own properties
- By the municipality for works undertaken by the municipality on its own property

Some municipalities exempt their operations from the tree bylaw to enable a more efficient and adapted process to take place internally. Municipalities that exempt their operations from the bylaw should develop an internal policy that details the process to be followed by staff. This process should meet or exceed bylaw requirements. Research has shown that for local governments to be successful in preserving trees and growing canopy cover, they need to address those issues with good interdepartmental coordination (Ordonez & Livesley, 2020).

6.3.3 Prohibitions

PURPOSE | Prohibitions describe what is prohibited except when permitted in the bylaw and in accordance with the terms of a tree permit. Prohibitions typically include cutting, removal and damage, and often address requirements for compliance and accurate information.



RECOMMENDED: Damaging activities

Describing tree damaging activities provides clarity both for enforcement and for the public to understand what activities constitute damage. Just as with cutting or removal, there may be circumstances when tree damage is permitted in accordance with the bylaw and a tree permit. For example, cutting tree roots and altering the grade within a tree protection zone does damage the tree but may be required to accommodate a pathway. If the tree can tolerate the damage and still be safe to retain, then that damage could be allowed with a tree permit.

The definition of damage should be broad (e.g., any action that is likely to cause negative impacts to the health or structural integrity of a tree), but prohibitions, while not limiting that definition, can elaborate to include actions that could cause a tree to die or become hazardous such as:

- Pruning in a manner not in accordance with arboricultural best practice, including:
 - removal of more than 25% of the tree's total live foliage or bud bearing branches or limbs in any 12 month period
 - lift pruning where the lower branches of the live crown (green branches) of the tree are removed to reduce the live crown to less than 50 percent of the total tree height
 - topping, unless the tree in question has been previously topped and regenerative growth has a high likelihood of failure due to weak branch attachment, excessive branch elongation and end weight, or the formation of extensive decay or cavities that cannot be mitigated other than by re-topping the tree

- Poisoning or burning a tree
- Raising or lowering the grade within the tree protection zone
- Shearing, harming or undermining the roots of the tree growing within the tree protection zone
- Placing fill, building materials, asphalt, a building or structure or storing or stockpiling of material within a tree protection zone
- Operating, staging or parking trucks, backhoes, excavators, mini-excavators, hydro-excavators, mechanical trenchers or other heavy equipment within a tree protection zone
- Denting, gouging, drilling, harming or affixing anything to the branches or the trunk of a tree
- Removing bark from a tree
- Depositing concrete, washout or other liquid or chemical substances harmful to the health of a tree in a tree protection zone
- Removing soil from a tree protection zone
- Conducting blasting operations within a tree protection zone
- Conducting blasting or excavating operations outside of a protected root zone that would harm roots or disturb soil inside a tree protection zone

Describing tree damaging activities can improve enforcement by defining specific actions that would be considered a bylaw violation unless permitted in the terms of an approved tree permit.

6.3.4 Permitted Removal Reasons

PURPOSE | To define why a permit will or will not be issued to remove a tree. Describing the acceptable reasons for removal enables transparent and consistent decision-making by staff issuing tree permits. These reasons listed determine the strength of the bylaw in terms of protecting trees from removal.

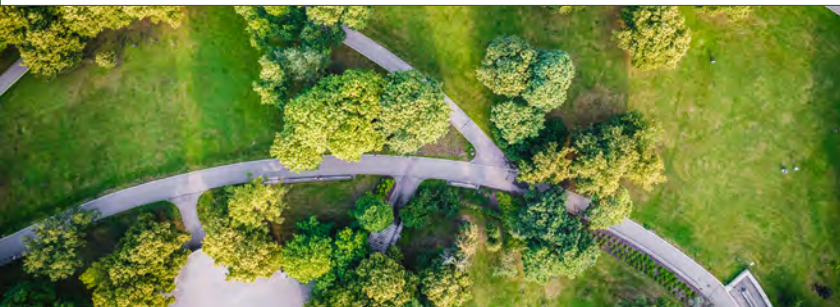
6.3.4.1. Risk, dead and dying trees

PURPOSE | To define why a permit will or will not be issued to remove a tree. Describing the acceptable reasons for removal enables transparent and consistent decision-making by staff issuing tree permits. These reasons listed determine the strength of the bylaw in terms of protecting trees from removal.

MUST HAVE: Dead, dying or high or extreme risk trees

The following reasons for removal must be enabled:

- Tree is high or extreme risk or has an imminent likelihood of failure and the risk or failure cannot be mitigated other than by cutting or removing the tree
- Tree is dead, or more than 50% of its crown is dead (or an alternative threshold that indicates when a tree would be accepted to be dying)



6.3.4.2. Conflict with Buildings or Structures

PURPOSE | To avoid conflicts that would sterilize development rights.

MUST HAVE: Conflict with principal or accessory buildings, off-street parking and utilities

A tree bylaw cannot sterilize development rights by preventing development to permitted use or density according to zoning. However, the extent to which applicants must modify designs or construction to retain trees can be controlled by reasons to permit removal. There are two ways in which communities choose to allow removals to enable permitted use.

- Option 1: **Tree can be removed to accommodate design**
- Option 2: **Design must be changed to accommodate trees if possible**

Option 1: Tree can be removed to accommodate design

Tree removal is permitted whenever protected trees are in conflict with buildings, parking or utilities proposed.

Context

This approach may be most suitable for municipalities with undeveloped/ rural land within the Urban Containment Boundary where heavily treed lots are being subdivided in the wildland urban interface.

Pros

- Enables communities to focus on planting replacement trees in appropriate locations following development
- Reduces the potential impacts on development
- Is less resource intensive to implement than the alternative

Cons

- Will not often require trees to be retained during development

Option 2: Design must be changed to accommodate trees if possible

Tree removal is permitted only if it is not possible to retain the tree. Applicants may be required to make changes to their design to accommodate the retention of protected trees while still building to the current zoning.

Context

This approach may be most suitable for already developed and densifying municipalities and where the community places a high value on the preservation of protected trees. Communities using this approach should provide staff with additional guidance on what trees this would apply to and how to determine when it is not possible to retain the tree. This guidance may include criteria related to tree health and condition or safe useful life expectancy in the new site conditions.

Pros

- More often requires the retention of existing trees

Cons

- Results in greater impacts to development projects to accommodate tree retention
- Is more resource intensive for the municipality (longer applications review and interactions with applicants expected)

Note

Bylaws may distinguish between principal buildings and accessory buildings, off-street parking and utilities to require design changes only for some of those items.



TREE REMOVALS ON AGRICULTURAL LANDS

Municipalities in British Columbia cannot regulate tree removals that take place for farming use. However, some municipalities require affidavits from landowners to attest that the removals are for the purpose of farming. A tree bylaw can still apply to agricultural land when trees are being removed for non-farming uses, such as development.

Given the limitations for municipalities to regulate trees on agricultural land, communities with large proportions of agricultural land may instead consider implementing or promoting incentive and stewardship programs.

ADDITIONAL OPTIONS | Other common reasons to permit tree removals include wildfire risk, invasive species, yearly removal allowances, proximity to building foundations, infrastructure damage, construction access and trees on structures that require upgrades or replacement.

- **Wildfire:** Communities within the wildland-urban interface that manage wildfire risk through a Development Permit Area should ensure that the tree bylaw is consistent with FireSmart requirements, as detailed in their wildfire DPA. To ensure that wildfire risk management measures are appropriate, they should be guided by a Community Wildfire Protection Plan that defines high-risk areas, and a DPA that provides development guidelines for reducing risk in those areas. Measures to reduce risk may include conifer tree removal or pruning and FireSmart landscaping requirements.
- **Invasive species:** Communities may wish to enable the removal of invasive tree species that would otherwise be protected by their tree bylaw. Enabling the removal of invasive tree species may provide more consistency in municipalities that regulate or have policy related to invasive species. It should refer to specific lists or species from credible sources, such as the province of British Columbia or the Invasive Species Council.
- **Construction access:** Communities may consider allowing tree removals for trees located within the required construction access path, if the construction access cannot be modified to retain or avoid cutting the protected tree(s).
- **Proximity to building foundation:** Some communities choose to enable the removal of trees near building foundations. Enabling this can allow for poorly located trees to be removed and replaced by an appropriate species planted in a more suitable location. However, it could also lead to the removal of healthy trees that are not causing issues in some cases.
- **Infrastructure damage:** Some communities choose to enable the removal of trees that are causing or will imminently cause structure or infrastructure damage that cannot be mitigated other than by cutting or removing the protected tree. Implementing this option can allow for trees causing damage to be removed and replaced by an appropriate species planted in a more suitable location. However, staff will need additional

guidance on determining when damage cannot be mitigated and the bylaw should enable the option to require a qualified environmental professional (e.g., professional engineer) or arborist provide an opinion on whether or not the damage can be mitigated other than by cutting or removing the tree.

- **Yearly removal allowance:** Communities sometimes elect to include an annual allowance of trees that can be removed for any reason. If considering such an allowance, it should be limited by factors such as tree density, tree size, zoning, lot size or a combination of them; those limits would prevent progressive clear cutting while providing flexibility to manage numerous trees on forested lots.
- **Trees on structures:** Communities that have trees planted on structures (i.e., above parkades or on roof-tops) may consider enabling the removal of trees for repairs to the structure.

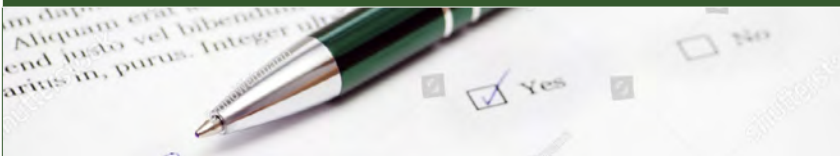


6.3.5 Permit Application Information Requirements

PURPOSE | To enable staff to determine whether a permit application meets the bylaw requirements to issue a tree permit.

MUST HAVES | At a minimum, basic information should be required with every permit application.

BASIC PERMIT INFORMATION REQUIREMENTS



All permit applications must be accompanied by:

- The address and legal description of the lot/s
- Proof that the owner, or an authorized owner's agent, is submitting the application
- Written consent from the adjacent property owner that they support the application, where a tree shared between two properties is proposed for removal
- Reasons why the applicant is applying to cut or remove a protected tree
- A description and map/plan drawing of the protected trees included in the application

RECOMMENDED FOR DEVELOPMENT: Information requirements for all applications related to development*

Tree bylaws should provide clear information requirements, particularly for applications related to development. They should require sufficient and consistent information to enable staff to review permit applications efficiently.

Development-related applications are complex. Accurate information about trees is needed to understand which trees can be safely and effectively retained, and which trees need to be removed. Non-development-related permit applications can also sometimes require more information, for example, when a tree is proposed for removal because of risk and a tree risk assessor's opinion is needed. For these reasons, it is recommended that the bylaw enable staff to request when needed:

- A legal survey identifying the location of existing trees accurately.
- An arborist report and inventory detailing the location and condition of protected trees and trees proposed for removal.
- A risk assessment report from a tree risk assessor confirming that a tree is high risk if the application entails removal or cutting of a high risk tree.
- A tree management plan mapping the location of protected trees, their tree protection zones, recommended protection measures, location of tree protection fencing and trees proposed for removal.
- A replacement tree plan mapping the location and species of replacement trees to be planted. Build in the need to have these reflected in all landscape plans or at least cross referenced in the landscape plans.
- Additional information from qualified environmental professionals when sensitive lands are involved, for example, to assess impacts of removing trees in riparian areas or steep slope areas.
- A tree fencing confirmation letter from an arborist confirming that protective fencing has been installed per an approved tree management plan.
- A letter of assurance from an arborist, signed by the owner, to specify construction activities requiring arborist supervision to prevent and mitigate damage.

Terms of reference for these information requirements can be included in schedules or standard operating procedures.

***Tree bylaws should also enable staff to require or relax some of these additional requirements on an as needed basis.**

Municipalities can ask for a confirmation that a permit application is consistent with provincial and federal laws, for example require a Bird Nesting Survey for tree removals proposed during the nesting season.



6.3.6 Requirements and Incentives for Tree Retention and Replacement

Replacement requirements determine how protected trees are replaced when they are removed. There are numerous approaches to tree replacement. The appropriate choice should be tied to meeting the community's goals for tree preservation and growth.

6.3.6.1. Replacement Requirements – Achieving Successional Replacement

PURPOSE | To achieve successional replacement by defining the number of replacement trees required for every protected tree removed. Ratios are not generally effective for increasing the number of trees and growing tree canopy in low-canopy areas because they only require planting on properties that already have trees.



MUST HAVE: Replacement ratio

A replacement ratio can be consistently applied to require that each tree removed is replaced. This approach would require applicants to replace every protected tree removed with one or more replacement trees.

- Option 1: **1:1 or 2:1 replacement ratio**
- Option 2: **1:many replacement ratios based on diameter of tree removed**

Option 1: 1:1 replacement ratio with large trees (2:1 if small trees)

Context

A municipality might choose 1:1 or 2:1 replacement ratio when:

- Properties have limited space for additional trees and a higher replacement ratio would typically result in over-crowding
- The bylaw incorporates requirements to meet soil volume and spacing standards that will maximize the survival and growth of replacement trees
- The bylaw prioritizes replacement with a large tree species but provides flexibility to replace with smaller trees if the site is constrained
- It is coupled with other approaches to encourage or require canopy growth

Found in: Vancouver, Victoria

Pros

- Encourages large tree species replacement and healthy growing environments
- Enables most properties to replace a tree in the space created by the tree removed
- Does not penalize properties that already have trees by requiring even more trees as replacements when a tree is removed

Cons

- Does not replace tree canopy removed as quickly as a higher replacement ratio.
- Does not increase the number of trees or grow tree canopy in low-canopy areas. It cannot be used to meet canopy cover targets.

Option 2: 1:many replacement ratios based on diameter of tree removed

This approach would require applicants to replace every protected tree removed with multiple replacement trees.

Context

The 1:many replacement ratio would be most appropriate for communities that have lots of space for more tree planting.

Found in: *White Rock (ranges from 2:1 to 6:1), Courtenay (3:1 if below density target), Saanich (2:1 or 3:1 removals for roads/services), Squamish (2:1 to 6:1 for significant trees, up to density target), Abbotsford (2:1 or 3:1), Oakville (1:1 to 1:12 based on size of tree removed)*

Pros

- Enables instant replacement of more of the tree canopy removed

Cons

- To properly compensate for the canopy removed, many more trees may be required than would be practical or reasonable to require as a replacement ratio (Nowak & Aevermann, 2019).
- Urban properties are often unable to fit multiple replacement trees without overcrowding and poor planting location choices, likely leading to more failures and removals in the future.
- Creates an incentive for people to plant small trees or hedges to try and fit replacements on their property, which is at odds with canopy cover goals.
- Penalizes properties that have more trees by requiring them to replace even more trees on their properties, while having few requirements for properties with few or no trees.
- Does not increase the number of trees and grow canopy in low-canopy areas. It cannot be used to meet canopy cover targets.



USING 1:MANY REPLACEMENT RATIOS TO ACHIEVE CANOPY GROWTH

While tree bylaws may attempt to achieve canopy growth through the implementation of higher replacement ratios, this practice is not recommended. When replacement ratios are high, either the trees are disadvantaged by being crowded into inadequate growing space and never reaching healthy maturity, or the applicant is disadvantaged by paying a large sum in cash-in-lieu. Another unintended consequence of high replacement ratios is that they penalize properties with more trees by requiring high replacement or cash-in-lieu and reward properties with few or no trees by imposing few requirements when they re-develop.

6.3.6.2 Replacement Requirements – Achieving Canopy Growth

PURPOSE | To require that every property meets a minimum tree or canopy cover target.

MUST HAVE: Minimum Target

A target can be measured and consistently applied to each property. There are two main approaches to growing tree canopy using tree bylaws in Canada and tree ordinances in the United States:

- Option 1: **Tree density target**
- Option 2: **Canopy cover target**

Option 1: Tree density target

The tree density target approach establishes a target number of trees per unit area that applicants are required to achieve after the tree removal takes place.

Context

A municipality might choose tree density target when:

- The density of trees is targeted towards meeting a canopy cover goal that has been established for the community
- The municipality wants to increase canopy in low canopy locations by requiring properties with few or no trees to meet the density target with development
- The municipality is rural and is allowing some tree removals but wants to limit the extent of removals permitted per property (e.g., under an annual removal allowance)

Found in: *Maple Ridge, Courtenay, Gatineau (QC)*

Pros

- Effectively increases the rate of tree planting across the community, even on properties that have few or no trees
- Evens out the requirements across the community so that all properties have to contribute to meeting the target
- Neutralizes the perception of a penalty for having trees on a property that occurs when tree bylaws only include replacement ratios for tree removed.
- Can establish a relationship between tree density and canopy using tree canopy data

Cons

- Adds another replacement requirement to calculate on top of a ratio
- Must be calculated, which is simple when an arborist report is required with development, but staff may otherwise have to assist applicants when non-development applications allow tree removals down to a minimum tree density

Best implemented with differentiation for meeting the requirements during development versus non-development contexts. If an annual removal allowance is in place, it may be necessary to protect trees that are of particular importance to the community such as species of special interest, significant or specimen trees to prevent their removal under the allowance.

Option 2: Canopy cover target

The canopy cover approach establishes a canopy cover target that applicants must achieve on the lot after the tree removal takes place. The canopy area retained on site is measured and if the canopy target is not met then the shortfall is met by planting replacement trees. A replacement tree list defines a canopy area credit for small/medium/large tree species. Applicants plant the number of replacement trees that add up to the canopy area required to meet the target on site. The canopy cover target approach is used in Oak Bay and in several tree ordinances in the US to calculate replacement requirements.

Context

A municipality might choose a minimum tree canopy cover target when:

- The canopy cover target(s) set in the tree bylaw can work towards meeting a canopy cover goal that has been established for the community
- The municipality wants to increase canopy in low canopy locations by requiring properties with few or no trees to meet the canopy target with development
- The municipality is rural and is allowing some tree removals but wants to limit the extent of removals permitted per property (e.g., under an annual removal allowance)
- The community has many existing large canopy trees that overhang properties and wants provide incentives to protect and maintain offsite trees

Found in: Oak Bay, Anmore, various US municipalities (e.g., Baltimore MD, Lake Forest Park WA, Fort Worth TX)

Pros

- Effectively increases the rate of tree planting across the community, even on properties that have few or no trees
- Evens out the requirements across the community so that all properties have to contribute to meeting the target
- Neutralizes the perception of a penalty for having trees on a property that occurs when tree bylaws only include replacement ratios for tree removed.
- Relates directly to meeting canopy cover goals
- Reduces properties replacement requirements when canopy overhangs their property, which provides incentives to retain and protect offsite trees during development

Cons

- Adds another replacement requirement on top of a ratio
- Must be calculated and is more complex to calculate than tree density
- Must assume a relationship between species and typical canopy outcomes to simplify calculations for replacement requirements, so that replacement species can be credited for a certain amount of tree canopy at maturity

Best implemented with differentiation for meeting the requirements during development versus non-development contexts. If an annual removal allowance is in place, it may be necessary to protect trees that are of particular importance to the community such as species of special interest, significant specimen trees to prevent their removal under the allowance.

In practice

The City of Courtenay implements a tree density target of 50 trees per net developable hectare. This means most single-family properties require 3-4 trees.

In practice

The District of Oak Bay uses a canopy cover target approach when the owner of a parcel applies for a building permit. The canopy target varies by zone and ranges from 50% for Community Institutional Zoning to 20% for Multi Unit Residential.



In practice

In Nanaimo, cash-in-lieu is capped at a maximum per hectare value.

6.3.6.3 Cash-in-lieu

PURPOSE | To fund tree planting elsewhere on public or private property.

MUST HAVE: Cash-in-lieu

A dollar amount that applies consistently and is adequate to cover the cost of planting and establishing trees.

Cash-in-lieu enables municipalities to collect funding to plant replacement trees. To be effective, cash-in-lieu should cover the cost of replacing the trees.

Context

A municipality might choose to have a cash-in-lieu option when:

- Properties have limited space for replacement trees
- Infill development or higher site coverage development is limiting opportunities for tree planting on site post development
- If coupled with a minimum tree density or canopy target, it is used as a means of every property contributing to a canopy cover goal either by planting tree on site or by funding planting elsewhere

Commonly Found in: *Bylaws that implement replacement requirements, for example in White Rock, Surrey, Vancouver, Township of Langley, Nanaimo, Oakville (ON)*

Pros

- Funds tree planting or enhancement towards growing canopy cover in the municipality
- Can fund stewardship efforts to encourage private land planting and tree maintenance

Cons

- Can become very costly if a 1:many replacement ratio is in place and effectively penalize properties with more existing trees
- If set too low, or enabled as a choice, then people may opt for cash-in-lieu instead of replacing trees

ADDITIONAL OPTIONS | Municipalities may wish to consider the additional options for managing replacement requirements that are species- or location-based, for dead or high or extreme risk trees, or credits to reduce the requirements.

Species based replacement*

A municipality might choose to add species-specific replacement requirements to:

- Require specific species of trees for the replacements of species of interest or native species in sensitive areas (e.g., like for like replacement)
- Reduce replacement requirements for fast growing species that tend to volunteer (e.g., alder or cottonwood) when a 1:Many ratio applies otherwise

*Future species suitability as a result of climate change should be considered when setting species-specific replacement requirements.

Location based replacement

A municipality might choose to define location based replacement requirements to:

- Require specific species of trees or replacement ratios for sensitive lands
- Require different replacement requirements for municipal trees

Exclusion of dead or high or extreme risk trees

- A municipality might choose to exclude dead or high or extreme risk trees to avoid discouraging owners from applying for a removal permit

Incentives for tree retention

A municipality might choose to reduce an applicant’s replacement requirements if they retain certain trees on site (e.g., large, healthy trees). Credits can function as an incentive for tree retention when they meaningfully reduce the number of additional trees that must be planted on site. Some bylaws allow non-protected trees to be counted as replacement trees.

Other incentives such as a reduction in permit fees could help incentivize tree retention, or a reduction in securities could help incentivize redesign or implementing protection measures around retained trees.

In practice

The City of New Westminister reduces the retained tree securities by 50% for applicants that agree to modify a design to retain protected trees.



STEWARDSHIP AND INCENTIVES

In addition to or as an alternative to replacement tree planting for successional replacement or canopy growth, communities should consider stewardship and incentive programs to encourage tree planting and stewardship on private land.

- **Subsidised tree sales:** many municipalities in the region hold subsidised tree sales for their residents to encourage tree planting.
- **Adopt-a-tree programs:** some municipalities implement programs where residents are invited to water new street trees.
- **Citizen science programs:** such programs can support data collection for urban forest management. For example, the City of Melbourne's Citizen Forester Program recruits volunteer community members to help collect data on many urban forest components. The City has also led a genetic sampling program to learn about the genetic diversity of elm populations in the city, collect observations on pollinator species or carry out habitat planting.
- **Stormwater utility:** The City of Victoria charges a stormwater utility to property owners that offers incentives for properties that manage a stormwater more sustainably. The utility's rainwater rewards program credits on-site rainwater management installations that enable rainwater storage or infiltration.

6.3.7 Replacement Tree Planting Standards

Planting standards serve to guide applicants in the planting of replacement trees to maximize the establishment success of those trees.

6.3.7.1 Species list

PURPOSE | A species list can be used to encourage climate and site appropriate species choices.

RECOMMENDED: Species List

Species lists should:

- Be a list of approved species that is a schedule of the bylaw, or a list published online, but that allows flexibility for updates and for professionals to submit an alternative for approval
- Be large enough to support meeting diversity targets for urban tree species
- Include proven species (native and non-native) that are suitable for current and future climate

6.3.7.2 Spacing and soil volume

PURPOSE | Prescribing minimum spacing and soil volume requirements will ensure that trees have adequate space to grow.

RECOMMENDED: Spacing and soil volume

Requirements should include:

- Replacement trees should be planted at least 2 m away from a building foundation wall (or more for larger tree species), at least 1 m away from any property line of a lot, above and at least 1 m away from an underground utility, driveway or other paved surface, and in an approved location
- Minimum spacing from existing trees and other replacement trees should be set at 2 m for small trees, 4 m for medium trees and 6 m for large trees
- Soil volume required for replacement trees should be estimated based on canopy size at maturity

BEST PRACTICE TO CALCULATE SOIL VOLUME

TREE SIZE	Min soil volume (m ³) ⁴	Shared or irrigated soil volume (m ³)
Small tree canopy spread is up to 6 m	8	6
Medium tree canopy - spread is up to 10.0 m	20	15
Large tree canopy - spread is greater than 10.0 m	35	30

Credit soil volume according to actual content of soil:

- Soil: Volume of soil (Length x Width x Depth)
- Soil cells: Volume of soil cell installation (Length x Width x Depth) x 0.92
- Structural soil: Volume of structural soil (Length x Width x Depth) x 0.2

⁴0.3 m³ minimum soil per 1 m² of crown projection based on Lindsey and Bassuk (1990).





6.3.7.3 Stock and planting standards

PURPOSE | Stock and planting standards are meant to maximize the chance of survival of replacement trees to maturity.

RECOMMENDED: Stock and planting standards

Requirements should include:

- Replacement trees must meet requirements set out in the latest edition the Canadian Nursery Trades Association “Canadian Standards for Nursery Stock”
- Define the size of planting stock that is acceptable (often 6 cm caliper for deciduous and 2 m height for conifer) but may be smaller for non-development tree permit applicants
- Define the acceptable timing of planting based on local planting season

6.3.8 Actions on Site

Actions on site are steps that applicants must take as a condition of a tree permit.

6.3.8.1 Tree protection measures

PURPOSE | To prevent damage when a tree permit is being issued with a development related permit where trees being retained.

RECOMMENDED: Fencing measures

Fencing requirements should include:

- A standard tree protecting fencing detail as a schedule in the bylaw.
- Signage indicating that the fencing is for tree protection. Signage could include contact information for the project arborist and a dollar value associated with the tree to indicate the cost of damage.
- Fencing should remain in place for the duration of the construction work.
- Removing fencing should be a violation of the bylaw except when part of an activity approved by the tree permit and under the supervision of an arborist.

RECOMMENDED: Supervision measures

If activities are occurring close to trees such that fencing needs to be removed or absent, then arborist supervision of the activities is an alternative method to prevent or minimize damage. Supervision requirements should include:

- A letter of assurance from the owner and arborist to define activities that will be supervised by an arborist, and supervision should be documented
- Documented supervision by the arborist of any planned works within the tree protection zone, pre-construction tree pruning, post-construction assessment or any other activities defined as requiring supervision

RECOMMENDED: Alternative measures

When tree protection fencing cannot be installed or maintained at the recommended distance, alternative tree protection measures (Fite and Smiley, 2016) may include:

- Mulching (15-30 cm)
- Laying minimum ¾ inch (2 cm) plywood, beams, commercial logging or road mats, on ground or over a 10 cm layer of mulch (on fabric to enable easier removal)
- Applying 10 – 15 cm of gravel over a taut, staked, geotextile fabric
- Protecting the trunk with wood planks on a closed-cell foam pad bound with straps or wire (no fasteners into the tree)
- Irrigation
- Any other measures defined to protect trees on site

6.3.8.2 Notification and marking

PURPOSE | Posting a notice of impending tree removals and marking trees to be removed lets the public know that an approved tree removal is taking place.

RECOMMENDED: Notification and marking

Requirements should include:

- A notice to post, similar other permits types (e.g., building permits), provided with the approved permit
- Trees to be removed be marked with flagging tape or survey paint

6.3.9 Securities

Securities are used as refundable deposits to guarantee that an applicant will follow through with actions required by a tree permit.

6.3.9.1 Securities for tree retention

PURPOSE | To guarantee that an applicant will follow through with tree protection measures that are conditions of the tree permit related to a development application.

RECOMMENDED: Tree retention securities

Securities must be determined using a method that can consistently calculate the security amount and be of a sufficient amount to deter bylaw infractions while still being affordable in the context of the project being undertaken.

It is recommended that securities:

- Be a set value for trees or categories of trees (e.g., value by diameter class)
- Be capped at a maximum value to avoid securities being unaffordable
- Incorporate flexibility to waive the security for on site trees that are not at risk of damage
- If applied to municipal trees, incorporate flexibility to be valued according to the Council of Tree and Landscape Appraisal Formula in addition to the cost of removal and planting
- Be returned upon final completion and confirmation by an arborist that the tree was protected as required in the permit, and supported by documentation of arborist supervision of any activities described in a letter of assurance
- Be transferred to a dedicated reserve fund for tree planting if forfeited, as opposed to general revenues

Context

Any community requiring tree protection measures may benefit from retention securities. However, municipalities will require sufficient staffing to manage securities.

Found in: Surrey, New Westminster, White Rock, Courtenay (at Director's discretion)

Pros

- Functions to guarantee the applicant and arborist follow through on protection and supervision measures for retained trees
- Requires evidence of compliance from the project arborist to reduce staff enforcement
- Provides another compliance tool in addition to penalties

Cons

- Increases the administration requirements of tree bylaws, with securities having to be calculated, held and then returned pending approval of documentation provided
- Requires applicants to provide cash or a letter of credit for the duration of the project

Variation

- **Amenity value-based** replacement securities, where trees are valued according to the Council of Tree and Landscape Appraisal Formula
- **Applicant/application type-based** tree retention securities typically require large sums to be held for larger development contexts in order to encourage compliance while avoiding burdening applicants for smaller works permits

Securities are best implemented with a requirement for arborist supervision and letters of assurance that can provide staff with evidence that work was carried out according to the requirements.



In practice

New Westminster's retained tree securities vary by size; the security for a protected tree is \$2500 and greatly increases for a retained specimen tree, which is set at \$10,000.

6.3.9.2 Securities for tree replacement

PURPOSE | To guarantee that an applicant plants and maintains replacement trees that are conditions of the tree permit.

In practice

In Mississauga, a tree replacement security deposit is determined on a case-by-case basis by the City.



RECOMMENDED: Replacement securities

Securities must be determined using a method that can consistently calculate the security amount and be of sufficient value to incentivize the planting of replacement trees.

It is recommended that securities:

- Be set at an amount that covers the cost of replacing a tree and maintaining it to establishment
- If cash-in-lieu is enabled, be set at an equivalent value for applications related to development
- Despite the previous points, if there is a 1:many replacement ratio or the cash-in-lieu amount is high, replacement securities can be modified to a type of applicant or application to avoid burdening non-development applicants
- Be returned once a tree has been planted and has survived for a set period of time

Context

Any community requiring tree protection measures may benefit from retention securities. However, municipalities will require sufficient staffing to administer securities.

Found in: Delta, Surrey, Vancouver, Abbotsford, Victoria, Mississauga (ON)

Pros

- Incentivizes the applicant to follow through with planting and maintaining replacement trees
- Provides another compliance tool in addition to penalties

Cons

- Increases the administration requirements of tree bylaws, with money having to be calculated, held and then returned pending approval of documentation provided
- May require an additional inspection point at the end of the security period

Cash-in-lieu and replacement securities should be equivalent amounts to simplify enforcement by enabling the municipality to retain securities without having to fine applicants to recover the balance amount for cash-in-lieu.



COMPLIANCE WITH REPLACEMENT TREE PLANTING

A recent report from the University of Toronto (Conway, Khatib, Tetreault, & Almas, 2021) reviewed the level of compliance for replacement tree planting requirements in the City of Toronto. A survey sent to homeowners who received a tree removal permit found that 70% of respondents had complied with their permit's replacement tree planting requirement. The researchers conducted site visits and found a very high short-term survival rate for trees planted. The highest survival rate was for trees planted by professionals. The species planted were not all adequate for the local climate and were occasionally misreported to the City. Researchers concluded that an inspection would increase compliance and improve documentation on the replacement trees planted. They also suggested that species guidance and professional tree planting would improve the replacement planting outcomes. Authors also noted the importance of tracking and record keeping systems at the municipal level to enable adequate follow-up and the promotion of compliance.

ADDITIONAL OPTIONS | In order to ensure that replacement plantings take place, municipalities may wish to consider additional options to encourage tree replacement:

1. Enforcement is used as an alternative to securities in some municipalities such as Richmond in order to ensure that replacement planting is carried out as intended. To be as effective as securities, enforcement requires sufficient resources to carry out proactive inspections.
2. Stewardship measures can be used to encourage the planting of replacement trees, such as the municipality providing a free or low-cost replacement tree. Stewardship measures are usually perceived in a more positive light by the public and make replacement tree planting more accessible to applicants with lower incomes. However, such measures come at a cost to the municipality and should be supported by adequate budgets.

Note: bylaw fees, cash-in-lieu or transferred securities collected in a reserve fund could be set up to support residents with tree care and planting on private land.

6.3.10 Penalties

PURPOSE | Penalties seek to deter bylaw infractions and require remedial measures.

MUST HAVES: Long form prosecution

Tree bylaws should enable municipalities to make use of the Offence Act and fines to penalize bylaw infractions.

Municipalities can enforce their tree bylaws with the long form information process under the provincial Offence Act. The Act provides municipalities with the ability to enforce penalties up to \$50,000 if they do not have established penalties (as described under municipal ticketing) or for enforcing major bylaw contraventions.

MUST HAVES: Municipal ticketing

Municipalities can set up fines for tree bylaw infractions for specific minor to medium contraventions. **The Municipal Ticket Information system** enables municipalities to enforce and prosecute contraventions to tree bylaws through infractions listed in a Municipal Ticketing Bylaw. Penalties cannot exceed \$1,000 but multiple fines can be issued for damaging a single tree if multiple infractions apply.. Tickets that are disputed go to provincial court.

The Bylaw Notice Adjudication System enables municipalities to establish an administrative system as an alternative to the provincial court for resolving minor local government bylaw contraventions. Local governments may join together to administer a bylaw notice system jointly to cover a broader geographic area more cost-effectively. Penalties cannot exceed \$500.

ADDITIONAL OPTIONS | In addition to enabling the use of available enforcement mechanisms, municipalities may wish to consider additional measures to provide themselves with further options to enforce their tree bylaw, including stop work orders, securities transfer and replacement tree requirements.

Stop work orders

Municipalities can use stop work orders to interrupt work that is causing damage to retained trees until remediation measures are taken. This measure should only be used in situations where irremediable damage is being caused, where it may offer an effective solution to stop such damage when it is occurring.

Securities transfer

Municipalities could consider including provisions within their tree bylaws to automatically transfer unclaimed securities to their reserve funds after a set period of time. Including such a provision may offer more clarity and transparency to staff and applicants as to the expected process and timeline to comply to permit conditions before securities are transferred.

Requiring replacement trees

Some municipalities require people found to be in violation of the bylaw to plant replacement trees as a means of enforcement. This approach may be helpful in cases where applicants removed trees without knowledge or understanding of the tree bylaw requirements. It may however prove challenging to enforce in cases where applicants were purposefully trying to evade the bylaw and are not interested in planting trees on their properties. In such cases, fines may be a better way to recover funds to plant elsewhere in the municipality.



6.3.11 Tree Bylaw implementation

Practitioners surveyed for this project in the fall of 2020 highlighted the importance of the implementation process for creating an effective regulatory environment that balance canopy preservation and growth with competing priorities. Findings of the literature review further emphasize the importance of several factors beyond the bylaw content that will significantly impact urban forest outcomes.

Bernhardt and Nichols propose seven implementation criteria for effective tree ordinances (Bernhardt & Swiecki, 2001; Nichols, 2007). These criteria are discussed in detail in the literature review and align closely to many of the comments compiled in the practitioner survey. The criteria include:

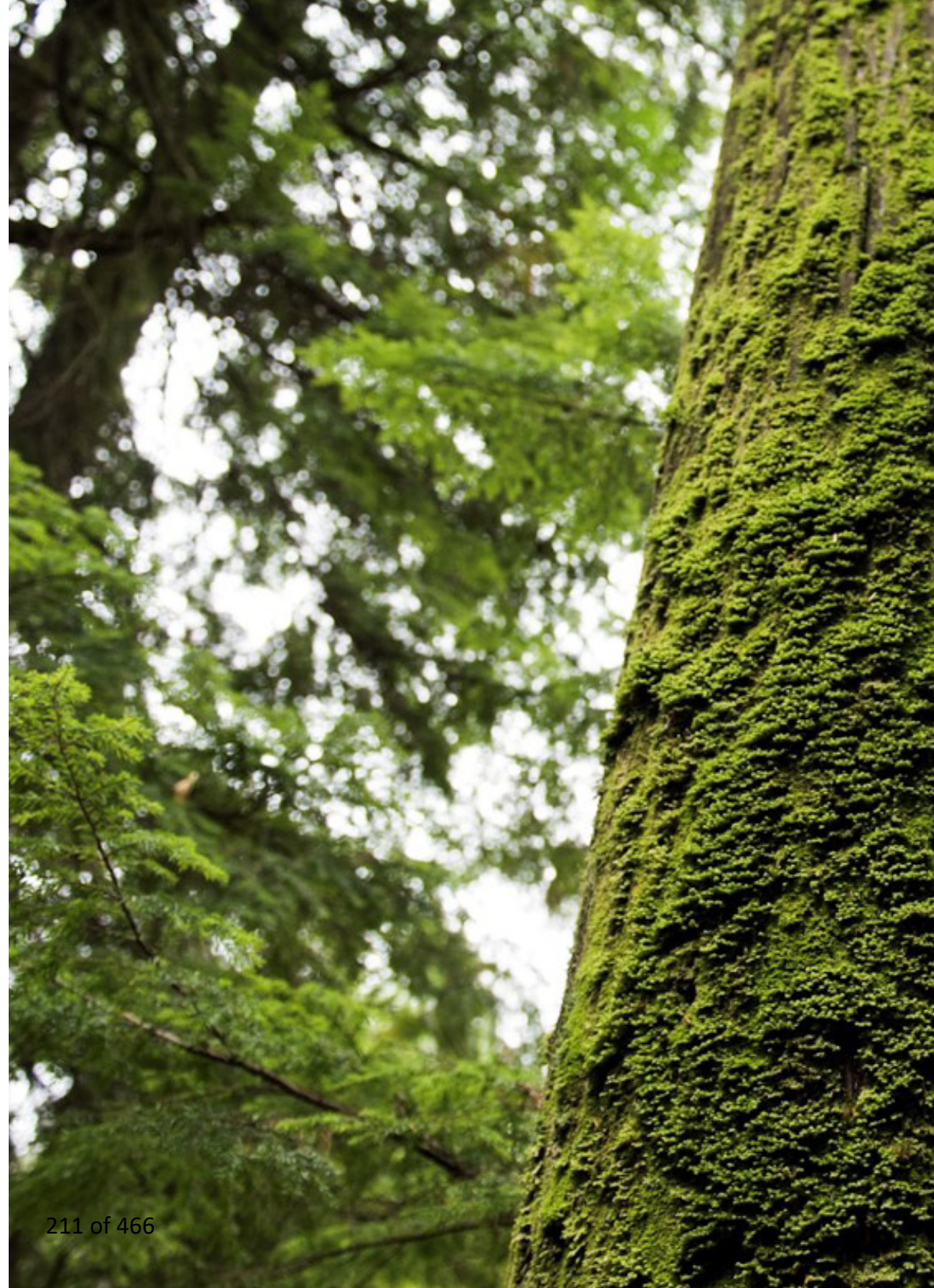
- **Clearly stated goals:** Describe the capacity of the bylaw to achieve certain goals with clear connection to any wider management strategies. Goals are essential to interpret the bylaw and evaluate its effectiveness.
- **Designated responsibility:** Assign authority of a single person responsible for bylaw implementation.
- **Basic performance standards:** Designate best management practices and standards to guide the bylaw whenever possible.
- **Flexibility:** Allow for site-specific decisions to be made by arborists and qualified environmental professionals on a case-by-case basis when appropriate. An appeal process is recommended to ensure decision-making is based on the technical merit of applications.
- **Enforcement:** Employ a variety of penalties consistently.
- **Comprehensive management strategy:** Develop a comprehensive management strategy alongside the bylaw to align goals and integrate them throughout community resources.
- **Developed with community support:** Align with community values and priorities that citizens are willing to comply with, and support.



7.0 Conclusion

The benefits of trees are widely recognised and valued by communities across Metro Vancouver and around the world, particularly in the context of climate change adaptation. Local governments are showing an increasing interest in developing or improving regulations to preserve trees and grow tree canopy. Yet, a limited number of resources exist to inform the design and implementation of regulatory tools for this purpose.

The *Metro Vancouver Tree Regulations Toolkit* provides readers with practical information about how they can develop comprehensive policy and regulations to preserve trees and grow tree canopy within British Columbia's current legislative framework. It is intended to offer information about the options available and important components to consider for each regulatory tool to allow readers to make decisions about the most appropriate options for their local context. This document will need to be periodically reviewed and updated as legislation and best practices in the region evolve.





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Appendix 1. Practitioner Survey Results (2020)

Detailed Results – Practitioners Surveys

Observations about municipalities in Metro Vancouver

Canopy loss: In Figure 1, staff indicated that:

- Most tree canopy loss in their community was due to:
 - Single-family/townhome subdivision development into greenfield (80% said moderate to high loss)
 - Higher density/commercial development into green field or already developed areas (40 to 50% said moderate to high loss)
 - Single-family/duplex/triplex infill into already developed urban areas (40% said moderate to high loss)
- Least tree canopy loss in their communities was due to:
 - Minor development (90% said low loss)
 - Municipal development and capital infrastructure upgrades (90% said low or not applicable)
 - Dying or high-risk trees needing to be removed (80% said low)
 - Industrial development (80% said low or not applicable)
 - Homeowners cutting trees for perceived nuisance (65% said low)

In addition to the causes for canopy loss listed in the survey, staff mentioned off-site infrastructure upgrades for development, climate change, wildfire and forest management, climate change impacts and tree management on other jurisdictions (e.g. School Districts) as causes of canopy loss.

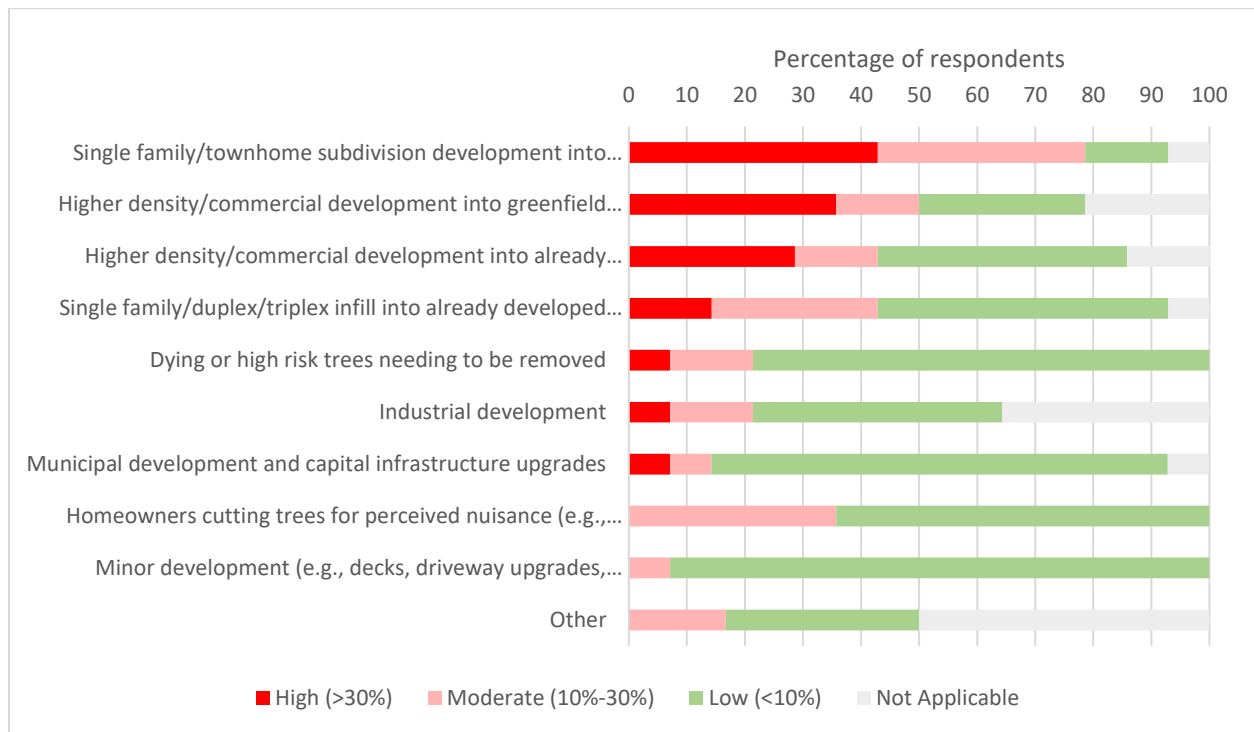


Figure 1. Municipal staff's perceived reasons for canopy loss in their jurisdiction (from survey responses).

Effectiveness of regulations: Municipal staff respondents identified Environmental Development Permit Areas (Environmental DPA), Public and Private tree bylaws as the most effective regulatory tools currently in their municipality (see Figure 2). Zoning and Subdivision and Servicing Bylaws were seen as least effective. Reasons cited included a lack of language to support urban forest objectives and landscaping and street tree requirements, and the inadequate regulation on the amount of impervious cover or building envelope size permitted. These reasons cited suggest that opportunities exist to improve those regulations for canopy preservation or growth. Staff also pointed to a lack of staffing and resourcing to implement regulations and ensure compliance and enforcement and fluctuating political will to implement regulations to their full extent.

In addition to the tools listed in the survey, staff highlighted the Watercourse Protection and Steep Slope Protection Development Permit Areas and guidelines as being effective for tree canopy regulation. Staff also commented on additional tools to sustain or grow canopy cover, including a donor tree program, carbon sequestration and biodiversity initiatives for public tree planting and Urban Forest Management Plans.



Figure 2. Current effectiveness of regulatory tools to preserve or grow canopy in municipal staff’s jurisdictions (from survey responses).

Effectiveness of regulatory tools to achieve specific outcomes: Municipal staff and consulting arborists were asked to comment on the effectiveness of regulatory tools at achieving specific urban forest preservation and growth outcomes (see Figure 3 and Figure 4). Both municipal and consulting arborist survey respondents thought that the regulatory tools were effective for achieving tree protection during construction and retention of existing trees where reasonably possible. Both sets of respondents were also consistent in the finding that regulatory tools did not achieve protection and reuse of native soil, increased tree canopy in locations that previously had little canopy, or protection of permeable areas or future planting sites. Consulting arborists were more critical than municipal staff respondents on the effectiveness of those tools to achieve the selection of climate suitable species for the site and replacement planting of medium to large canopy trees. In general, the results indicated there was room for improvement in the region’s regulations to achieve most of the outcomes listed.

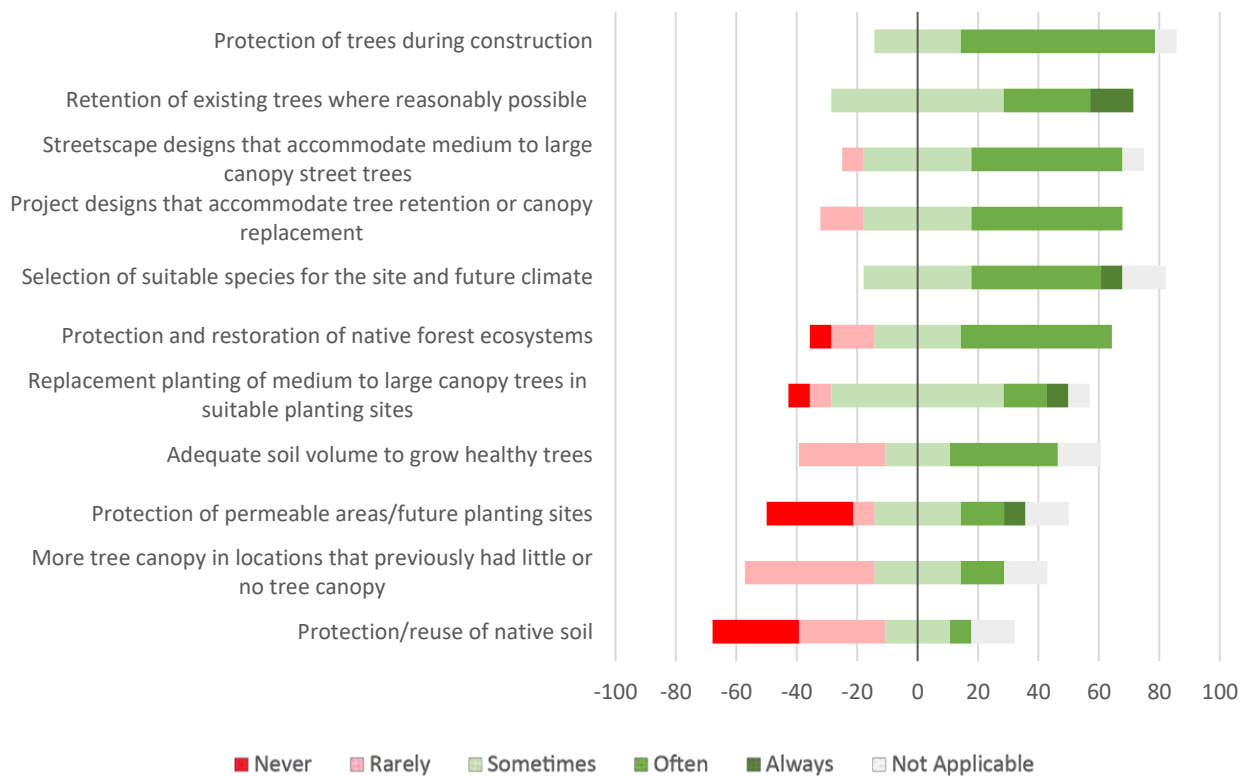


Figure 3. Effectiveness of regulatory tools to achieve specific outcomes according to municipal staff (from survey responses) (above).

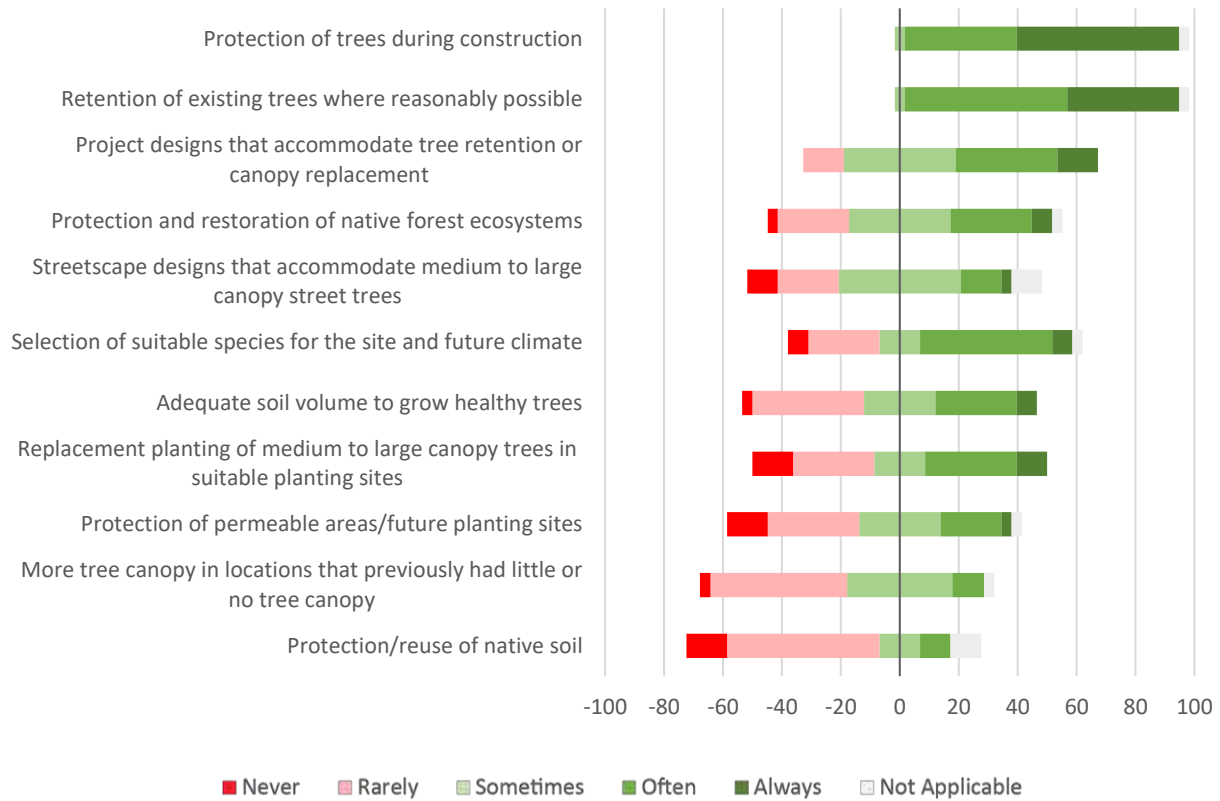


Figure 4. Effectiveness of regulatory tools to achieve specific outcomes according to consulting arborists (from survey responses) (above)

Most important objectives for introducing regulations: Municipal staff respondents clearly consider maximizing tree retention to be the most important objective guiding the introduction of regulations in their municipality, followed by increase new tree canopy in low canopy areas and maximizing canopy replacement (see Figure 5). The administrative metrics listed were not ranked as high. However, minimizing staffing required to administer the bylaw and costs to permit applicants were considered significant to a few municipalities, particularly those of a smaller size. It is worth noting that while increasing canopy cover in low canopy neighbourhoods ranked high in the priorities of municipal staff, many of them also noted that their current regulations rarely achieve that outcome currently.

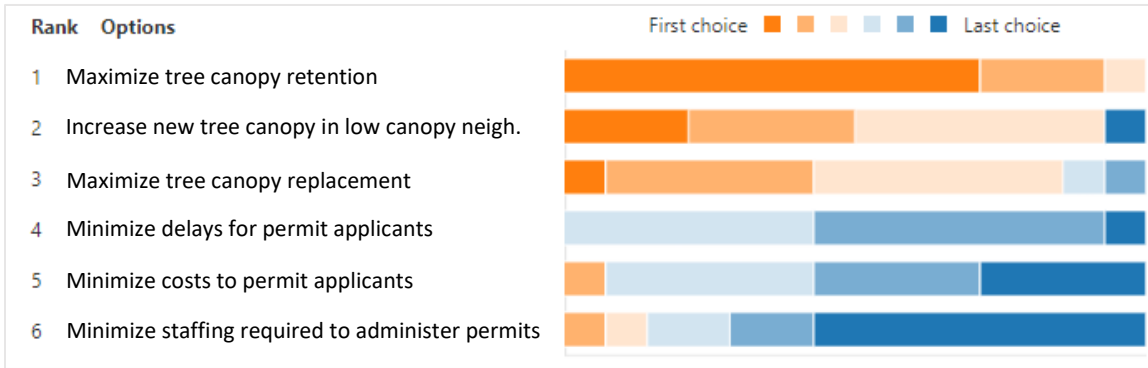


Figure 5. Objectives ranked from most to least important when introducing regulations in their jurisdiction, according to municipal staff (from survey responses).

Staff noted the following objectives as additional to the ones listed in the survey:

- Increase staffing for tree care on public land
- Protect available space for retention or replacement on urban infill lots (including rooftops/decks on high-rises) and off-site locations (neighbourhood shared spaces areas, community open spaces/facilities)
- Fiscal incentive for agricultural land tree planting + retention where land isn’t used for farming
- Climate change resiliency targets (site, neighbourhood and municipal level)
- Access to green spaces (community health)
- Urban forest health & diversity (vs. simply coverage)
- Room to mature for replacement trees
- Wildfire management
- Public safety
- OCP/neighbourhood plans/parks plans

Finally, municipal staff highlighted the challenges of competing priorities (utilities, TOD, active transportation, parking), an interest in learning about tree retention and re-planting initiatives in the Pacific Northwest including carbon credit programs to support re-planting, and the fact that administrative procedure metrics are far less critical than sound canopy objectives and decision-making for canopy cover outcomes.

Perceptions on bylaw best practices

Zoning: Municipal staff highlighted maximum lot coverage and maximum impervious cover in the Zoning Bylaw as having the most potential to sustain or grow canopy cover (see Figure 6). Environmental setbacks and landscaping were also considered by staff from more urbanized municipalities to have a large impact, while smaller and more suburban communities found setbacks to be less impactful. This perception may partially be explained by there often being larger green spaces in the smaller communities that are found adjacent to Provincial land whereas in the denser and more developed communities, the environmental setbacks, outside of the major parks, are often the largest green spaces outside of major parks. Less urbanized municipalities that are seeing increased development pressures may need to consider the protection of large setbacks of a sufficient size to either preserve tree stands of value or future planting sites.

Additional zoning components of importance highlighted by respondents included buildings (accessory buildings and infill housing), utilities and stormwater management, other constructions (pools, patios, retaining walls) and re-grading. Respondents also mentioned the importance of tree canopy and vegetation cover treatment options, landscaping guidelines and greening guidelines on structure for higher density/larger footprint developments.

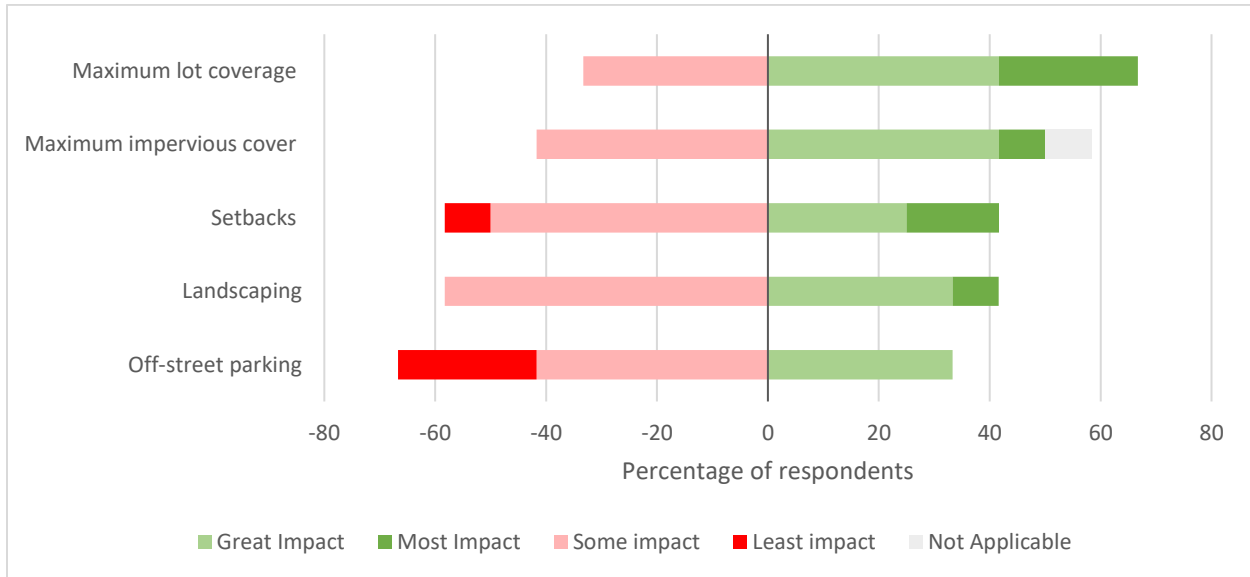


Figure 6. Impact of zoning bylaw components on canopy cover preservation or growth according to municipal staff (from survey responses).

Development Permit Areas: With regards to Development Permit Areas (DPAs), municipal respondents felt that the protection of the natural environment has a significant impact on sustaining and growing canopy, while most staff didn’t find hazardous conditions DPAs to have a great impact. Other DPAs mentioned included Waterfront, Watercourses, Slopes, Form and Character and Energy.

Subdivision and Servicing Bylaw: Staff highlighted soil volume requirements as the most impactful component of this bylaw for sustaining and growing canopy. Boulevard width and tree spacing and setbacks were also found to have some or a great impact on canopy.

Respondents listed the following additional components as impactful for sustaining or growing canopy: servicing and trenching, private tree plantings (at the front and rear of buildings), street tree requirements and standards for planting and maintenance, and bio-filtration requirements that account for canopy cover. A few respondents pointed out implementation challenges with getting the requested soil volumes or the lack of involvement of urban forestry staff in the development process.

Tree bylaw: Replacement requirements and tree protection standards were found to be the components with the most impact to the greatest number of municipal staff respondents (see Figure 7). All respondents thought that securities had a great impact on sustaining and growing canopy cover. There was less agreement on the impact of components such as the permitted removal reasons and penalties.

Although information requirements were ranked as having less impact on sustaining or growing canopy, standardized arborist reports were noted as a component with a significant impact in the comments. Additional items related to securities and replacement requirements. Forest edge effects (trees blowing over) and wildfire management concerns were also highlighted in municipalities with large urban-wildland interfaces.

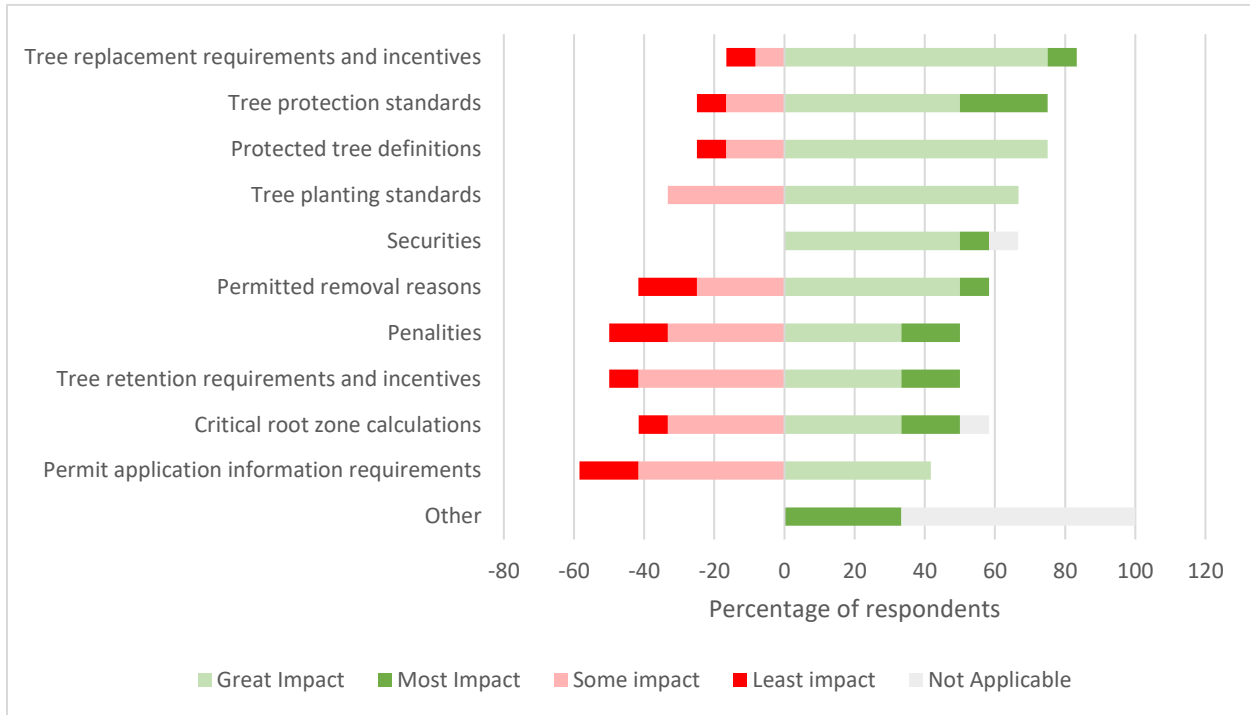


Figure 7. Impact of tree bylaw components on preserving or growing canopy cover according to municipal staff (from survey responses).

Appendix 2. Literature Review

Table of Contents

1.0	Introduction	1
2.0	The Role of Urban Forest Governance	2
3.0	Guidance for Effective Tree Regulation	4
3.1	Defining Goals for Tree Regulation	5
3.2	Designated responsibility	6
3.3	Performance standards	7
3.4	Flexibility	8
3.5	Enforcement	9
3.6	Integration into a Comprehensive Strategy and Urban Forest Program	9
3.7	Community Support	10
3.8	Methods of Assessing Performance	12
4.0	Incorporating Urban Tree Canopy into Land Use Regulation	13
4.1	Regional and Community Plans	13
4.2	Zoning to Preserve and Grow Urban Tree Canopy	14
4.3	Planning for values and hazards in urban and peri-urban forest stands	16
5.0	Private Tree Protection in Canada and the US	17
5.1	Private Tree Protection in Canada	17
	British Columbia	17
	Ontario	18
	Quebec	18
	Prince Edward Island	18
5.2	Private Tree Protection in the United States	19
	Florida	20
	Massachusetts	21
	California	21
6.0	Tools Available to Municipalities in British Columbia	23
6.1	Acts	23
6.2	Regional Level Tools	23
6.3	Municipal Tools	23
6.4	Bylaws	24

6.5	Urban Forestry Specific Tools	25
7.0	Conceptual Model for Comprehensive Canopy Regulation for Municipalities in British Columbia	25
8.0	Conclusion	28
9.0	Citations	29

List of Figures

Figure 1. Participatory planning process from Kangas et al. 2014	11
Figure 2. Method of Evaluation of proposed oak tree impact, City of Thousand Oaks.....	22
Figure 3. Key regulatory tools in BC that can be used to protect or grow urban forest canopy types	26

1.0 Introduction

Many jurisdictions in Canada and elsewhere use laws or policy, including comprehensive plans, zoning, tree bylaws/ordinances, and subdivision regulations, to influence urban tree canopy on private land. **Tree bylaws, ordinances or policies** are often used by municipalities to directly regulate or guide the protection, removal, and replacement of trees in urban and peri-urban forests. **Land use bylaws and planning overlays** (land use regulations) also influence urban tree canopy by controlling how and where land development can occur, what permeable space will remain to plant trees, specifying landscaping outcomes, and prioritizing the protection of or requiring restoration of environmentally sensitive or significant areas. Typically, **land use regulations**, and an owner's right to develop their property according to those regulations, **will override tree regulations**, therefore, **tree regulations and land use regulations need to be aligned to achieve a municipality's urban tree canopy goals**.

Approaches to regulating tree protection vary significantly between jurisdictions even within the same region. This literature review draws on scientific research and practitioner guides to explore best practices for regulating urban tree canopy and ultimately to inform a conceptual model for comprehensive canopy regulation that could be used in the context of British Columbia. Specifically, this literature review will explore:

- The role of urban forest governance
- Methods to incorporate tree canopy into land use regulations
- Guidance for effective tree regulation and the key elements that need to be in place, and pitfalls to avoid, to effectively regulate urban tree canopy
- Approaches to private tree protection in Canada and the United States
- The tools available to municipalities in British Columbia to regulate urban tree canopy
- A conceptual model for comprehensive canopy regulation in British Columbia

Tree and land use regulations are referred to using different terminology depending on the country. There are multiple words used throughout the literature review in reference to tree governance that are important to define. Generally, **bylaw** (also spelled by-law) is used in a Canadian context and **ordinance** is used in the United States. General definitions for key terms include:

- **Bylaw** – Laws passed by municipal councils and regional district boards to exercise their statutory authority. Bylaws may be used for a variety of different purposes, including establishing meeting procedures, regulating services, prohibiting an activity, or requiring certain actions (The Government of British Columbia, 2020).
- **Ordinance** – Law enacted by a municipal body, such as a city council or county commission. Ordinances govern matters not already covered by state or federal laws such as zoning, safety and building regulations (Lectric Law Library's Lexicon, 2020).
- **Policy** – Law, regulation, procedure, administrative action, incentive, or voluntary practice of governments and other institutions (Centers for Disease Control and Prevention, 2020).

- **Regulation** – An official rule. In the Government, certain administrative agencies have a narrow authority to control conduct, within their areas of responsibility. These agencies have been delegated legislative power to create and apply the rules, or “regulations” (Cornell Law School, 2020).
- **Standard** – Written limit, definition or rule that is approved and monitored by an agency as the minimum benchmark acceptable (Black's Law Dictionary Free Online Legal Dictionary 2nd Ed., 2020).

2.0 The Role of Urban Forest Governance

Urban forest governance refers to the processes, interactions, organizations, and decisions that lead to the establishment and maintenance of the urban forest. It is important to acknowledge, even though a local government may have the authority to regulate trees, that not every municipality may choose to exercise that power. In a study of urban forest governance in Australian cities, Ordonez (2019) found that central and inner urban centres face different challenges and prioritize issues differently than outer and regional centres. FitzGibbon and Summers (2002) state that tree regulations tend to be stronger in more populated areas in the US and Canada. In other words, tree regulations strengthen as communities become more urbanized. Ordonez et al. (2019) note that variation in urban forest governance may reflect differences among urban areas such as level of development, population density, and population growth. Hill et al. (2010) suggest that when a community is aware of the inhibitors to maintaining tree canopy cover – including insufficient budget, insufficient staff and equipment, competing priorities, lack of public support and political will, and lack of community recognition concerning the importance of tree management – it is an indication that the community is making efforts to acquire resources and protect trees to increase canopy cover. By contrast, if protecting or growing the urban forest is not a concern for the community, it will not identify any inhibitors and will not make efforts to maintain tree canopy (Hill et al. 2010).

Mincey et al. (2013a) observe that urban forest management is influenced across multiple scales by operational, policymaking, and constitutional rules that determine policy creation. The organization of urban forestry programs within governmental structures and communities is influenced by social systems and institutions. Lawrence et al. (2013) offer a comparative model of integrated urban forest governance which describes:

- **Context:** urban trees, forests, population size
- **Institutional frameworks:** policies, plans and regulations, ownership, and access
- **Actors and coalitions:** land managers, citizens and NGOs, partnerships, and power analysis
- **Resources:** funding, knowledge, delivery mechanisms
- **Processes:** discourses, participation, monitoring, and evaluation

This model is proposed as a method of mapping the whole picture of urban forest governance, that can help disentangle the complexity of the urban forest and enable comparison of urban forest governance

between jurisdictions. Such a model may provide insight into the type of urban forest governance frameworks that support adequate funding, political will, public pressure, and municipal capacity to enact and enforce effective tree regulation.

Issues of environmental equity and justice in urban forest governance are also coming to the forefront but are not yet well represented in the literature on regulating urban tree canopy. The U.S. Environmental Protection Agency defines environmental justice as:

“the fair treatment of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws and policies and their meaningful involvement in the decision-making processes of the government.”

Decisions made in urban forestry practice are not always equitable – for example, research found that resident associations involved in urban forest stewardship activities are more likely to be active in high income communities (Conway et al. 2011). Different stakeholders have varying levels of influence, with some urban forestry stakeholders such as municipal managers more connected to strategic planning and therefore more capable of influencing resource allocations (Campbell, 2016; Ordonez et al. 2020). Nesbitt et al. (2019) define urban green equity as equitable access to urban forests and governance. They present two practice-based models for urban green equity that practitioners can apply to recognize and overcome barriers to inequity in practice: recognitional equity and distributional equity. Recognitional equity describes the representation of stakeholders involved in urban forest decision making, stewardship, and representation in the profession (Nesbitt et al., 2019).

Distributional equity is focused on fair access to ecosystem services, which in urban forestry often relates to the proximity and extent of vegetation cover. The distribution of ecological attributes in cities, such as tree canopy, urban heat island, and environmental hazards are frequently driven by social inequity (Schell et al. 2020). Studies examining predictors of vegetation cover have proposed three social theories (Troy et al., 2007; Grove et al., 2006):

1. **Population density:** drives vegetation change through development.
2. **Social stratification:** predicts vegetation cover based on relative power, income and race differences among neighbourhoods, and the subsequent levels of public and private investment in greening.
3. **Lifestyle behaviour:** suggests increases in vegetation cover based on household patterns of consumption and expenditure motivated by social status resulting in a ‘luxury effect’, where groups with adequate discretionary income outwardly express prestige and neighbourhood belonging through their landscaping.

Affluent residential neighbourhoods often have greater vegetation cover, canopy cover, and plant diversity (Schell et al. 2020). Housing age and race have also been associated with trends in canopy cover (Troy et al., 2007; Watkins & Gerrish, 2018). A study of potential plantable areas on private land found that potential planting areas were limited in locations with high lot cover and density, which also

tended to be in neighbourhoods characterized by high population density with often lower incomes and higher proportions of minority households (Troy et al., 2007). This indicates that increasing canopy cover in underserved neighbourhoods may not be a matter of just increasing tree planting but increasing available plantable areas.

Studies find significant correlations between tree ordinance provisions and community urban forest characteristics related to wealth and education (Dickerson et al., 2001; Conway et al., 2011). Residents with a higher mean income and education level are more likely to live in areas that have ordinances with provisions biased toward protection and maintenance of existing community trees whereas residents with a lower education and income level are more likely to live in areas with ordinances focused on community aesthetics and safety (Dickerson et al., 2001). Understanding how current practices and policies contribute to environmental inequity and increasing diverse representation in decision making are important steps towards identifying policy outcomes that will improve environmental equity. When developing tree regulations, it is important to apply an environmental justice lens to ensure policies are not disproportionately impacting or penalizing minority or low-income populations.

3.0 Guidance for Effective Tree Regulation

Increasing or maintaining the number of trees and the extent of tree canopy cover in a city is an indication of effective tree regulation (Landry & Pu, 2010; Sung, 2012 in Clark et al., 2020). Tree regulations are commonly enacted by local governments to regulate tree removal, regulate the planting and maintenance of trees, and control landscaping and tree protection for new development sites (Yung, 2018). Beyond these direct control outcomes, tree bylaws serve broader urban forestry goals including watershed health, stormwater management, habitat, sustainability, canopy, aesthetics, and access to greenspace (Baur et al., 2016). Federal and provincial acts are often critical to provide local governments with the authority and guidelines to create bylaws. For example, BC's Community Charter delegates broad power to municipalities to regulate trees (on both public and private land), whereas Alberta's Municipal Government Act does not. Federal or provincial acts can also provide 'blanket' protection of the urban forest, such as for riparian areas or for species at risk, though this is not always the case (Fong, n.d.). The literature provides various insights into effective urban forest governance and implementation of tree bylaws and ordinances. This review focuses predominantly on private tree regulation because the majority of urban tree canopy loss occurs on private land, which is a more controversial space to regulate trees than on public land.

Given the complexity of urban forest governance, efforts to preserve trees must be trans-disciplinary and reach all the relevant actors. Much of the urban forest is owned and managed by private landowners (Clark et al., 1997). As a result, calibrating policy prescriptions (ordinances, standards) to community attitudes is important. There are significant differences between communities within and between regions which present challenges for recommending general best practices (Mincey et al., 2013a). Examples are common where bylaws not supported by a community fail to be adopted, are ignored, spark retaliatory actions, or detract from the community perception of the urban forest as a

public good (Mincey et al., 2013a; Treiman & Gartner, 2005; Nesse, 2020). Copying generic bylaw templates prevents a city from meeting the specific needs of the community and misses an opportunity to work with property owners and developers in the process to strengthen connections (Schwab, 2009).

Bernhardt and Nichols propose seven criteria for effective tree bylaws (Bernhardt & Swiecki, 1991; Nichols, 2007). These criteria will be discussed in the following sections and include:

- **Clearly stated goals:** Essential for interpretation of the bylaw and evaluation of effectiveness. The goals should describe the capacity of the tool to achieve certain goals with clear connection to any wider management strategies.
- **Designated responsibility:** Assign authority of a single person responsible or when resources are limited, split between city staff and tree commissions as needed.
- **Basic performance standards:** Indicate best management practices and standards that address the overall urban forest.
- **Flexibility:** Allows for site-specific decisions in the variety of circumstances that may arise and supports staff to use their discretion in a fair, reasonable and transparent manner. An appeal process is recommended to ensure decision making based on technical merit.
- **Enforcement:** Adequate staffing to administer the bylaw and provide enforcement, and effective penalties to deter violations.
- **Comprehensive management strategy:** Development alongside a Comprehensive Management strategy ensures goals align and are integrated with other community policy.
- **Developed with community support:** Align with community values and priorities that citizens are willing to comply and support.

3.1 Defining Goals for Tree Regulation

Much of the literature highlights the establishment of clear goals and purpose as integral to developing a successful tree bylaw or ordinance (Bernhardt & Swiecki, 1991; Heaviland, 2007; Nichols, 2007; NC State University Cooperative Extension, n.d.). Ideally, these goals should be driven by a higher-level plan, such as an urban forest strategy with established community-supported urban forest goals. Having data about forest cover change and tree protection issues of the community is also important to inform tree regulations (Forest Conservation By-law & Lower Tier Advisory Group, 2013). The literature describes a wide range of goals that could be used to guide the development of bylaws and potentially evaluate their success including:

- **Goals that focus on preservation**
 - Preserve beneficial stands of multiple trees
 - Preserve trees in sensitive ecosystems or on steep slopes
 - Preserve significant trees
 - Preserve mature trees
 - Preserve trees along roadways and vegetation roadway buffers
 - Prevent loss of tree canopy

- **Goals that focus on growth or replacement**
 - Establish trees in non-forested areas
 - Preserve space and soil for new trees
 - Increase canopy cover equitably
- **Goals that focus on quality and character of retained or replaced trees**
 - Maintain trees in a healthy condition through good cultural practices
 - Maintain aesthetics associated with existing trees
 - Maintain habitat values
 - Maintain species diversity
 - Maintain age diversity
 - Conserve local genetic resources
- **Goals that focus on ecosystem services**
 - Maximize the environmental, economic and social benefits provided by trees
 - Reduce the urban heat island effect and building energy use
 - Improve air quality
 - Reduced water pollution
 - Beautify neighborhoods

No single, best practice set of goals was found in the literature. It is evident that goals will vary depending on the regional context and values of each community. Larson et al. (2020) reviewed 156 landscape related ordinances (not just tree ordinances) across six US cities to capture their goals for conservation and environmental management, aesthetics and nuisance avoidance, and health and wellbeing. They found variation in the goals of ordinances based on climate and contexts. For example, wetter climates tended to emphasize stormwater management and flood mitigation, while drier regions emphasized water conservation (Larson et al., 2020). Some regions prioritized environmental services such as biological conservation and water quality protection, while others prioritized aesthetic ‘neatness and order’ over naturalized landscapes (Larson et al., 2020). They also found contradicting regulatory goals were common within regions and ordinances tended to overlook contradictions or trade-offs between goals; for example, emphasizing water conservation in one place but requiring irrigation to maintain healthy vegetation in another. Overall, Larson et al. (2020) concluded that coordinated, multi-objective planning with key stakeholders is important to develop ordinances with cohesive objectives and explicitly defined trade-offs.

3.2 Designated responsibility

Assigning administrative responsibility for the bylaw or ordinance is critical. Communities may designate specific positions responsible, or a citizen tree advisory board to share responsibilities (NC Cooperative Extension Service, n.d.; Nichols, 2007). In British Columbia, Councils can delegate powers, duties, and functions to a council committee, an officer or employee or another body established by Council. Specifying responsibility is especially important for a successful permitting program where it is crucial to have staff that can approve criteria, supply a permit, and enforce any mechanisms. While context specific, an agency or official must have expertise and support for the bylaw goals, and should be available throughout the process (Nichols, 2007).

3.3 Performance standards

Performance standards specify standards to be met by permit applicants and are an important aspect of effective tree bylaws (Bernhardt, 2001). Performance standards often address acceptable practices for activities such as arborist inventories and reports, tree protection, pruning, tree compensation, replacement tree planting, and maintenance (NC Cooperative Extension Service, n.d.). Municipalities should have a strategic plan for tree planting to ensure there are suitable locations to plant trees funded by cash-in-lieu (i.e., money provided by applicants in lieu of planting a replacement tree), which is when the value of a tree replacement is collected and used for a more suitable site than the original replacement site. Bernhardt (2001) identifies performance standards not aligned to goals can be a limitation to ordinances. For example, ordinances may require tree planting but do not set standards for the eventual amount of canopy to be achieved or may have more permit requirements for removing native vegetation but do not ultimately limit the maximum amount of native tree canopy that can be removed (Bernhardt, 2001). Instead, establishing standards based on a percentage of existing tree density or canopy cover can provide objective standards for assessing whether projects comply with tree regulation and will meet defined goals (Bernhardt, 2001).

Performance standards are also important for ensuring appropriate professionals are engaged by applicants. Professional qualifications for arborists can be addressed through standards such as requiring tree assessments and specification of tree protection measures that can be factored into the design process. Arborists must work with planners, architects, engineers, and contractors to ensure grading, trenching, and pruning will be compatible with preserved trees (Matheny & Clark, 1998). To meet tree management goals, consistent, professionally qualified follow-through is found throughout the literature to be a key success factor (Matheny & Clark, 1998; Nesse, 2020; Oregon State University Extension, 2009; APWA n.d.).

Most jurisdictions have standards documents that guide performance standards for tree regulations and complement professional experience. In the US and Canada, the American National Standard for Tree Care Operations (A300 standards) and the accompanying ISA best practices documents provide various standards for tree work, including for tree protection during construction (Accredited Standards Committee, 2007). Washington's Department of Natural Resources has published a best management practices guidebook for tree protection on construction and development sites for the Pacific Northwest based on these standards (Oregon State University, 2009). Other references commonly used in Canadian tree regulations include in Canada include the Canadian Landscape Standard and the Council of Tree and Landscape Appraisers Guides to Plant Appraisals.

Despite the existence of these standards, they are often voluntary, and in practice there is substantial variability in the performance standards used in tree regulations. For example, many British Columbia bylaws use a multiplier with diameter at breast height to calculate root protection areas, which is a standard practice. However, one bylaw may define the radius of a root protection area for a 50 cm tree as being 6 times DBH, or 3 metres, while another defines it as 18 times DBH, or 9 metres. The ISA provides general guidelines for the critical root zone (CRZ) calculated in metres or centimetres as 6 to 18

x DBH, with a medium tolerance, mature trees having a 12 x DBH multiplication factor. Another common rule is dripline plus 1 m. The BMPs for the Pacific Northwest recommend using both 12 x DBH and dripline plus 1 m and selecting whichever is larger to define the root protection area (Oregon State University, 2009). Consistency in the application of performance standards at a regional scale could improve clarity for applicants and project arborists who work across multiple municipalities. While standards are helpful as a baseline, it is still important to build in flexibility to enable site/tree specific decision-making by professionals within the bounds of best practices guidance.

Several industry standards and best practices are relevant to consider when developing performance standards for Canadian tree bylaws, including:

Publisher	Standard	Detail
International Society of Arboriculture (ISA)	Best Management Practices	The ISA publishes best management practices on many subjects in tree care, maintenance, and urban forestry applications. Certified arborists are encouraged by the ISA to follow all applicable best management practices.
American National Standards Institute	Z133, A300	The American National Standards Institute releases and updates the accepted industry standards for safety in arboriculture operations (Z133) and tree care (A300). ANSI Z133 covers criteria in general safety, electrical hazard, use of vehicles and mobile equipment, power tools, hand tools, climbing, and other procedures for workers engaged in arboriculture. A300 contains ten parts addressing the major aspects of arboriculture planning and practice, including pruning, soil management, tree planting and establishment, protection during construction, tree risk assessment, and integrated pest management.
Council of Tree and Landscape Appraisers	The Guide for Plant Appraisal	The Guide, now in its 10th edition, presents a widely accepted protocol for tree appraisal. Winnipeg applies the Guide when requests to remove significant trees are made under the City’s Tree Removal Guidelines.
Canadian Nursery Landscape Association	Canadian Landscape Standard, Canadian Nursery Stock Standard	The Association publishes standards in common use for landscape construction and nursery stock. Winnipeg incorporates the Canadian Nursery Stock Standard into its Tree Planting and Maintenance Specification.

3.4 Flexibility

Along with performance standards, flexibility is also important to cover the variety of circumstances that may arise and support staff to use their discretion in a fair, reasonable, and transparent manner. Flexibility is important for maintaining community support for tree regulation (Nichols, 2007; Nesse, 2020). Discretion is the ability to make a choice among one or more different possible courses of action that comply with applicable legislation (BC Ombudsperson, n.d.). To avoid inconsistent use of discretion, vague terms such as ‘reasonably’ and ‘minimal’ should be avoided when creating performance

standards, and standards should not be undefined and left to the discretion of the delegated authority (NC Cooperative Extension Service, n.d.; Schwab, 2009). An example of a flexible ordinance policy is in Fulton County, Georgia which provides the permit-issuing arborist discretion to determine the location and species of replacement trees based on site-specific physical and biological factors (Nichols, 2007). Another aspect of maintaining flexibility is keeping the bylaw or ordinance as brief as possible and housing performance standards and specifications in a separate document or appendix that is also approved by council but is easier to change (Dickerson et al., 2001; NCC Cooperative Extension Service, n.d.).

3.5 Enforcement

Tree regulations need to be supported by enforcement in order to ensure compliance (Bernhardt, 2001; Yung, 2018; Schwab, 2009; NC Cooperative Extension Service, n.d.). Enforcement is authorized by the regulation but it also depends on adequate staff resources assigned to enforce the regulations (Bernhardt, 2001; Nichols, 2007; Schwab, 2009). Staff resources include the staff who administer the bylaw (e.g., landscape review, city arborists), staff who inspect site conditions (e.g., city arborists, building inspectors) and staff who are dedicated to bylaw enforcement. Broadening the range of staff who can assist with enforcement, for example swearing in urban forestry staff to issue tickets, is one way to overcome resourcing challenges (Nichols, 2007). Nichols provides a unique example to address challenges with resourcing tree enforcement from Chapel Hill, North Carolina where localities train a developer's employee to designate a person responsible for enforcement (Nichols, 2007).

Regulations can further support enforceability by including provisions that provide opportunities for oversight either by staff or qualified professionals. For example, the regulation may require staff or project arborists to provide items such as monitoring reports, inspections for tree barriers, and replacement trees (Nichols, 2007).

Penalties such as fines, forfeiture of securities, and stop work orders are often used as deterrents or punishments for violations (Bernhardt, 2001; Nichols, 2007). Penalties can also include requiring replacement trees or monetary charges for restoration. While rare and not recommended, some jurisdictions in the US allow for criminal penalties including jail terms (Nichols, 2007).

Private stewardship is also key when resources are lacking for enforcement. In the paper by Clark, Ordonez, and Livesley, the authors find private tree retention can be improved with tougher penalties alongside stronger enforcement – this can be supported by community education through stewardship engagement activities (Clark, Ordonez & Livesley, 2020). Nesse (2020) observed that laws alone cannot protect trees. The stakeholders such as developers, property owners, renters, politicians, and the public require awareness, understanding, and a willingness to participate in order to accomplish long term success.

3.6 Integration into a Comprehensive Strategy and Urban Forest Program

One common theme throughout the literature is the importance of implementing a tree bylaw alongside a comprehensive strategy such as an Urban Forest Strategy (UFS) or at minimum, alongside a community plan, such as an Official Community Plan (OCP) in British Columbia. Comprehensive plans often represent a long-term (10-20 year) vision and strategy for a community by providing a framework

for implementation of land-use regulations including zoning and subdivision codes (Schwab, n.d.). These plans help provide strategic management direction to resource managers and serve to guide the intention of bylaws that are established. Fongar et al. (2019) found that municipalities in Norway with an adopted greenspace management strategy (including urban forest strategies) have significantly higher funding allocation to these resources than municipalities with no strategy.

Clark et al. (1997) describe a model for urban forest sustainability as a means of evaluating urban forest management in three elements:

1. **Vegetation resource:** dynamic systems providing continuity of services over time.
2. **Community framework:** public and private players and institutions to govern and steer urban forest management.
3. **Resource management:** plans, policies, funding, staffing, and implementation to realize established goals.

This model is helpful in identifying gaps and the strategic actions for a sustainable urban forest strategy. Nesse (2020) observe that the implementation of comprehensive strategies is dependent on key players or champions, especially in smaller municipalities. Management may hinge on the competency and initiative of individual staff members. In larger municipalities there is greater organizational separation from managers and decisionmakers. In either case, improving knowledge of the urban forest as a vegetation resource, building an understanding of urban forestry across the community, and integrating urban forests into resource management across the organization will help to shift urban forest policy and management towards more optimal sustainable urban forest management goals (Clark et al., 1997; Fongar, 2019; Nesse, 2020). Adaptive management can be used to integrate new opportunities for participation, science, and evolving community dynamics such as environmental justice movements into a responsive management system (Lawrence et al., 2013).

3.7 Community Support

In her approach to local ordinances, Sandra Nichols explains a successful ordinance must reflect the goals and needs of the community, therefore a variety of approaches to policy formation should be undertaken (Nichols, 2007). In recent years, the literature has addressed public response and attitudes to tree bylaws. One study, conducted across four neighborhoods of Mississauga (Ontario, Canada) by Tenley Conway, examined residential attitudes toward trees and level of support for various tree policies (Conway, n.d.). The study found that while nearly all residents appreciated trees, there were lower levels of support for municipal policies that encouraged planting and restricted the removal of trees (Conway, n.d.). People were more likely to support tree policies in areas where children were present, there was higher property-level tree density, people recently planted a tree, or where people had shorter residencies. Areas with older residents had lower support for tree policies because of the perceived maintenance required. Ordonez et al. (2019) found that strategies will fail if they focus solely on increasing tree numbers and urban tree-canopy, and do not address issues of interdepartmental coordination, risk aversion, and public engagement.

Weber et al. (2020) found that residents were willing to be active participants in tree preservation and management programs, but this engagement must be meaningful. Kangas et al. (2014) find that community participatory planning processes have been most successful when complex, ‘wicked’ problems affecting the urban forest, like climate change, are acknowledged up front and participants from different stakeholder groups are engaged in finding reasonable solutions such as through interdepartmental coordination. A participatory process in Finland (**Error! Reference source not found.**) reduced conflict between different stakeholder groups, and a pragmatic approach (that acknowledged differing values and perspectives) reduced miscommunications in discussions (Kangas et al. 2014).

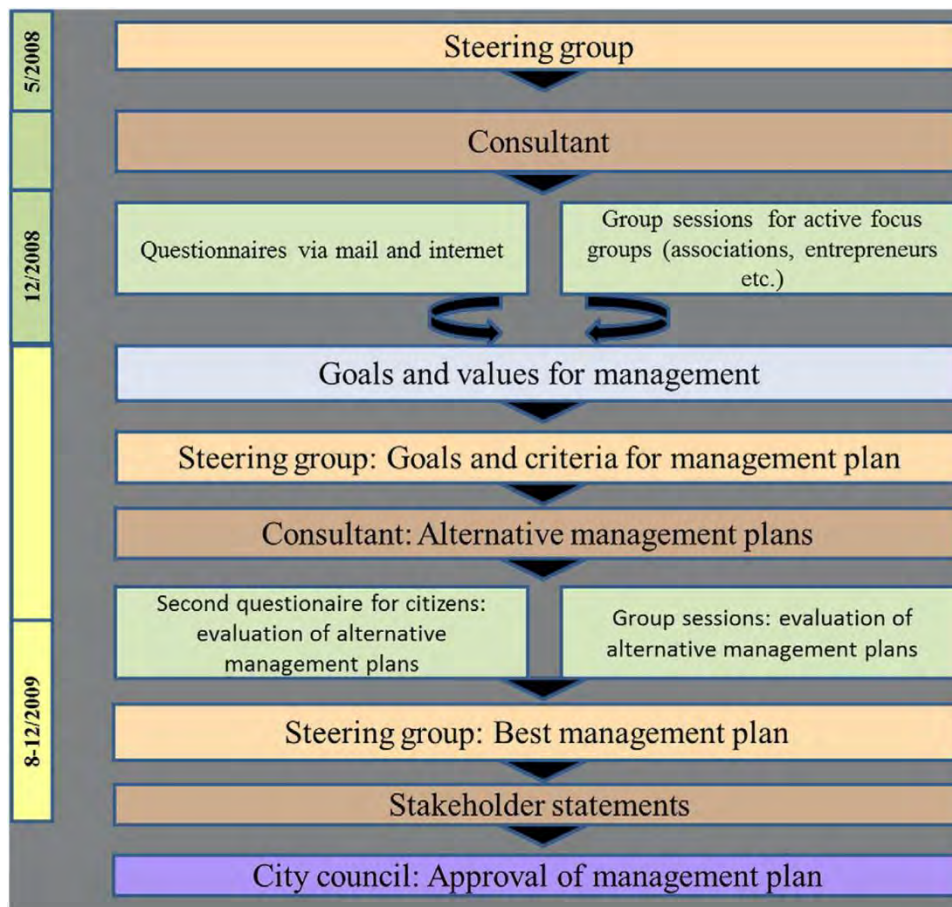


Figure 1. Participatory planning process from Kangas et al. 2014

In general, encouraging support for the urban forest may be possible using marketing, where planners and managers “sell” greener neighborhoods to different neighborhood-based consumer markets, building upon different groups’ needs, sense of social status and group identity (Troy et al., 2007). Careful consideration must be taken to prevent community exclusion using this method, where canopy marketing could have the potential to favour affluent communities, therefore, canopy cover proportion must not be the predominant driver. It is proposed this method could involve using market segmentation to measure different lifestyle groups’ preferences and motivations for various environmental behaviors, and then matching communication strategies to those preferences and

motivations in a spatially explicit context (Troy et al., 2007).

3.8 Methods of Assessing Performance

Upon implementation of a tree bylaw, Bernhardt (2001) stresses the importance of evaluating Urban Forest bylaw performance by sampling populations, using photogrammetry/remote sensing, and ground surveys. Clark et al. (1997) also specify GIS and remote sensing, along with tree inventories and urban tree canopy assessments within their performance indicators for vegetation resources. Indicators may include canopy cover, age distribution, species composition, and specific biological characteristics affecting population sustainability (McPherson, 2013; Clark, 1997). Performance assessment and monitoring are ongoing measures for adaptively managing a sustainable urban forest.

A 2010 canopy cover study in Tampa, Florida, presented a method for assessing ordinance performance using an IKONOS imagery analysis. In the study, residential areas were assessed to quantify tree loss in areas lacking regulation. The study found greater tree canopy cover on parcels with homes built post tree protection than prior to (Landry & Pu, 2010). They concluded municipalities could implement scientific knowledge to guide future bylaw creation. Baur et al. (2016) found that residents tend to support science-based management.

Qualitative assessment can be used to assess public sentiment for policies (Lawrence et al., 2013; Baur et al., 2016) using surveys, town hall meetings, and committees. However, Fongar et al. (2019) found that related or partner organizations may tend to focus on their own interests, which may not be representative of the broader community. Considering recognitional equity by reducing barriers to participation ensures a diversity of voices are heard which is important from an environmental justice perspective.

4.0 Incorporating Urban Tree Canopy into Land Use Regulation

Tree bylaws and ordinances are typically considered the most direct way to regulate trees. However, land use regulations have a significant effect on influencing canopy cover outcomes in new developments (Mincey et al., 2013b; Troy et al., 2007; Wilson et al., 2003). Hill et al. (2010) evaluated the impact of land use policies on tree canopy cover and found that tree ordinance clauses, zoning ordinances, and sustainable development practices, when implemented together, were most effective for preserving canopy cover in a community. Where tree bylaws and ordinances tend to focus specifically on regulating trees, other forms of land use regulation tend to be focused on outcomes for biodiversity, connectivity, and managing natural hazards, which are often particularly important for peri-urban forests.

4.1 Regional and Community Plans

There are various policies and tools that regulate tree protection noted throughout the literature, dependent on location. In Canada, Regional Plans and Community Plans guide the vision for land use, which is then implemented through municipal zoning and planning overlays at the finer scale. In the United States, Comprehensive Plans guide land use, which is then implemented by zoning and other ordinances.

At the regional scale, addressing ecosystem concerns can help to protect larger shared resources such as water and air quality as well as set regional canopy goals that are compatible with local canopy goals (Schwab, 2009). In BC, a Regional Growth Strategy (RGS) is an agreement across member municipalities and regional districts that aims to develop priority actions for social, economic, and environmental goals. Section 428(1) of the *Local Government Act* defines the purpose of an RGS is “to promote human settlement that is socially, economically and environmentally healthy and that makes efficient use of public facilities and services, land and other resources” (Local Government Act, 2015). While the overall goal of a RGS is to guide growth and development, goals include protecting environmentally sensitive areas and preserving, creating, and linking urban and rural open spaces including parks and recreation areas (Stewardship Centre BC, 2016). Local governments are required to include a regional context statement within their Official Community Plan (OCP) to demonstrate consistency with the RGS. As defined in Section 471(1) under the *Local Government Act*, an OCP is “a statement of objectives and policies to guide decisions on planning and land use management, within the area covered by the plan, respecting the purposes of local government.” Within the OCP, policy statement(s) can be included to further address components of the natural environment (Local Government Act, 2015). Below are examples of policy provisions that can be included in an OCP to support tree protection (Columbia Basin Trust, 2015):

- Integrate green infrastructure such as urban forests throughout the community to preserve existing ecological resources, support biodiversity and reduce climate risks
- Recognize and enhance ecosystem services provided by parks and open spaces and promote planning and design that enhances biodiversity, carbon sequestration and air and water quality

- Work with adjacent municipalities, regional, provincial and federal governments, First Nations and community groups to create a network of regional parks, trails, services, and facilities
- Include parks as secondary floor areas in stormwater management planning and flood plain mapping
- Ensure new park acquisitions maximize opportunities for biodiversity protection, stormwater management, flood control, and/or other functions that increase climate resilience
- Conserve water by improving efficiency of existing irrigation systems, improving park construction standards, designing for water conservation, using non-potable water, and converting park and civic building landscapes to reduce the amount of irrigated turf where appropriate

4.2 Zoning to Preserve and Grow Urban Tree Canopy

Zoning is the most common form of regulating land use and ultimately land cover. Zoning bylaws may indirectly influence urban tree canopy through land use rules, or directly by requiring maintenance of percentage canopy cover by zone (Mincey et al., 2013b). Different zones have rules for lot sizes, setbacks, building coverage, and how land can be used, which can in turn affect land cover and where tree canopy, and environmental benefits such as urban heat mitigation and stormwater interception are distributed (Wilson et al., 2003). Planners typically administer zoning bylaws and are often in the position of having to balance demands for growth while mitigating negative environmental impacts (Wilson et al., 2003). The conversion of land from a pervious, vegetated condition into urban materials such as concrete and asphalt has numerous environmental implications including increasing surface runoff, increased heat absorption and storage, biodiversity and biomass loss, and reduction in air and water quality, which in turn have negative effects on landscape aesthetics, energy efficiency, human health, and quality of life (Wilson et al., 2003).

Studies have found that canopy cover declines significantly when median building lot coverage or housing density increases (Hilbert et al., 2019; Landry & Pu, 2010; Troy et al., 2007). Wilson et al. (2003) used remote sensing to explore the relationship between zoning and density, radiant surface temperature and normalized difference vegetation index (NDVI – presence of live green vegetation). The study found that zoning characterized by low density development had the lowest impact on surface temperatures and vegetation cover. However, since urban sprawl is considered undesirable by many urban planners, Wilson et al. (2003) used the data to make the case against sprawl and located examples of lower impact development in high density zones, such as multifamily housing. Multifamily housing included developments with retained tree cover near the parcel edges and parking incorporated into the building footprint so the only impermeable cover in addition to the building parcel were access roads (Wilson et al., 2003). Despite these studies, understanding of the relationship between urban tree canopy and zoning is still not well enough understood to inform fine scale land use planning (Mincey et al., 2013b).

Recent work by Metro Vancouver found that most of the tree canopy cover in the urban areas is in “Residential – single-family detached with no secondary unit” (Metro Vancouver, 2019). “Parking” and

“Retail and other commercial” areas have the least canopy cover at 5% and most impervious surface at more than 90% (Metro Vancouver, 2019). The study also found a relationship between tree canopy cover and age since development. High density housing stock actually showed gains in canopy cover from the 1940s to 1980s. Low density housing canopy cover was relatively steady until the 1970s and then shows a declining trend up to 2000. This decline indicated that fewer, or smaller, trees were being retained or planted during construction of low density housing over time as lot sizes shrunk and demand for bigger homes increased, resulting in increased lot coverage (Metro Vancouver, 2019). The high density canopy cover trend was attributed to the ‘skyscraper’ boom in 1960s, 1970s, and 1980s that was characterized by tall and slender buildings with low Floor to Area Ratio (FAR), and enough space between them to preserve view corridors (Metro Vancouver, 2019). Similar to the example of multifamily housing developments highlighted by Wilson et al. (2003), this “Vancouverism” architectural model featured residential buildings that used up little lot coverage and allowed abundant greenspace, street trees and other public space at ground level (Metro Vancouver 2019). However, average canopy cover has been declining in both high density and low density housing stock in Metro Vancouver between 1980 and 2000.

Zoning is an important tool for tree preservation because it determines development type by land cover, including the permeable space that will remain on a site post-development. Additionally, zoning can independently, or in combination with overlays such as development permit areas, regulate landscaping post-development, establish requirements and guidelines for the preservation of environmentally sensitive areas, encourage the clustering or transferring of density to preserve environmentally sensitive areas, and require setbacks or buffers from other land uses (Cullington et al., 2008). These tools often determine if a tree or stand of trees can be retained with development. While a tree bylaw can strengthen tree protection, it cannot prevent development to permitted use or density according to zoning. Landscaping regulations can also be incorporated directly into zoning, subdivision regulations, and site plan regulations and cover a variety of tree measures including tree planting, preservation of trees, plantable area, required tree canopy cover, maintenance, and enforcement.

In the United States, some cities instead choose to adopt overall landscaping ordinances that support a Comprehensive Plan which includes five provisioning components including site landscaping, buffering and screening, street trees, parking lot landscaping, and tree preservation. Under the landscaping ordinance, the urban canopy can be enhanced through the site landscaping provision which requires tree cover to fulfill a city-adopted canopy cover percentage or to meet an established number of trees per dwelling unit. Trees can also be planted under parking lot provisions, typically including multi-family residential, and non-residential use – for example in Des Plaines, Illinois one shade tree must be planted for every 100 square feet of landscaped area (Bowen, 2004). Similarly, in BC, municipalities can incorporate landscaping requirements into zoning and subdivision bylaws to regulate urban tree canopy during development without enacting a tree bylaw. However, this means that trees are not generally regulated and protected except during development.

4.3 Planning for values and hazards in urban and peri-urban forest stands

Regional and community planning processes will often identify natural values and hazards related to forest stands that overlap with, but are not adequately addressed by, urban forest strategies, tree bylaws and ordinances. In the US, zoning overlays identify areas where special provisions will apply; they can be used to protect natural resources or to preserve forestry integrity. Overlays incorporated into policies such as the OCP and other strategic plans can create policies that are more targeted to managing values and hazards in urban and peri-urban forest stands than tree bylaws.

Biodiversity, and the protection of environmentally sensitive areas, is a value of forests and other ecosystems that warrants dedicated strategies and policies in order to guide its preservation and enhancement. Regional conservation strategies can be used to inform the RGS, OCP, and other government processes on enhancement strategies and goals for protection and restoring diversity in ecological areas; they can also directly impact the urban forest by setting goals to map biodiversity, acquire forest, and protect green infrastructure (Stewardship Centre BC, 2016). One example from British Columbia of a Regional conservation strategy is the Comox Valley Land Trust Regional Conservation Strategy, which outlines priority ecological and recreation areas to provide recommendations applicable to all participating local governments (Fyfe, 2008). At the municipal level, biodiversity or green infrastructure strategies can achieve similar outcomes. An urban forest strategy helps to integrate the management and protection of tree resources into the municipal policy framework, biodiversity strategies integrate green infrastructure. These strategies set environmental targets that can be integrated into community plans, zoning, stormwater management plans, and other various bylaws and legal documents (Schwab, 2009).

Wildfire is a hazard of forest fuels. In British Columbia, and in other Canadian and US municipalities, many communities have developed or are developing community wildfire protection plans. Municipalities in BC and the US can have development permit areas or overlays that are specific to FireSmart or Firewise development in the wildland urban interface (WUI). With the increasing incidence of severe wildfire and its direct impact on lives, homes, and infrastructure, management of fire and fuels within the WUI is driving many policy decisions (Barrett, 2019). Fire resilience strategies such as Firewise USA and the Community Planning Assistance for Wildfire project focus on proactive strategies to reduce flammable materials including vegetation in proximity to structures (Mockrin, 2020). Within the WUI, correlation of population density within proximity to vegetation/forest type can be used to assess fire risk (Miranda, 2019). Canopy cover and tree preservation goals in this context may conflict with fire risk reduction goals, since contiguous fuels are a pathway for fire spread. In these instances, bylaws and ordinances need to enable consistency with WUI management, through permitting removals for that purpose and ensuring that replacement trees and landscapes conform with FireSmart guidance.

Layered on top of zoning, cities can adopt planning overlays to identify land with specific management intent to align with strategic objectives for protection of the natural environment (Ordonez & Livesley, 2020). For example, in BC development permit areas can be for the:

- Protection of the natural environment, its ecosystems and biological diversity
- Protection of development from hazardous conditions
- Establishment of objectives to promote energy conservation
- Establishment of objectives to promote water conservation
- Establishment of objectives to promote the reduction of greenhouse gas emissions

Such overlays can complement tree bylaws by providing guidelines to achieve specific objectives in these areas when development occurs. It is worth noting that, while land use zones, schedules, overlays, and local laws can equate to regulatory policy mechanisms toward private tree protection, effectiveness is still limited to the capacity and resourcing of the organization (Ordóñez & Livesely, 2020).

5.0 Private Tree Protection in Canada and the US

In municipalities across North America, trends suggest the majority of tree canopy falls on private property (Clark et al., 2020). In Canada, the ability of local governments to regulate tree removal and replacement is controlled by provincial legislation. As regulating private trees becomes more commonplace, municipalities are increasing the restriction of residential tree removal, with initial evidence suggesting their effectiveness at increasing and protecting canopy cover (Conway, 2010). The degree of protections provided to trees on private property varies widely by jurisdiction and local bylaws which reflect community attitudes towards associated local bylaws. The following sections describe private tree protection approaches in Canada, the United States and Australia.

5.1 Private Tree Protection in Canada

Canada's urban tree canopy declined by 1.5% between 1991-2011 – however while the national average decreased, the prairies have seen an increase in tree canopy cover on land previously lacking trees (Webber et al., 2020). It is expected that communities in forested ecoregions see a net loss of trees as forests are cleared and fewer trees are replanted with development, while prairie ecoregions see a net gain of tree cover from developer plantings in what was previously grassland.

Across Canada, the literature revealed a variety of private tree bylaws in place at the municipal level in British Columbia, Ontario, Québec, and Prince Edward Island. Provincial legislation is the acting authority that regulates tree bylaws in Canada and only some provinces have legislation explicitly regulating trees on private land.

British Columbia

In British Columbia (BC), tree bylaws are variable in their approach to tree regulation, with many applying to specific species and diameter, some applying to only heritage trees, others applying to trees 10 cm or greater but not restricting their removal, and still others applying to only certain areas within a municipality (Cullington et al., 2008). The presence of tree bylaws in BC appears to be related to population size. A review by Diamond Head Consulting looked at BC municipalities with a population of 2,000 people or more and found that approximately half of the municipalities had some form of private

tree bylaw, and municipalities over 25,000 people had a private tree bylaw almost 80% of the time. It is important to note that, despite a tree bylaw being in place, a tree is not protected if it would prevent a permitted use or development density enabled under a zoning bylaw. Limited literature exists on the effectiveness of BC's tree bylaws. Dunster (1994) examined several bylaws in BC relatively soon after provincial legislation enabled their enactment. At that time, Dunster highlighted several issues including:

- Public and political desire for strong tree protection and the potential for liability issues being created when forest trees retained were vulnerable to windthrow
- Inadequate protection during construction and maintenance after the development to ensure retention is successful
- Hazard assessments being performed by professions other than ISA Certified Arborists
- A need for post-development hazard assessments
- Lack of evidence to assess their effectiveness

Ontario

Ontario is unique in that it is the only province that explicitly identifies urban forestry in legislation through the Professional Foresters Act, Municipal Act, and Planning Act; while these policies succeed in acknowledging urban forests, they lack weight in placing significant authority onto municipalities (Barker & Kenney, 2012). Barker and Kenney in their 2012 study found that community residents are critical to elevate the quality of urban forestry programming in small communities and the public must be engaged. A study by Dr. John FitzGibbon and Sylvia Summers found that for over 50 years, the municipalities in Ontario have had authority to enact tree conservation bylaws, but penalties and enforcement of these bylaws is limited (FitzGibbon & Summers, 2002). Yung (2018) found bylaws in Ontario were fragmented across municipalities due to the scattering of urban forestry practice across public and private land. He noted several key problems, the most crucial being the variety of bylaws and non-legally binding policy, and the discretion of the municipalities to implementing a tree bylaw.

Quebec

In Quebec, the Act Respecting Land Use Planning and Development enables municipalities to regulate or restrict the planting or felling of trees in their zoning bylaw to ensure the “protection of the forest cover and promote the sustainable development of private forests” (*Loi sur l'aménagement et l'urbanisme*, chapter 19.1, section 79.1). Cities such as Quebec City regulate the removal of trees on a lot frontage or back and require the protection or replanting of trees for development projects. No literature was found that studied the effectiveness of Quebec's tree bylaws.

Prince Edward Island

On Prince Edward Island (PEI), municipalities are enabled by the Municipal Government Act to pass bylaws for “tree preservation and protection” as well as the “development and implementation of maintenance standards for trees”. The municipality of Charlottetown updated its Tree Protection Bylaw

in 2019, which focuses on the protection of public trees as well as private heritage trees (>100 cm DBH). No literature was found that studied the effectiveness of PEI's tree bylaws.

5.2 Private Tree Protection in the United States

The United States loses over 70,000 hectares of urban tree canopy per year (Koeser, 2020). Multiple forms of assessment have been undertaken to evaluate current standards of tree bylaws in the United States. The most comprehensive study was completed in 2014 by Richard Hauer which analyzed over 667 communities across the United States (Hauer, 2014). The results of the study showed over 90% of municipalities had some form of tree ordinance with the five most common ordinances as follows:

- 80% have defining authority
- 77% have regulated removal of dead and diseased trees
- 70% have an approved tree list for public tree planting
- 68% required tree planting in new developments
- 60% require tree planting around new parking lots

Hilbert et al. (2019) found that heritage tree ordinances, which protect large diameter trees, were a significant predictor of higher urban tree canopy and important for canopy retention.

Additionally, the study identified that 54% of municipalities surveyed require tree preservation during development. Only 25% restrict cutting on private property and 31% identify heritage/significant trees for preservation. These numbers illustrate the patchwork of protections for trees on private property. Communities that have established canopy goals may be in a better position to influence private tree canopy as a community resource (Haur, 2014).

Ordinances differ widely between communities. State and Federal laws generally do not impact local municipal urban forestry ordinances. Some exceptions include state level requirements for stormwater retention facilities (bioswales) and trees in new hardscape installations, invasive species regulations (eg. USDA Animal and Plant Health Inspection Service (APHIS)), and the Migratory Bird Act. Natural or undeveloped areas (especially on waterways) and the peri-urban forest fall more often under state and federal regulations. Tree removal or development in these areas may be prohibited under water quality permits (EPA), the Endangered Species Act (US Fish and Wildlife Service), or archaeological/cultural preservation laws (eg., Washington Forest Practices Act).

The United States administers urban forestry policy at the federal, state, and municipal level. The US Department of Agriculture administers the US Forest Service (USFS) which delivers the Urban and Community Forestry (UCF) program throughout the US in a multi-stakeholder framework through agencies – however this does not benefit all municipalities equally as the centralization of the urban forest program does not guarantee small municipalities will be equipped to meet challenges (Barker & Kenney, 2012). Federal UCF serves largely to support individual state programs, administered by various state agencies (Colorado State Forest Service, Oregon Department of Forestry, Washington Department of Natural Resources, Massachusetts Department of Conservation and Recreation). University Extension

Services and regional urban forestry councils (e.g., Texas) comprise another level of support for communities. Research partnerships between USFS and universities or extension services are found in nine geographic regions. Private research partners include the Arbor Day Foundation, Bartlett Tree Experts, and Davey Tree Experts.

In many cases, state efforts draw on the resources of the Arbor Day Foundation for outreach and incentives. The Tree City USA program is a common thread for communities engaged in UCF at any level. Four standards of the TCUSA program offer low barrier entry with minimal requirements including:

1. Tree Board or Department
2. Tree Care Ordinance
3. Community Forest program with annual budget of, at minimum, \$2 per capita
4. Arbor Day observance and proclamation

State employees tasked with UCF typically work with communities who wish to attain or maintain TCUSA status and offer support in developing tree ordinances. No specific requirements are defined for what the ordinance shall include, however a brochure is available from the Arbor Day Foundation with a framework for content (Fazio, 2017).

In summary, tree ordinances at the local level have the most impact on a community's urban forest. A multitude of guidelines, Best Management Practices, and templates are available which policymakers and managers at the local level can tailor to meet community needs. Private tree protection in the US, as elsewhere, is a sensitive subject, fraught with pitfalls if not implemented with community support. In the policy context, canopy loss can be attributed to increased development, densification, lack of understanding of trees, and lack of integrated planning and development processes. To illustrate the variety of regulatory approaches across the United States, several jurisdictions are discussed in detail below:

Florida

A particular study by Andrew Koeser evaluated the impact of Florida's recent state statute which significantly limits local government oversight of trees on private property (Koeser, 2020). Florida leads in annual tree canopy loss in the United States and is second only to Texas in impervious surface area – this is in part because opponents of tree protection and regulation see unnecessary taxation as adversarial to economic growth. While Florida was an early leader in creating provisions to oversee private tree removals (twice as likely to regulate trees on private property compared to other cities prior to new law), it is now the first state to have local oversight removed. At the time of the study, very few cities had moved to comply with Florida's new state statute. As a result, the full impact to private tree regulation had not yet been observed (Koeser, 2020).

Massachusetts

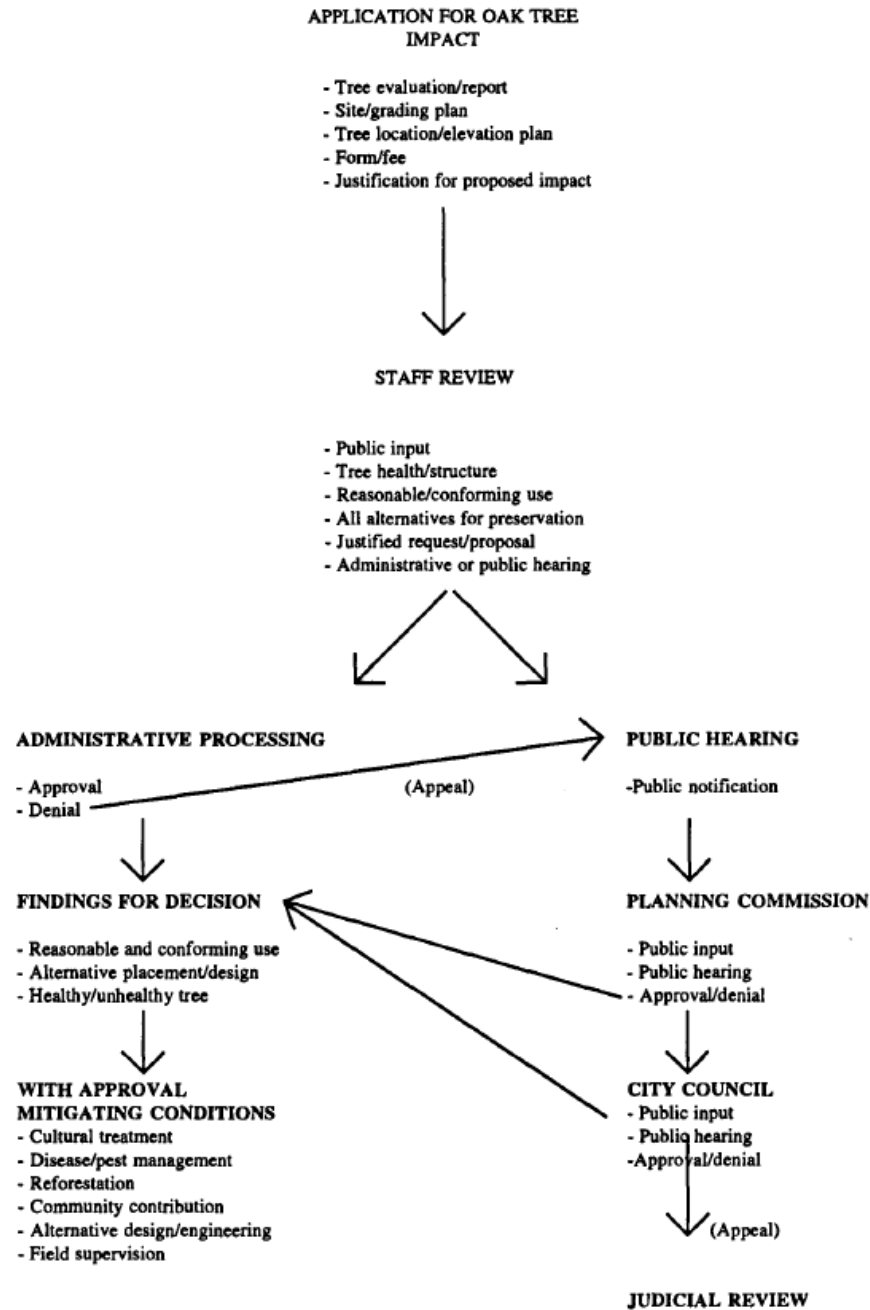
Massachusetts adopts a unique and historical approach to tree regulation through the implementation of Tree Wardens under state law (Steiner, 2010). Driven by early community support for trees, the Public Shade Tree Act was passed in 1899; the act places complete authority over maintenance, trimming, and tree removal at the hands of the wardens, requiring every municipality to have a position. The tree warden role (elected or appointed) has evolved over the years from a tree conservation focus to hazardous tree removal. The requirement of public hearings for tree alteration (except for six exemptions) has created issues and conflicts over tree damage and hazards. Adopted in 1973, the Scenic Roads Act overlaps responsibility and is implemented by the town planning board, however, this overlap can cause conflict between the controlling authorities (Steiner, 2010). Steiner recommends three advances to the Public Shade Tree Act to adapt to modern practice:

- Clarify authoritative control in the event of conflict between warden and planning board
- Clarify if trees may be removed to support efficiency of home energy systems
- Clarify appropriate level of training for wardens

California

Starting in 1972, the City of Thousand Oaks, California adopted the Oak Tree Ordinance as an Emergency City Council Proclamation – the toughest tree preservation ordinance enacted in California (Elmendorf, 1991). The ordinance was implemented following a public outcry when large valley oak trees were uprooted in an unapproved development. Citizens in Thousand Oaks demanded that oak trees were incorporated into new commercial construction and development designs. Having both staff and community on board with key objectives and a clear tree removal application system has enabled the City to protect trees. A key component to the success is the City's belief that private and public sector costs associated with enforcement and administration of the ordinance is insignificant compared to its benefits. Figure 2 below shows the method for evaluation of proposed Oak tree impact for the City of Thousand Oaks (Elmendorf, 1991).

Figure 2. Method of Evaluation of proposed oak tree impact, City of Thousand Oaks



6.0 Tools Available to Municipalities in British Columbia

There are a variety of tools available to municipalities in British Columbia for regulating urban tree canopy. The list below summarizes key tools that support tree regulation available for practitioners in British Columbia:

6.1 Acts

Local Government Act - Previously the Municipal Act, the Local Government Act recognizes the importance of all local governments including municipalities and regional districts and enables the creation of the Community Charter (BC Ministry of Municipal Affairs, n.d.).

Community Charter - Responsible for enabling municipalities to establish the below tools, the Community Charter enables Council to “regulate, prohibit or impose requirements in relation to [...] trees” (sections 8(3)(c), 50 and 52). The Community Charter provides municipalities with the rights to provide services and develop bylaws including the development of Tree Bylaws and Official Community Plans, however, it does not include the City of Vancouver which has its own legislation *Vancouver Charter* (Government of British Columbia, 2020).

6.2 Regional Level Tools

Regional Growth Strategies (RGS) – Regional Growth Strategies are an agreement across municipalities on the future region, population and employment projects, actions proposed, and targets, policies, and actions for the reduction of greenhouse gas emissions (Local Government Act, RSBC 2015, c 1, 2015). The RGS aims to protect environmentally sensitive areas by detailing the means of green infrastructure protection and as defined in Section 429 of the *Local Government Act*, must cover a period of at least 20 years. The RGS can also include regional visions, raise the profile of regional issues to initiate discussion, and provide mechanisms for coordinating regional action through mapping sensitive ecosystems, committing to acquiring sensitive ecosystems, and designating urban containment boundaries (Stewardship Centre BC, 2016).

Regional Conservation Strategies (RCS) - Governed by the Local Government Act, the Regional Conservation Strategy (RCS) aims to enhance biological diversity in a region and protect and/or restore ecologically significant areas through establishing mapping frameworks to identify goals for protection. The RCS can be part of the Regional Growth Strategy or Official Community Plan (Stewardship Centre BC, 2016).

6.3 Municipal Tools

Official Community Plans (OCP) - The Official Community Plan (OCP) is a comprehensive plan that can include environmental protection policies. They can also define settlement patterns to guide development and avoid sprawl, map key areas, and designate Development Permit Areas and guidelines for Development Permits responsible for tree protection and replacement (Stewardship Centre BC,

2016). OCPs can establish goals and indicators related to preserving and growing a community's urban forest and support the implementation of community-supported bylaws and policies for that purpose.

Neighbourhood Plan – Adopted as an amendment to the Official Community Plan, the Neighbourhood Plan is a helpful accompanying policy tool to set targets for canopy cover, policy objectives, and character elements of importance. This scale enables additional consideration to local land use and neighbourhood context. Neighbourhood Plans can further define Development Permit Areas for protection of sensitive ecosystems and identifies green corridors (Stewardship Centre BC, 2016).

Development Permit Areas (DPAs) – Development Permit Areas (DPAs) can define land with a specific management intent to align with strategic objectives for protection of the natural environment. They can also provide local governments with site control over layout and design with the intent of limiting development for protection of the natural environment. Land must not be subdivided, or construction started unless a development permit is obtained (Columbia Basin Trust, 2015). Environmental Development Permit Areas (EDPAs) are permit areas specifically to protect sensitive ecosystems and prohibit disturbance activities to trees during development (Stewardship Centre BC, 2016).

Tax Exemptions and Conservation Funds – Supported through the Tax Exemption and Conservation Funds Community Charters, the funds can encourage landowners to protect and maintain natural areas (Stewardship Centre BC, 2016).

Security and Covenants – To prevent developers from damaging Environmentally Sensitive Areas (ESAs), a security deposit can be held and used to restore trees and damaged landscaping. Security and covenants are often managed through the Community Charter, under the Local Government Act, and Land Title Act (Stewardship Centre BC, 2016).

6.4 Bylaws

Zoning Bylaws – Allow for development to be directed away from sensitive ecosystems to help maintain green infrastructure by setting lot sizes and requiring buffers between new development; they can also allow a developer to seek a density bonus in return for protection of green infrastructure (Stewardship Centre BC, 2016). Zoning bylaws also enable the removal of trees to allow for permitted use and drive the extent of impervious cover.

Landscaping Bylaw - Regulates larger scale activities across different scales to specify planting and native species requirements. Tree and watercourse protection are often included in standalone bylaws and in Environmental Development Permit Area (EDPA) guidelines (Stewardship Centre BC, 2016).

Tree Bylaw – Sets standards for homeowners and developers for tree protection and replacement with a general goal to regenerate and enhance the urban forest. Can be a pathway to public education and is the most direct way to administer tree protection (Stewardship Centre BC, 2016). The Community Charter (Division 7 - Authority in Relation to Trees) places certain restrictions in relation to the authority

to regulate trees. Notably, a tree bylaw would not typically apply to a parcel (or part of it) if it would prevent permitted uses or development density under the applicable zoning bylaw.

Watercourse Protection Bylaw – Regulates specific activities and development in riparian setback areas directly related to water quality and can provide protection of these trees to manage infiltration requirements (Stewardship Centre BC, 2016).

Rainwater Management Bylaw – Can support the planting of trees and bioswales as an infiltration strategy that can require developers to minimize changes to water flow during construction, often through the protection of vegetation (Stewardship Centre BC, 2016).

Screening and landscape Bylaw – Can require the use of screening or landscaping to preserve, protect, restore, and enhance the natural environment. They can also prevent hazardous conditions for example, requiring specific plant types in a wildfire hazard area.

Soil Removal and Deposit Bylaw - Often called sediment and erosion bylaws, these bylaws regulate grading, soil removal and deposition, soil storage, and erosion control guidelines during development which can impact trees (Stewardship Centre BC, 2016).

Pesticide Use Bylaw - Controls pollution from pesticides into sensitive ecosystems (Stewardship Centre BC, 2016).

Invasive Species Bylaw – Maintains sensitive ecosystems and controls noxious plants that may impact urban forest stands and plantings (Stewardship Centre BC, 2016).

6.5 Urban Forestry Specific Tools

Urban Forest Management Plans (UFMP) - A UFMP is a defining document that outlines the vision, criteria, and actions for the management of the urban forest. They can address themes such as tree maintenance, planting, climate change, social and educational opportunities, policy and administration, economics, and temporal-spatial time frames (Ordóñez, 2013).

Stewardship Programs – Stewardship programs are an educational outreach tool that can include initiatives and groups dedicated to care of the urban forest. Stewardship groups can focus on aspects of tree maintenance, planting, and community education (Schwab, n.d.).

7.0 Conceptual Model for Comprehensive Canopy Regulation for Municipalities in British Columbia

The graphic on the following pages describes how the regulatory tools enabled by BC’s institutional frameworks that can be used to protect or grow different types of urban forest canopy.

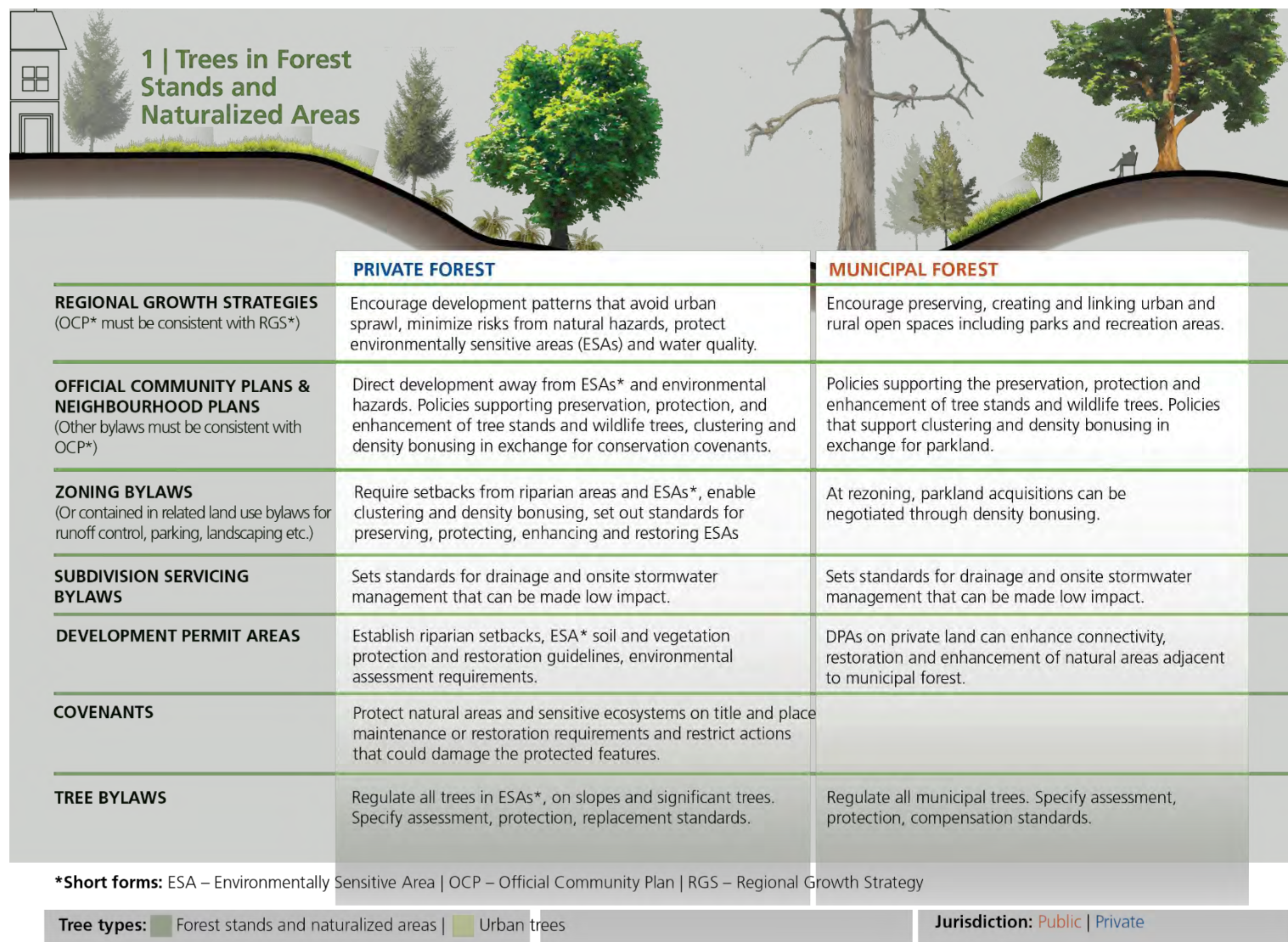



Figure 3. Key regulatory tools in BC that can be used to protect or grow urban forest canopy types (con't on the next page).



2 | Trees in Urban Areas

MUNICIPAL STREET & PARK TREES	PRIVATE YARD TREES	PRIVATE TREE IN A DEVELOPMENT
Develop settlement patterns that minimize the use of automobiles and encourage walking, cycling and the efficient use of public transit.		
Policies and targets supporting parkland amenity contributions, new parkland, expansion of the urban forest, treed character of streets and areas, integration with goals such as stormwater management, biodiversity, energy conservation and walkability.	Policies supporting the treed character of new landscaping in land uses and neighbourhoods.	Policies and targets supporting tree and canopy retention, protection and enhancement.
At rezoning, negotiate amenity contributions for new parkland. Require setbacks of above and below ground structures, signage and weather protection favourable for street trees.	Require lot sizes, trees per lot, impermeable/permeable cover, off-street parking, screening and landscaping, favourable to yard trees.	IMPORTANT: The tree bylaw may not apply to the extent necessary to allow a permitted use or density.
Set standards for boulevard trees, spacing, soil volume, planting standards, access, utilities favourable for street trees.	Set standards for access and utilities placement favourable to yard trees.	Set standards for access and utilities placement favourable to retaining private trees.
	Promote energy conservation, water conservation and reduction of greenhouse gas emissions using trees.	
		Protect trees or tree groups on developing properties, place maintenance requirements and restrict actions that could damage the protected features.
Regulate all municipal trees. Specify assessment, protection, compensation standards.	Regulate certain trees and require a minimum number of trees/canopy per lot. Specify assessment and replacement standards.	Regulate certain trees and require a minimum number of trees/canopy per lot. Specify assessment, protection, replacement standards.
Tree types: ■ Forest stands and naturalized areas ■ Urban trees		Jurisdiction: Public Private

For a municipality considering the appropriate regulatory tool/s to select, the Lawrence et al. (2013) model of integrated urban forest governance provides a helpful framework for identifying factors that are important to the decision:

1. Context:

- What are the urban forest canopy types (see Figure 3 on previous page) that are the target of canopy preservation or growth?
- What level of administration and enforcement effort can be supported by the population size?
- What level of regulation would align with community values?

2. Institutional frameworks:

- What types of policies, plans and regulations are already in place and how could they be enhanced or complemented with updates or new regulation?
- Are new policies or plans required to support new regulation?
- What urban forest canopy or tree targets exist in policies and plans, and can the new regulation be used to achieve them?

3. Actors and coalitions:

- Who are the key stakeholders who need to be consulted?
- Who needs to support the decision and who will make the final decision?

4. Resources:

- Will funding and staffing need to increase to support the new regulation?
- What new technical information need to be provided to internal and external stakeholders?
- Can other policies, programs or staff be able to support implementation of the changes?

5. Processes:

- What are the narratives, conflicts and framing that justify the changes being made?
- What are the specific ways that actors and stakeholders will be consulted, engaged, involved and empowered in decisions and implementation?
- How will success be measured and reported in relation to targets?

8.0 Conclusion

A review of the available literature has provided insight into the variety of tree protection methods and their successes and limitations. The literature provides guidance for creating effective tree regulations, including the importance of supporting bylaws with adequate resources for compliance and enforcement, as well as implementing tree bylaws alongside comprehensive plans and strategies, and other regulatory tools and stewardship programs. While there is no one size fits all approach, there are best practices that could improve performance standards. Community engagement is key both to support tree protection efforts, and to develop a bylaw that meets the needs of each local community.

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Appendix 3. Worksheet to Review Higher-Level Plans

Higher Level Planning Tools: Official Community Plan (may also include neighbourhood plans and urban design guidelines)

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
A clearly defined vision that, at the highest level, supports the importance of trees and forests to the community						
The connection between human health and well-being and forests and trees						
Aligning urban forest strategies with transportation, park, and climate plans						
Supporting development and implementation of urban forest and biodiversity conservation strategies						
Natural Environment						
Strategies that support urban forest goals and operational targets including tree canopy extent, planting targets, condition, and distribution, ecosystem services and urban forest system vulnerabilities						
Best management practices for the planting, establishment, maintenance, protection, risk management, and removal of trees						
Protection of significant trees or stands of trees						
Maintaining or enhancing the ecological viability of the urban forest, including supporting a diversity of forest types and a minimum widths/size of retention areas						

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
Maximizing the retention of existing vegetation and soils through development and infrastructure projects						
Design of new developments to prioritize protection of environmentally sensitive areas identified in a Natural Environment Development Permit area						
Maximizing the retention of existing native vegetation and restoring native vegetation wherever possible during site development in environmentally sensitive areas identified in a Natural Environment Development Permit area						
Provincial or regional conservation planning and priority-setting efforts to conserve biological diversity and protect threatened and endangered species and ecosystems						
An ecosystem-level approach to ecological planning and management to ensure the ongoing function of environmentally sensitive areas, establishment and/or retention of ecosystem connectivity corridors and the preservation of species at risk						
Strategies to manage and protect rivers, streams, lakes, wetlands, other water bodies, and riparian areas, and to manage stormwater						
Strategies to maintain and improve biodiversity through the establishment and preservation of ecosystem connectivity corridors						

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
Integrated management options where appropriate, such as prescribed fire, rotational grazing, and natural regeneration to increase forest health and vitality						
Strategies to restore critical habitat and culturally significant vegetation						
Incentives for voluntary environmentally sensitive area protection including allowing increased height and density on the balance of the subject property, transferring density to another property, trading land, purchasing land, offering grants-in-aid, or granting tax exemptions						
Requiring land use and development projects to have "no net loss" of natural ecosystems and their functions as determined through environmental assessment for properties identified in a Natural Environment Development Permit Area, and pursuing net gain overall						
Mitigation sequencing of management actions that could harm trees or habitats by first trying to avoid impacts through siting and design, mitigate impacts where possible, or compensating if the loss is unavoidable						
Compensation requirements for unavoidable losses or trees or habitat						

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
Stewardship of environmentally sensitive areas on private property through conservation tools such as conservation covenants, land trusts and eco-gifting						
Tools to protect environmentally sensitive areas including dedicating land, returning to Crown Land, covenants, density bonusing, cluster housing, amenity contributions and adequate setbacks						
Initiatives, policies, outreach, or public assistance strategies that encourage private landowners to replace trees that have died or been removed						
Equity						
Equity in planning decisions and resource allocation in the community to ensure that forests and trees are preserved and protected in all neighbourhoods regardless of social, ethnic, or economic demographics						
Strategies to ensure equitable distribution, access and utilization of urban forests, parks and greenspaces						
A commitment to recognize and respect the rights of Indigenous Peoples, including use of available resources and information to identify the Indigenous Peoples whose rights may be affected by the organization's urban forest management activities,						

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
recognition of the established framework of legal, customary, and traditional rights such as the Calls to Action from the Truth and Reconciliation Commission and the United Nations Declaration on the Rights of Indigenous Peoples						
Inclusive community engagement, diverse partnerships, equitable protocols, and targeted programming to ensure that forests and trees are planted, preserved, and protected in all neighbourhoods regardless of social, ethnic, or economic demographics						
Land Acquisition						
The acquisition of new parks and protected areas						
Connectivity between parks and public spaces						
Partnerships to acquire and deliver parks and public spaces						
Climate Resilience						
Designing the community to be more resilient to a changing climate including protecting natural areas and habitats, increasing park space and tree canopy cover, and reducing energy consumption by building energy-efficient neighbourhoods						

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
Green infrastructure strategies to mitigate the effects of urban heat islands, ecological disruption, and social/economic disruption due to climate change						
Encouraging collaboration with Indigenous Peoples to incorporate Indigenous knowledge into climate action						
Encouraging the community to take action to mitigate and adapt to climate change						
Investing in trees and green infrastructure to mitigate and adapt to a changing climate on public land, in urban centres, and in new development						
Encouraging the use of adaptive management strategies in municipal operations to cope with uncertain climate conditions						
Reducing the risk of invasive species and diseases in sensitive ecosystems and where they threaten public health, the economy and the environment						
Urban Design						
Land use-specific guidance protecting and integrating nature and greening, including tree planting in both the public and private realm						
Form and character development permit areas that provide guidelines for incorporating high-quality landscape, and streetscape design to support livability, sustainability, and a sense of place						

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
Form and character development permit areas that provide guidelines for the design of streets and open spaces, create visual interest, comfort, and safety for pedestrians, and positively contribute to urban ecology and stormwater management (see Toolkit section 5.2.1 for more details on the use of form and character landscaping guidelines)						
Form and character development permit areas that provide guidelines to ensure the provision of adequate servicing, vehicle access, and parking while minimizing adverse impacts on the comfort, safety and attractiveness of the public realm						
Neighbourhood or area plans that guide future development in an area, including the locations of parks and public spaces and development standards to provide a link between the high-level planning found in an Official Community Plan and the regulatory detail of a zoning bylaw						
Public realm design guidelines that describe outcomes expected for urban centres, including public realm typologies, streetscape components, and expectations for the standard of trees, soils and materials installed in the public realm						

Appendix 4. Worksheet to Review Land Use Bylaws and Development Permit Areas

Planning Tools: Zoning bylaw, landscape and screening bylaw, form and character development permit areas, climate change and energy conservation development permit areas, and development procedures bylaw

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
Landscaping Standards¹ (Toolkit section 5.2.1)						
RECOMMENDED COMPONENTS – Number of trees:						
Tree density requirement by zone or development type, aligned with selected canopy cover targets						
In surface parking lots associated with commercial, industrial, or office uses, a planting requirement of 1 tree per number of parking spaces (e.g., one tree for every 5-6 parking stalls)						
Between land uses, landscape and screening buffers 3 m or larger to accommodate larger tree species						
RECOMMENDED COMPONENTS – Planting standards:						
Tree size requirements establishing no more than 25% small trees at maturity, no less than 50% large trees and medium trees at maturity to make up the difference						

¹ These outcomes could be required in zoning or included as guidelines in a development permit area.

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
A minimum soil volume per tree that is adequate to support it growing to a healthy, mature size, modified for single tree soil volume versus shared tree soil volume						
Reference to meeting or exceeding the Canadian Landscape Standard for installation and maintenance						
Trees species selection from an approved list, and/or reviewed and approved by the local government						
ADDITIONAL OPTIONS:						
Green standard/factor score or sustainability checklist that promotes tree retention (particularly trees of high value to the community or growing in sensitive ecosystems) or planting						
Form and character development permit area landscaping guidelines that support mature trees and forest stand retention and tree planting to achieve community goals (e.g., native plantings, placemaking, shade, energy efficiency, stormwater management) and grow healthy trees						
Guidelines for tree planting for passive solar gain and cooling to reduce energy consumption						
Pervious Surface and Lot Layout Requirements (required in zoning; Toolkit section 5.2.2)						
RECOMMENDED COMPONENTS - Planting area requirement:						
Consolidated pervious areas required by zone or development type aligned with selected canopy cover targets						

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
<u>Or</u> , in low-rise housing zones, a minimum pervious area requirement of a size sufficient to provide 35 m ² per tree as aligned with the selected canopy cover targets						
In zones or land uses with high surface coverage, engineered solutions (i.e., soil cells, structural soil) to achieve soil volume under impervious surfaces or above a structure						
RECOMMENDED COMPONENTS – Building setback for trees:						
At least one setback larger than 3 metres, (preferably larger) in the front or rear to make space for tree planting in the ground, except where smaller setbacks are the preferred design outcome, and the public realm frontage will accommodate large trees (see Toolkit section 5.3.2)						
In zones other than low-rise housing, consider applying setbacks to underground structures, except if boulevard width and location compensate for smaller setbacks (see Toolkit section 5.3.2)						
ADDITIONAL OPTIONS:						
The maximum site coverage retains sufficient pervious surface to support the target tree density						
Parking requirements minimized to allow sufficient pervious surface or parking is built with pervious materials to allow soil volume under the surface						

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
Negotiated Development (Toolkit section 5.2.3)						
Use of amenity density bonusing to protect environmentally sensitive areas, supported by a sustainability checklist or green factor incentive that provides credits based on desirable tree retention or planting in exchange for additional development floor area or density (see section 5.2.1 for examples of green factor scoring systems)						
Comprehensive development zones integrate the relevant requirements to maximize the retention of existing environmental assets, such as setbacks, site coverage, and clustering						
Development Procedures (Toolkit section 5.2.4)						
RECOMMENDED COMPONENTS – Delegated minor variances						
Delegated minor variances are enabled and define the setback, height, and parking variances that applicants must consider retaining significant trees						
PROCEDURAL CONSIDERATIONS						
A requirement for a survey by a BC Land Surveyor that includes the location of existing trees, protected areas, or natural areas, water bodies and water courses as part of an initial application						

Appendix 5. Worksheet to Review Development, Subdivision, and Servicing Bylaws

Planning Tools: Development, subdivision and servicing bylaw

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
Procedural Considerations (Toolkit section 5.3.1)						
A requirement for a survey by a BC Land Surveyor that includes the location of existing trees, protected areas, or natural areas, water bodies and water courses as part of an initial application						
Security or bonding for works and services including landscaping, with return subject to local government verification of total performance of works and services						
Option for the applicant to provide a cash payment alternative for the local government to perform the works and services including boulevard construction and tree planting as part of a broader frontage works construction program						
Requirement of a Landscape Architect to undertake the design, inspection, testing and record keeping of landscaping requirements						

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
Procedural Considerations (Toolkit section 5.3.1)						
RECOMMENDED COMPONENT – Minimum boulevard width for trees:						
Works and service level requirements, and supporting schedules, that require boulevards of sufficient width to support tree planting (>1.5 m without utilities in boulevard, >2.0 m with utilities sharing boulevard), landscaping and trees as standard for most road classifications						
Boulevard located between the curb and sidewalk if seeking canopy closure above the street						
Landscaping Criteria, Standards, and Specifications (Toolkit section 5.3.3)						
RECOMMENDED COMPONENT – Landscaping:						
Requiring a minimum number of street trees based on species size and spacing per linear frontage, encouraging preferred tree size/canopy cover target outcomes by road classification						
Selection and siting of urban trees in pavement to eliminate long term above-ground and below ground conflicts with utilities, buildings and structures, and pedestrian and vehicular traffic						
Tree planting setback distances from intersections, streetlights, utilities, etc. do not prohibit tree planting in most streetscapes						

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
Requiring a minimum soil volume per tree that is adequate to support its growth to a healthy, mature size						
Specifying the basic sod boulevard and median treatments and defining where treatments will be varied based on location (e.g., adjacent to commercial properties, urban centre development permit areas, streetscape improvement plan areas) to provide hard surface materials, soil cells to extend soil volume under hard surfaces, or other landscaping						
Trees and plant species selection from an approved list, and/or reviewed and approved by the local government						
Continuous tree planting trenches encouraged						
Root barriers used when tree pit or boulevard opening width is less than 2 metres						
Irrigation installed where needed and when boulevards are covered with hard surface materials that are not permeable						
Alternatives to tree grates are provided (e.g., bonded gravel, compacted sand)						

Does your plan contain policy direction that addresses the following?	Yes	No	Partially	N/A	Priority to Update?	Notes for update:
Construction standards require at least 1 year maintenance post-planting and a landscape completion certificate prior to acceptance by the municipality						
Supplemental standards to MMCD detail growing medium composition and depth (minimum 0.6 m to preferred 1 m), options for reuse of native topsoil, compost, structural soil, soil cells, planting standards for landscape trees, riparian and restoration planting, stock quality and irrigation systems						
Encourages underground utilities to be aligned and buried to provide a continuous 1 m deep utility-free trench beneath tree planting locations. When the distance from the property line to utilities is insufficient to accommodate a utility-free trench, the difference should be provided as a statutory right-of-way on the adjacent property						
ADDITIONAL OPTIONS:						
Provides standards to enable solutions to maximize retention potential, planting space and quality for tree health, such as perforated curbs curb bulges, suspended slab sidewalk or bike lanes, permeable pavement, siting responsive to site conditions						

To: Regional Planning Committee

From: Stefanie Ekeli, Regional Planner, Regional Planning and Housing Services

Date: March, 15, 2024 Meeting Date: April 5, 2024

Subject: **2023 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver**

RECOMMENDATION

That the MVRD Board:

- a) receive for information the report dated March 15, 2024, titled, “2023 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver”; and
 - b) forward the “2023 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver” and its attachment to member jurisdictions for information with an offer for Council presentations upon request.
-

EXECUTIVE SUMMARY

The 2023 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver found that there has been a substantial increase in child care spaces in the region, from 18.6 spaces per 100 children under 12 in 2019 to 25.1 in 2023. This is a 35 percent increase. The positive results are likely directly related to the significant increase in funding provided from the Provincial and Federal Governments under the ChildCareBC strategy, the notable increase of stand-alone child care strategies in local governments across the region, and other regulatory tools such as zoning and financial incentives. Metro Vancouver updates the Survey every four years. The 2023 update of the Survey reflects the current inventory of the total number of child care spaces in the region. In addition, the municipal mail-out survey that is undertaken in support of the update was expanded to capture a more robust view and a better understanding of the challenges of current child care planning in the region.

PURPOSE

To share the results of the 2023 Survey of Licensed Child Care Spaces in Metro Vancouver with the Regional Planning Committee and MVRD Board to support local government planning for child care.

BACKGROUND

The Survey of Licensed Child Care Spaces and Policies in Metro Vancouver is updated every four years. The first two iterations of the Survey were published by Metro Vancouver in 2011 and subsequently updated and released in 2015 and 2019 (References 1,2, and 3). The 2023 Survey update expands on the 2019 iteration by establishing a Peer Review Group to help inform and guide the project, and to ensure data accuracy and comprehensiveness in capturing a more robust view and a better understanding of the challenges of current child care planning in the region (Attachment 1). The 2023 Survey expands analysis to include an assessment on the number of child care spaces per 100 children for the three Group Child Care licence types.

Child Care Planning in British Columbia

In British Columbia, child care planning is a shared responsibility among the BC Government, health authorities, local governments, First Nations, the not-for-profit sector, and the private sector. The role of the BC government has become increasingly important since 2018 with the launch of the ChildCareBC strategy. With this strategy, the Province and the Federal Government have boosted funding for local governments, Indigenous communities, not-for-profit organizations, families, and child care workers to support child care space creation, to make child care more affordable for families, and to increase the recruitment and retention, and enhance wages, of Early Childhood Educators.

Data contained in the 2023 Survey is intended to help support child care planning work, including applications for funding through ChildCareBC, in Metro Vancouver municipalities.

KEY FINDINGS OF THE 2023 SURVEY

The 2023 Survey provides a more robust discussion on the findings of the estimated and projected number of children aged 12 and under, and the number of child care spaces in Metro Vancouver.

The following are the key findings:

- The number of children under the age of 12 is expected to continue to grow slightly in the near term by 1.1 percent (from an estimated 323,796 in 2023 to 327,397 in 2028);
- The number of child care spaces in Metro Vancouver grew by 35 percent between 2019 and 2023 (up from 60,970 to 81,264);
- As of 2023, Metro Vancouver has on average 25.1 spaces per 100 children 12 and under, which is an increase of 6.5 spaces per 100 children aged 12 and under from 2019 (35 percent increase, but remains slightly below the 2021 national average of 29 spaces but above the BC average of 21 spaces);
- As of 2023, Metro Vancouver has an average of 13.9 spaces per 100 children aged 0-3 (Group Child Care under 36 months), 38.7 spaces per 100 children aged 3-5 (Group Child Care 30 months to School Age), and 9 spaces per 100 children 5-12 (Group Child Care School Age);
- The survey results show that the major challenges in the provision of child care are mainly:
 - Lack of funding to cover capital operating and maintenance costs and operator lease / rent challenges;
 - Staffing shortages / low wages for child care workers;
 - Insufficient provincial funding to build new spaces; and
 - Persistent demand for new child care spaces;
- 16 respondents support child care through building space (e.g., rent-free, reduced lease, or market lease);
- 16 respondents have staff resources dedicated to child care work and 9 respondents have a dedicated staff person specifically for child care work; and
- 14 of 21 respondents have \$10/day child care facilities within their communities offering affordable child care to families.

MUNICIPAL MAIL-OUT SURVEY RESULTS

Local governments play a key role in enabling an adequate supply of child care spaces. One way that local governments can support the creation of child care spaces could include developing a local child care plan, strategy or bylaw that outlines municipal policies for child care provision. According to the 2023 Municipal Mail-out Survey, 15 of 20 (75 percent) of survey respondents have a stand-alone child care strategy, which is substantially higher than reported in 2019 (8 of 21 respondents, or 38 percent). In addition: 14 of 19 respondents noted addressing child care in Official Community Plans; 7 of 16 respondents address child care in Social Plans; 15 of 21 respondents identify child care as a community amenity; and 4 of 20 survey respondents identified that their local government has a Child Care Bylaw.

Although child care licensing is regulated by the Health Authorities, local governments also play a role in regulating child care through zoning and business licensing. Of the survey respondents, the majority of local governments permit child care in residential, commercial and institutional zones, and approximately half permit child care in industrial zones. The survey results also indicate that local governments often use financial incentives to enhance child care space creation which include the use of municipal grants, property tax exemptions or tax dollars used to support operation and maintenance fees, developer incentives, and the use of municipal building space by child care providers. In some cases, local governments also own child care facilities and/or partner with child care providers for the operation of facilities. The survey results show that the majority of local governments own child care facilities, and roughly half partner with child care providers for their operation.

The results of the Municipal Mail-out Survey signify that local governments have placed a greater emphasis on increasing the number of child care spaces within their communities since the 2019 survey through use of available regulatory tools and financial resources and incentives. While the results from the 2023 Survey show a positive outlook for child care space creation in the region, local governments still face challenges to meet child care needs including lack of funding, staffing shortages / wages, and persistent demand.

ALTERNATIVES

1. That the MVRD Board:
 - a) receive for information the report dated March 15, 2024, titled, “2023 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver”; and,
 - b) forward the “2023 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver” and its attachment to member jurisdictions for information with an offer for Council presentations upon request.

2. That the Regional Planning Committee receive for information the report dated March 15, 2024, titled “2023 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver”, and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

There are no financial implications to this report. The report was completed as part of the Board approved Regional Planning 2023 work plan.

NEXT STEPS

It is recommended that copies of the 2023 Survey of Licensed Child Care Spaces in Metro Vancouver be forwarded to all member jurisdictions for information. The final report will also be posted on the Metro Vancouver website for download. Staff are available to present the report to Councils upon request.

CONCLUSION

Regional Planning has prepared the *2023 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver*. The report updates previous child care surveys prepared by Metro Vancouver in 2011, 2015, and 2019. The 2023 Survey found that there has been a substantial increase in child care spaces in the region, from 18.6 spaces per 100 children under 12 in 2019 to 25.1 in 2023, which is a 35 percent increase. This substantial increase can be correlated to the significant increase in funding provided from the Provincial and Federal Governments under the ChildCareBC strategy. The 2023 Survey also found that local governments are taking a range of approaches to facilitate child care provision and operation in their local context but are still facing various challenges associated with the provision of child care. This information is intended to support member jurisdictions and local governments in planning for complete communities and supporting the economy, thereby supporting the implementation of Goals 1 and 2 of *Metro 2050*.

ATTACHMENT

1. 2023 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver

REFERENCES

1. [A Municipal Survey of Child Care Spaces and Policies in Metro Vancouver, 2011](#)
2. [A Municipal Survey of Child Care Spaces and Policies in Metro Vancouver, 2015](#)
3. [2019 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver](#)
4. [ChildCareBC, Province of British Columbia](#)

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2023 Survey of Licensed Child Care Spaces in Metro Vancouver

December 2023

Prepared by: Metro Vancouver Regional Planning

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: ǰíǰǰǰ' (Katzie), ǰǰǰǰǰǰǰ (Kwantlen), ǰǰǰǰǰǰǰ (Kwikwetlem), máthxwi (Matsqui), xǰǰǰǰǰǰǰ (Musqueam), qiqéyt (Qayqayt), se'mya'me (Semiahmoo), Skǰǰǰǰǰǰǰ (Squamish), scǰǰǰǰǰǰǰ mǰǰǰǰǰǰǰ (Tsawwassen) and sǰǰǰǰǰǰǰ (Tseil-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.

Thank you

Many thanks to the members of the Peer Review Group who helped guide and inform this study. We are grateful to the following individuals who participated in the Peer Review Group and shared their expertise and knowledge in support of the project:

- Chris Duggan, Acting Manager, Community and Social Development, City of Richmond
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- Margie Manifold, Senior Social Planner, City of Burnaby
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- Asuka Yoshioka, Social Planner, Child Care, City of Vancouver
- Marylyn Chiang, Senior Policy Analyst, Union of BC Municipalities
- Tracy Hoskins, Project Lead, Wellness Promotion, Fraser Health Authority
- Annette Dellinger, Regional Licensing Manager, Fraser Health Authority
- Sally McBride, Senior Policy Lead, Vancouver Coastal Health Authority
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Contents

- Introductions and Key Findings _____ 4
 - Introduction _____ 4
 - Key Findings of the 2023 Survey _____ 6
- Provincial Role in Child Care _____ 7
 - Child Care Regulation in British Columbia _____ 7
 - ChildCareBC Program _____ 8
- Data Sources _____ 9
- Demographic Profile of Metro Vancouver’s Children _____ 10
- Current Inventory of Child Care Spaces in Metro Vancouver _____ 14
 - 2023 Inventory of Child Care Spaces of Children 12 and under _____ 14
 - 2023 Inventory of Child Care Spaces – Group Child Care
Licence Types _____ 18
 - Group Child Care (under 36 months) _____ 18
 - Group Child Care (30 months to School Age) _____ 20
 - Group Child Care (School Age) _____ 22
- Child Care Access in British Columbia _____ 24
- Local Government Child Care Policies _____ 25
- Zoning and Business Licence Bylaws for Child Care Facilities _____ 26
- Local Government Financial Support and Resources for Child Care Providers _____ 29
- Municipal Child Care Operations _____ 30
- ChildCareBC \$10/Day Child Care Facilities _____ 31
- Local Government Challenges in Child Care Provision _____ 32
- Conclusions _____ 33
- Appendices _____ 34
 - Appendix A – Child Care Space Inventory _____ 34
 - Appendix B – Municipal Survey of Child Care Policies and Initiative _____ 36
 - Appendix C – Regulated Child Care Spaces by Province/Territory and
Percentage of Children (0-12) for whom there is a Regulated Child Care Space _____ 40
 - Appendix D – Licensed Child Care Categories in British Columbia _____ 41



Introductions and Key Findings

Introduction

Access to quality child care is vital to the well-being of working families and children, is a fundamental ingredient for regional economic prosperity, and is a critical component of complete and equitable communities. Access to convenient and affordable child care supports families in many ways, enabling parents to work or pursue education outside the home, and quality care in early childhood supports school readiness and healthy child development. Child care can often be a major household expense for families, and thus affordability of child care is of critical importance. Child care availability is also essential for economic development in the region – lack of appropriate, accessible, and affordable child care can negatively impact employee recruitment

and retention which in turn stunts productivity as well as the financial wellbeing of families. For these reasons, child care supply, accessibility, quality, and affordability that keeps up with growth continues to be priority issues in Metro Vancouver.

Metro 2050, the Regional Growth Strategy, sets out the long-term regional vision for livability, sustainability and prosperity. It includes the following two strategies and two specific policies, which are new from *Metro 2040*, that require Metro Vancouver to support member jurisdictions to better plan for child care and adopt policies that advance the creation of child care spaces in compact, complete communities:



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

Member Jurisdictions will:

- 1.2.24 Adopt Regional Context Statements that:
- vi) *consider support for the provision of child care spaces in Urban Centres and Frequent Transit Development Areas;*

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

Metro Vancouver will:

- 1.3.1 *Support member jurisdictions and work with First Nations and other agencies in developing resilient, healthy, connected, and complete communities through regional strategies, research, and best practices that:*
- a) *promote greater local access to affordable community services and child care, healthy food, and public spaces (including regional parks and greenways);*

Member Jurisdictions will:

- 1.3.7 *Adopt Regional Context Statements that:*
- 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.*

The role of the Province in the development and provision of child care spaces has become increasingly important since 2018. The Province provides operating funds, child care subsidies and capital funding through the ChildCareBC strategy, which was launched in 2018. Under the ChildCareBC strategy, the Province, along with the Federal Government, have boosted funding for local governments, Indigenous communities, not-for-profit organizations, families, and child care workers to support child care space creation, to make child care more affordable for families, and to increase the recruitment and retention, and enhance wages, of Early Childhood Educators (ECE). The Province also licenses and regulates child care facilities through the

Health Authorities, and liaises with local governments and child care providers. In 2022, the Province shifted the responsibility of child care into the Ministry of Education and Child Care, which signified important early learning opportunities and support for the future educational success of children.

Local governments also play a significant role in the provision of child care spaces. Local governments regulate land use and development, which affects the size, location, and operation of child care facilities much of which is not regulated by the Province through health and safety regulations or *BC Building Code* requirements. Local governments also aim to facilitate the provision of additional quality child care spaces in a number of ways, in the right locations to match their growing populations.

Community stakeholders including not-for-profit and private operators, developers, and parents also play important roles in the development and operation of child care facilities. The *2023 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver (2023 Survey)* is concerned primarily with the municipal role in child care, and it is prepared as a resource for municipal government planners and policy makers. Therefore, this report presents an up-to-date inventory of child care spaces in the region and the findings of a region-wide municipal survey of policies and regulations relating to the provision of child care spaces.

The 2023 Survey was completed with the guidance and support of a child care expert Peer Review Group, which comprised staff representatives from municipalities, Health Authorities, the Union of British Columbia Municipalities, and in cooperation with the members of the Regional Planning Advisory Committee Social Issues Subcommittee. The intent of the Peer Review Group was to help inform and guide the project, to ensure for data accuracy and to update the 2019 municipal survey to capture a more robust view of and to better understand the challenges of current child care planning in the region.



Specifically, the 2023 Survey highlights the number of children 0-12, the number of all child care spaces, the number of child care spaces for the three group child care licence types, and local government policies and resources that aim to facilitate and enhance the supply of child care spaces in the region. These include: planning policies, zoning regulations, business licence requirements and fiscal actions.

Appendix A provides a detailed inventory of child care spaces, by community, using data from the Vancouver Coastal and Fraser Health Authorities collected in May 2023. Appendix B summarizes the relevant zoning, planning and regulatory policies and financial contributions. Appendix C shows the number of regulated spaces available per 100 children under 12 by province and territory, as reported by the 2021 *Early Childhood Education and Care in Canada* report.

Key Findings of the 2023 Survey

- The number of children under the age of 12 is expected to continue to grow slightly in the near term by 1.1 percent (from an estimated 323,796 in 2023 to 327,397 in 2028).
- As of 2023, the number of child care spaces grew by 35 percent (up from 60,970 in 2019 to 81,264 in 2023) in Metro Vancouver.
- As of 2023, Metro Vancouver has on average 25.1 spaces per 100 children 12 and under, which is an increase of 6.5 spaces per 100 children 12 and under from 2019 (35 percent increase), but remains slightly below the 2021 national average of 29 spaces but above the BC average of 21 spaces.
- As of 2023, Metro Vancouver has an average of 13.9 spaces per 100 children 0-3 (Group Child Care under 36 months), 38.7 spaces per 100 children 3-5 (Group Child Care 30 months to School Age), and 9 spaces per 100 children 5-12 (Group Child Care School Age).
- The survey results show that major challenges in the provision of child care are mainly:
 - Lack of funding to cover capital operating and maintenance costs and operator lease/rent challenges;
 - Staffing shortages / low wages for child care workers;
 - Insufficient provincial funding to build new spaces;
 - Persistent demand for new child care spaces.
- 15 respondents have a standalone child care strategy and identify child care facilities as a community amenity in the development approvals process.
- 5 respondents have a standalone child care bylaw for the provision of child care.
- 16 respondents support child care through the provision of local governments building space (e.g., rent-free, reduced lease, or market lease).
- 16 respondents have staff resources dedicated to child care work and 9 respondents have a dedicated staff person specifically for child care work.
- 7 respondents offer grants for child care capital projects; 3 offer grants for child care operating costs; and 7 offer property tax exemptions for child care provision.
- 14 of 21 respondents have \$10/child care facilities within their communities offering affordable child care to families.

Provincial Role in Child Care

Child Care Regulation in British Columbia

The Province of British Columbia regulates licensed child care facilities under the *Community Care and Assisted Living Act*, *Child Care Licensing Regulation*, and the standards of practice. There are four broad types of child care in British Columbia: Licensed, Registered Licence-Not-Required, Licence-Not-Required, and In-Child’s-Own Home Care (Table 1). Only licensed child care spaces are inventoried in this report.

Under the *Community Care and Assisted Living Act and Child Care Licensing Regulation*, Health Authorities are legislated to issue child care licences, inspect facilities, suspend or cancel licences and investigate complaints. In British Columbia, there are ten different categories for licensed care, which are summarized in [Appendix D](#). A change in the 2023 Survey from the 2019 report is the introduction of two new licensed child care categories in 2022: School Age Care on School Grounds and Recreational Care.

TABLE 1: TYPES OF CHILD CARE IN BRITISH COLUMBIA

CHILD CARE TYPE	REGULATORY REQUIREMENTS
Licensed	Monitored and regularly inspected by regional health authorities; they must meet specific requirements for health and safety, staffing qualifications, record keeping, space and equipment, child-to-staff ratios, and programming.
Registered Licence-Not-Required	Registered licence-not-required child care providers are unlicensed but have registered with a Child Care Resource and Referral Centre. To become a registered licence-not-required provider, operators must have completed a criminal records check, character references, a home safety assessment, first aid training, and child care training. Licence-not-required child care providers are allowed to care for up to two children (or a sibling group) who are not related to them.
Licence-Not-Required Child Care	Unlicensed child care providers can operate legally in BC and are allowed to care for up to two children (or a sibling group) who are not related to them; they may be operating illegally if they have more children in their care than permitted. There is no monitoring or inspection and no health or safety standards.
In-Child’s-Own Home Care	This type of unlicensed care is when parents arrange for child care of their own child within their own home – like a nanny, family member, or a child-minder. There are no legal requirements for monitoring this type of care.



ChildCareBC Program

In response to the lack of availability and affordability of licensed child care for families in British Columbia, the Province launched the ChildCareBC program with the aim to create universal child care that is affordable and available for all families. Launched in 2018, the ChildCareBC program is the platform through which the investments and partnerships between the Government of Canada and the Province of British Columbia are implemented. Through the Early Learning and Child Care Agreement, a bi-lateral agreement between the Province of British Columbia and the Government of Canada, the Province has committed to invest \$5.2 billion in child care from 2018-2025 and the Federal government has committed to investing a total of \$3.2 billion from 2021-2026.¹

ChildCareBC offers various funding programs to support families, local governments, Indigenous communities, not-for-profit organizations, and child care workers to enhance the quality, affordability, accessibility, and inclusivity of child care. Those programs include:

- New Spaces Fund Primary Stream and School Age Care on School Grounds Stream;
- \$10/day ChildCareBC Centre Program;

- Child Care Operating Funding:
 - Child Care Fee Reduction Initiative;
 - ECE Wage Enhancement Program;
- Maintenance Fund; and,
- Aboriginal Supported Child Development and Supported Child Development programs.

To date, the ChildCareBC program has been highly successful for both creating new spaces and making child care affordable for families. Since 2018, the Metro Vancouver region has seen an increase of 68,640 child care spaces funded through the New Spaces Fund and the \$10/day ChildCareBC Centre Program.² In addition, over 2000 Indigenous led child care spaces were created in British Columbia through ChildCareBC New Spaces Fund. In terms of affordability, the Province reached its goal to cut fees for child care by 50 percent, largely due part by the child care fee reduction initiative and expansion of the \$10/day ChildCareBC Centre program. Lastly, to further advance the goal of universal child care, the responsibility of child care moved from the Ministry of Child and Family Development to the newly named Ministry of Education and Child Care in April 2022. This shift signalled the need to bring more certainty and reliability to child care and also the need to recognize child care as a core service of government and education.

¹ Government of British Columbia. "B.C. Reaches Milestone in Newly Funding Child Care Spaces." May 2, 2022.

² Government of British Columbia. B.C. Child Care Data and Reports. October 3, 2023.

Data Sources

Child Care Spaces: In British Columbia, health authorities are responsible for licensing child care. To support the 2023 Survey, Vancouver Coastal Health and Fraser Health Authorities provided the data for the Metro Vancouver region (current as of May 2023). The 2023 Survey uses data of licensed facilities, and does not include child care facilities located on First Nations reserve lands with the exception of Tsawwassen First Nation.

Child Care Policies: Local governments develop policies, land use plans, bylaws, and business licensing requirements for child care. In Metro Vancouver there are 20 municipalities, one Treaty First Nation (Tsawwassen First Nation), and one electoral area (Electoral Area A). Within Electoral Area A, University of British Columbia (UBC) Campus and Community Planning is the entity responsible for land use planning and licensing on campus while planning and licensing in the unincorporated University Endowment Lands (UEL) is conducted by a manager appointed by the Ministry of Municipal Affairs. The remaining areas of Electoral Area A are administered by Metro Vancouver. Child care policies are reported for UBC Campus and UEL separately.

Number of Children: Metro Vancouver's Regional Planning and Housing Services Department provided data on the estimated number of children by community for 2023 and projected for 2028.

Data for small communities including Tsawwassen First Nation, UBC Campus, UEL, and the Villages of Lions Bay, Anmore, and Belcarra was not available in previous child care inventories. In the 2019 and 2023 version of the Survey this data is provided, where available. Note: due to differences in the number of communities surveyed between 2011, 2015, 2019, and 2023, the data is not always directly comparable over time.



Demographic Profile of Metro Vancouver's Children

The estimated number of children under the age of 12 in Metro Vancouver is expected to grow slightly in the near term. In 2019, there was an estimated total of 325,142 children under the age of 12 living in the Vancouver Census Metropolitan Area (CMA), and in 2023 that number is estimated to be 323,796, which is a decrease of 1,346 children aged 0-12 (Table 2, and Table 3 for the 2023 estimated population of children by age group). By the year 2028, the projected number of children aged 0-12 is projected to grow by 3,601 to approximately 327,397, or 1.1 percent (Table 2). Nearly half of the projected growth of children under the age of 12 is expected to occur in Surrey, Vancouver, Burnaby, and Richmond, which is the same trend as seen in the 2019 Survey.

The reasons for a decrease in the estimated number of children under the age of 12 from 2019-2023 can be associated with various factors. Metro Vancouver projects population growth using an age cohort model to project the number of children aged 0-12, which was updated in 2023 to reflect data from the 2021 Census and historical data and trends. The Age Cohort Model establishes population by gender and single year of age for a given base year. Then for every subsequent year, the population for that single year of age is predicted by estimating the change in natural increase and migration trends. Demographic components of population growth are expected to generally follow historical trends over the projection period.³

By comparing the analysis of the 2016 and 2021 Census years to assess the accuracy of the 2023 projections and better understand the high-level trends, one can see that the results in Table 2 are in line with Statistics Canada's projections, which show a -0.3 percent decrease in children aged 0-5 and an overall increase of children aged 0-12 by 2 percent between 2016 and 2021 (Table 4).⁴ Because the children in the 0-5 age cohort will be in the 5-10 age range in 2028, we can expect a slight decrease in the 0-5 age cohort by 2028. Another factor that may be a cause for the decline in number of children aged 0-12 may be a change in fertility rates and number of women of childbearing age given these factors determine the number of newborns in any given year. Between 2019 and 2022, there was a decrease in fertility rates at the regional and municipal levels. To estimate future births, the analysis applies historical data and assumes the change in these historical rates will continue till the year of 2051. This results in lower rates compared to previous projections, and possibly leading to fewer newborns being born over the near-term and therefore, a lower population growth in children aged 0-5.

³ Metro Vancouver Growth Projections – Methodology Report. June 2021.

⁴ Statistics Canada. Table 42-10-0012-01 Number of children in Canada

TABLE 2: CHANGE IN ESTIMATED NUMBER OF CHILDREN UNDER 12 IN METRO VANCOUVER (FROM 2019-2023) AND CHANGE IN PROJECTED NUMBER OF CHILDREN UNDER 12 IN METRO VANCOUVER (2023 TO 2028)

ESTIMATED NO. OF CHILDREN 12 AND UNDER					PROJECTED NO. OF CHILDREN 12 AND UNDER			
Geographic Area	2019 Est. No. of Children*		2023 Est. No. of Children*		Change in Est. No. of Children (2019-2023)	2028 Proj. No. of Children*		Change in No. of Children (2023-2028)
	No.	%	No.	%		No.	%	
Anmore	249	0.1%	266	0.1%	17	237	0.1%	-29
Belcarra	45	0.0%	25	0.0%	-20	35	0.0%	10
Burnaby	29,319	9.0%	29,056	9.0%	-263	30,229	9.3%	1,173
Coquitlam	19,810	6.1%	19,118	5.9%	-692	19,257	5.9%	139
Delta	13,441	4.1%	13,573	4.2%	132	12,643	3.9%	-930
Langley City	3,735	1.1%	4,301	1.3%	566	4,564	1.4%	263
Langley Township	19,585	6.0%	21,108	6.5%	1,523	20,385	6.3%	-723
Lions Bay	157	0.0%	165	0.1%	8	170	0.1%	5
Maple Ridge	12,394	3.8%	13,954	4.3%	1,560	12,906	4.0%	-1,048
New Westminster	8,596	2.6%	9,206	2.8%	610	10,361	3.2%	1,155
North Vancouver City	6,921	2.1%	6,832	2.1%	-89	8,161	2.5%	1,329
North Vancouver District	12,141	3.7%	12,267	3.8%	126	10,572	3.3%	-1,695
Pitt Meadows	2,825	0.9%	2,858	0.9%	33	2,571	0.8%	-287
Port Coquitlam	8,473	2.6%	8,207	2.5%	-266	7,709	2.4%	-498
Port Moody	4,976	1.5%	4,519	1.4%	-457	4,147	1.3%	-372
Richmond	24,713	7.6%	24,507	7.6%	-206	24,280	7.5%	-227
Surrey	82,295	25.3%	81,034	25%	-1,261	81,586	25.1%	552
Tsawwassen First Nation	114	0.0%	334	0.1%	220	307	0.1%	-27
UBC	1,736	0.5%	1,951	0.6%	215	1,949	0.6%	-2
UEL	403	0.1%	394	0.1%	-9	356	0.1%	-38
Vancouver	67,003	20.6%	63,300	19.5%	-3,703	68,822	21.2%	5,522
West Vancouver	4,823	1.5%	5,114	1.6%	291	4,434	1.4%	-680
White Rock	1,390	0.4%	1,707	0.5%	317	1,716	0.5%	9
Vancouver CMA	325,142	100%	323,796	100%	-1,346	327,397	100%	3,601

* Source: Metro Vancouver



TABLE 3: ESTIMATED POPULATION OF CHILDREN AGE 12 AND UNDER, BY AGE GROUP, IN METRO VANCOUVER, 2023

GEOGRAPHIC AREA	2023 ESTIMATED NO. OF CHILDREN 12 AND UNDER*		2023 ESTIMATED POPULATION AGE 12 AND UNDER BY AGE GROUPS			
	No.	%	0 to 2 years	3 to 5 years	6 to 9 year	10 to 12 years
Anmore	266	0.1%	42	42	100	83
Belcarra	25	0.0%	8	5	12	0
Burnaby	29,056	9.0%	6,485	6,507	9,171	6,894
Coquitlam	19,118	5.9%	3,653	3,952	6,456	5,057
Delta	13,573	4.2%	2,367	2,793	4,619	3,795
Langley City	4,301	1.3%	1,062	1,034	1,283	922
Langley Township	21,108	6.5%	4,122	4,553	7,049	5,384
Lions Bay	165	0.1%	25	36	55	49
Maple Ridge	13,954	4.3%	2,644	3,070	4,797	3,442
New Westminister	9,206	2.8%	2,314	2,171	2,768	1,954
North Vancouver City	6,832	2.1%	1,845	1,508	1,934	1,545
North Vancouver District	12,267	3.8%	1,961	2,450	4,256	3,599
Pitt Meadows	2,858	0.9%	543	649	962	704
Port Coquitlam	8,207	2.5%	1,537	1,872	2,720	2,078
Port Moody	4,519	1.4%	857	1,000	1,467	1,195
Richmond	24,507	7.6%	4,573	5,368	8,393	6,174
Surrey	81,034	25.0%	16,479	17,448	26,074	21,032
Tsawwassen First Nation	334	0.1%	81	78	105	71
UBC	1,951	0.6%	313	423	687	528
UEL	394	0.1%	64	87	137	105
Vancouver	63,300	19.5%	15,820	14,828	18,694	13,958
West Vancouver	5,114	1.6%	654	843	1,884	1,734
White Rock	1,707	0.5%	344	349	548	465
Vancouver CMA	323,796	100%	67,793	71,066	104,171	80,768

* Source: Metro Vancouver

TABLE 4: POPULATION OF CHILDREN COMPARISON ANALYSIS BETWEEN 2016 AND 2021 CENSUS DATA

GEOGRAPHIC AREA	CHILDREN AGED 0-12*			CHILDREN AGED 0-5*		
	2016	2021	Change%	2016	2021	Change%
Anmore	310	280	-0.1	90	95	0.06
Belcarra	70	55	-0.21	20	20	0
Burnaby	27160	27965	0.03	12950	12725	-0.02
Coquitlam	19090	18935	-0.01	8325	7880	-0.05
Delta	13775	13790	0	5535	5530	0
Langley City	3445	3935	0.14	1650	1930	0.17
Langley Township	18610	20755	0.12	8085	9055	0.12
Lions Bay	180	160	-0.11	65	70	0.08
Maple Ridge	12445	13850	0.11	5535	6130	0.11
New Westminister	7770	8675	0.12	3860	4250	0.1
North Vancouver City	6235	6295	0.01	2935	2875	-0.02
North Vancouver District	12490	12620	0.01	4985	4895	-0.02
Pitt Meadows	2750	2845	0.03	1265	1270	0
Port Coquitlam	8380	8230	-0.02	3630	3610	-0.01
Port Moody	5195	4650	-0.1	2270	1935	-0.15
Richmond	23395	23955	0.02	10555	10525	0
Surrey	79835	80260	0.01	35210	34010	-0.03
Tsawwassen First Nation	80	290	2.63	30	150	4
Electorial Area A**	2045	2300	0.12	2045	2300	0.12
Vancouver	61550	61145	-0.01	29320	28555	-0.03
West Vancouver	5045	5260	0.04	1615	1755	0.09
White Rock	1515	1665	0.1	655	680	0.04
Vancouver CMA	311,370	317,915	2%	140,630	140,245	-0.30%

* Source: Metro Vancouver

**Includes UBC and UEL



Current Inventory of Child Care Spaces in Metro Vancouver

Significant investments and progress have been made since 2019 for creating child care spaces in the region, reducing fees for families, enhancing the wage grid for child care workers, and enhancing the quality of child care. It has been 5-years since the launch of ChildCareBC program and as the results in the following sections illustrate that the increase in child care spaces can be correlated with the investments the Province and Federal Governments have contributed since the 2019 Survey of Licensed Child Care Spaces and Policies in Metro Vancouver was completed.

2023 Inventory of Child Care Spaces of Children 12 and under

On average, there are 25.1 child care spaces per 100 children aged 12 and under in Metro Vancouver (Table 5). In 2019 there were 18.6 spaces per 100 children aged 12 and under on average, which is an increase of 35 percent over the previous four years. The 2023 average is also much higher than previous reports where on average there were 16 spaces per 100 children reported in 2011 and 18.5 spaces per 100 children reported in 2015 (Table 6).

The ratio of children to child care spaces varies across Metro Vancouver jurisdictions with the highest ratios seen in UBC (51.1 spaces per 100 children) and Tsawwassen First Nation (at 49.1 spaces per

100 children), and the lowest ratios seen in Belcarra (0 spaces per 100 children) and the UEL (12.2 spaces per 100 children). As shown in Table 5, all but two local governments in the region have increased the number of child care spaces. Both the Tsawwassen First Nation and Village of Lions Bay have fewer spaces per 100 children from 2019 to 2023, noting however, Tsawwassen First Nation still has the highest ratio of children to child care spaces.



TABLE 5: ESTIMATED NUMBER OF CHILDREN (0-12) AND CHILD CARE SPACES IN METRO VANCOUVER, 2023

GEOGRAPHIC AREA	2023 ESTIMATED NO. OF CHILDREN 12 AND UNDER*		ESTIMATED NO. OF CHILD CARE SPACES **		CHILD CARE SPACES PER 100 CHILDREN 12 AND UNDER
	No.	%	No.	%	
Anmore	266	0.1%	91	0.1%	34.2
Belcarra	25	0.0%	0	0.0%	0.0
Burnaby	29,056	9.0%	6,433	7.9%	22.1
Coquitlam	19,118	5.9%	5,299	6.5%	27.7
Delta	13,573	4.2%	3,041	3.7%	22.4
Langley City	4301	1.3%	1,280	1.6%	29.8
Langley Township	21,108	6.5%	5,303	6.5%	25.1
Lions Bay	165	0.1%	40	0.0%	24.2
Maple Ridge	13,954	4.3%	3,316	4.1%	23.8
New Westminster	9206	2.8%	3,164	3.9%	34.4
North Vancouver City	6,832	2.1%	1,930	2.4%	28.2
North Vancouver District	12,267	3.8%	4,156	5.1%	33.9
Pitt Meadows	2,858	0.9%	1,260	1.6%	44.1
Port Coquitlam	8207	2.5%	2,794	3.4%	34.0
Port Moody	4,519	1.4%	1,277	1.6%	28.3
Richmond	24,507	7.6%	8,521	10.5%	34.8
Surrey	81,034	25.0%	14,795	18.2%	18.3
Tsawwassen First Nation	334	0.1%	164	0.2%	49.1
UBC	1,951	0.6%	996	1.2%	51.1
UEL***	394	0.1%	32	0.0%	8.1
Vancouver	63,300	19.5%	15,203	18.7%	24.0
West Vancouver	5114	1.6%	1,732	2.1%	33.9
White Rock	1,707	0.5%	437	0.5%	25.6
Vancouver CMA	323,796	100.0%	81,264	100.0%	25.1

* Source: Metro Vancouver

** Source: Fraser Health and Vancouver Coastal Health (data as of May 2023)

*** Source: Licensed spaces received directly from Child Care Centres in UEL (data as of September 2023). UEL does not record data.





TABLE 6: COMPARISON FROM 2011-2023 OF ESTIMATED NUMBER OF CHILDREN AND CHILD CARE SPACES

	2011	2015	2019	2023
VANCOUVER CMA CHILD CARE SPACES PER 100 CHILDREN 12 AND UNDER	16	18.5	18.6	25.1

Metro Vancouver is below the 2021 national average of 29 spaces per 100 children but is ahead of the British Columbia 2021 average of 21 regulated spaces per 100 children. The ratio of regulated child care spaces to 100 children aged 12 and under varies significantly by province, with the highest rate found in Quebec (54 spaces per 100 children) and the lowest rate found in Saskatchewan (10 spaces per 100 children), which remains unchanged from the 2019 reporting.⁵ Appendix C shows the national data by province.

In 2011 and 2015 data was not available for a number of the smaller communities in the region including the Villages of Anmore, Belcarra, and Lions Bay, and Tsawwassen First Nation. Additionally, in 2011 and 2015 child care spaces at UBC and on UEL were

reported under Vancouver. Excluding the smaller communities listed above, the number of child care spaces region-wide has increase by 20,329 spaces between 2019 and 2023, and by 33,603 between 2011 and 2023 (from 47,547 to 81,060) (Table 7). Looking at the Vancouver Census Metropolitan Area (CMA), including the smaller municipalities, the number of child care spaces has increased by 20,644 spaces between 2019 and 2023 (Table 7).

The rate of increase in spaces was much higher between 2019 and 2023 compared to the years between 2011 and 2019. This is likely directly correlated with the implementation of the ChildCareBC program and the heightened amount of provincial and federal funding contributed to enhance child care space creation.

5 Early Childhood Education and Care in Canada 2021 (13th edition, April 2023), Childcare Resource and Research Unit.

TABLE 7: ESTIMATED CHANGE IN CHILD CARE SPACES (2011, 2015, 2019, 2023)

GEOGRAPHIC AREA	2011 SPACES	2015 SPACES	2019 SPACES	2023 SPACES
Anmore*	Data not available	Data not available	83	91
Belcarra*	Data not available	Data not available	0	0
Burnaby	4,456	4,820	5,062	6,433
Coquitlam	3,369	3,719	4,095	5,299
Delta	2,097	2,260	2,162	3,041
Langley City	197	598	830	1,280
Langley Township	2,502	2,886	3,404	5303
Lions Bay*	Data not available	Data not available	40	40
Maple Ridge	2,205	2,053	2539	3,316
New Westminster	1,337	1,671	2,049	3,164
North Vancouver City	1,256	1,418	1,680	1,930
North Vancouver District	2,988	3,248	3611	4156
Pitt Meadows	500	648	964	1,260
Port Coquitlam	1,714	1,998	2,083	2,794
Port Moody	668	797	1005	1,277
Richmond	4,580	5,462	5,071	8,521
Surrey	6,452	9,675	10,489	14795
Tsawwassen First Nation*	Data not available	Data not available	116	164
UBC	Data not available	Data not available	735	996
UEL	Data not available	Data not available	104	32
Vancouver	Data not available	Data not available	12,758	15,203
Vancouver + UBC + UEL Subtotal**	11,708	14,539	13,597	16,231
West Vancouver	1,142	1,227	1,439	1,732
White Rock	286	348	301	437
Vancouver CMA (excluding smaller communities)*	47,457	57,367	60,464	81,060
Vancouver CMA	not available	not available	60,620	81,264

*In 2011 and 2015 smaller member jurisdictions of Tsawwassen First Nation, Anmore, Belcarra, and Lions Bay were not included.

**In 2011 and 2015 UBC and UEL were counted and reported as part of the City of Vancouver.



2023 Inventory of Child Care Spaces – Group Child Care Licence Types

New to the 2023 Survey is an assessment of the ratio of children to child care spaces for Group Child Care (under 36 months), Group Child Care (30 months to School Age), and Group Child Care (School Age). Access rates were only calculated for the three group child care licence types, because local governments in Metro Vancouver typically only report out on these categories in their child care needs assessment.

It is important to note that the population by age category per licence type is estimated and some ages are rounded up from half ages. For example, population for Group Child Care (30 months to school age) is estimated based on children aged 3-5, given that 30 months is 2.5 years old population estimates were rounded up to age 3 for the purpose of this analysis. For Group Child Care (school age) the age range selected was 5-12 even though some children entering kindergarten may not be 5-years of age upon starting.

Group Child Care (under 36 months)

On average, there are 13.9 spaces per 100 children aged 0-3 in Group Child Care (under 36 months), and in total there are an estimated 12,694 Group Child Care spaces in Vancouver CMA (Table 8). The highest access rates are seen in UBC (45.6 spaces per 100 children aged 0-3), Pitt Meadows (40.3 spaces per 100 children aged 0-3), Tsawwassen (37.4 spaces per 100 children aged 0-3), (Richmond (29.5 spaces per 100 children aged 0-3), and North Vancouver District (25.1 spaces per 100 children aged 0-3). Belcarra, Lions Bay, and UEL have 0 spaces per 100 children aged 0-3, but also have a very low count of children in this category, which implies little need for spaces. Both Vancouver and Surrey have the highest population counts for children aged 0-3 (20,898 and 22,245 respectively) but have two of the lowest number of spaces per 100 children aged 0-3 (Vancouver with 7.5, and Surrey with 9.8) indicating a higher need for more child care spaces in this licence type.



TABLE 8: ESTIMATED NUMBER OF CHILDREN (0-3) AND GROUP CHILD CARE (UNDER 36 MONTHS) SPACES IN METRO VANCOUVER

GEOGRAPHIC AREA	2023 ESTIMATED NO. OF CHILDREN 0-3*		ESTIMATED NO. OF CHILD CARE SPACES - GROUP CHILD CARE (UNDER 36 MONTHS) **		GROUP CHILD CARE (UNDER 36 MONTHS) SPACES PER 100 CHILDREN 0-3
	No.	%	No.	%	No.
Anmore	52	0.1%	8	0.1%	15.4
Belcarra	8	0.0%	0	0.0%	0.0
Burnaby	8,666	9.5%	1,276	10.1%	14.7
Coquitlam	4,949	5.4%	662	5.2%	13.4
Delta	3,235	3.6%	239	1.9%	7.4
Langley City	1,410	1.5%	285	2.2%	20.2
Langley Township	5,542	6.1%	1,023	8.1%	18.5
Lions Bay	40	0.0%	0	0.0%	0.0
Maple Ridge	3,579	3.9%	370	2.9%	10.3
New Westminster	3,034	3.3%	602	4.7%	19.8
North Vancouver City	2,351	2.6%	514	4.0%	21.9
North Vancouver District	2,732	3.0%	686	5.4%	25.1
Pitt Meadows	745	0.8%	300	2.4%	40.3
Port Coquitlam	2,140	2.3%	425	3.3%	19.9
Port Moody	1,159	1.3%	206	1.6%	17.8
Richmond	6,282	6.9%	1,853	14.6%	29.5
Surrey	22,245	24.4%	2,175	17.1%	9.8
Tsawwassen First Nation	107	0.1%	40	0.3%	37.4
UBC	447	0.5%	204	1.6%	45.6
UEL***	92	0.1%	0	0.0%	0.0
Vancouver	20,898	22.9%	1,573	12.4%	7.5
West Vancouver	915	1.0%	204	1.6%	22.3
White Rock	480	0.5%	49	0.4%	10.2
Vancouver CMA	91,108	100%	12,694	100%	13.9

*Source: Metro Vancouver

**Source: Licensed spaces by Fraser Health and Coastal Health, May 2023

***Source: Licensed spaces from Child Care Centres in UEL. UEL does not record data





Group Child Care (30 months to School Age)

On average, there are 38.7 spaces per 100 children aged 3-5 in Group Child Care (30 months to school age). In total, there are an estimated 27,511 Group Child Care spaces in Vancouver CMA (Table 9). The majority of municipalities tend to be above the Vancouver CMA average, with a few resting just below the average. Belcarra and UEL have 0 Group Child Care spaces, but also have very low population count of children in this category which may indicate there is little need for this child care type within these communities. In comparison to the ratio of children aged 0-3 to the number of spaces of Group Child Care (under 36 months) (Table 8), Group Child Care (30 months to school age) shows a much higher

access rate (Table 9). This could be because of the different requirements for staff qualifications and a higher staff to child ratio between the two licence types (see Appendix D for specific requirements). Also, the population of children ages 3-5 is lower by 20,042 (Table 9) than the population of children aged 0-3 (Table 8), indicating that more spaces are needed to accommodate children in the 0-3 age range

TABLE 9: ESTIMATED NUMBER OF CHILDREN (3-5) AND GROUP CHILD CARE (30 MONTHS TO SCHOOL AGE) SPACES IN METRO VANCOUVER

GEOGRAPHIC AREA	2023 ESTIMATED NO. OF CHILDREN 3-5*		ESTIMATED NO. OF CHILD CARE SPACES - GROUP CHILD CARE (30 MONTHS TO SCHOOL AGE) **		GROUP CHILD CARE (UNDER 36 MONTHS) SPACES PER 100 CHILDREN 0-3
	No.	%	No.	%	No.
Anmore	42	0.1%	25	0.1%	59.5
Belcarra	5	0.0%	0	0.0%	0.0
Burnaby	6,507	9.2%	2,273	8.3%	34.9
Coquitlam	3,952	5.6%	2,085	7.6%	52.8
Delta	2,793	3.9%	725	2.6%	26.0
Langley City	1,034	1.5%	441	1.6%	42.6
Langley Township	4,553	6.4%	1,889	6.9%	41.5
Lions Bay	36	0.1%	16	0.1%	44.4
Maple Ridge	3,070	4.3%	844	3.1%	27.5
New Westminster	2,171	3.1%	1,229	4.5%	56.6
North Vancouver City	1,508	2.1%	799	2.9%	53.0
North Vancouver District	2,450	3.4%	1,428	5.2%	58.3
Pitt Meadows	649	0.9%	488	1.8%	75.2
Port Coquitlam	1,872	2.6%	751	2.7%	40.1
Port Moody	1,000	1.4%	484	1.8%	48.4
Richmond	5,368	7.6%	3,682	13.4%	68.6
Surrey	17,448	24.6%	4,846	17.6%	27.8
Tsawwassen First Nation	78	0.1%	52	0.2%	66.7
UBC	423	0.6%	509	1.9%	120.3
UEL***	87	0.1%	0	0.0%	0.0
Vancouver	14,828	20.9%	4,150	15.1%	28.0
West Vancouver	843	1.2%	622	2.3%	73.8
White Rock	349	0.5%	173	0.6%	49.6
Vancouver CMA	71,066	100%	27,511	100%	38.7

*Source: Metro Vancouver. Population estimates are rounded up from 30 months (2.5 years) to 36 months (3 years) for reporting purposes

**Source: Licensed spaces by Fraser Health and Coastal Health, May 2023

***Source: Licensed spaces from Child Care Centres in UEL. UEL does not record data





Group Child Care (School Age)

On average, there are 9 spaces per 100 children aged 5-12 in Group Child Care (school age). In total, there are an estimated 18,747 Group Child Care (school age) spaces in Vancouver CMA (Table 10). The highest ratio of children aged 5-12 per Group Child Care (school age) spaces are seen in Tsawwassen First Nation (23.8 spaces per 100 children aged 5-12), UBC (19.1 spaces per 100 children aged 5-12) Anmore (15.2 spaces per 100 children aged 5-12), and Vancouver (14.7 spaces per 100 children aged 5-12). Following the same trend as the other two Group Child Care licence types, the communities of Belcarra, Lions Bay and UEL have the lowest ratios.

With population of children 0-12 showing a low population growth to 2028 (approximately a 1.1 percent projected growth rate) and with a low child to child care space ratio for this licence type, we can infer that there will likely be an increase in population of school age children (5-12) in the near-term. As such, this could tell us that there is a greater need to create spaces for school age children to accommodate the growth of children entering this the 5-12 age range. Positively however, the Province has created a new child care licence type for school age children (School Age on School Grounds) and has prioritized funding in the New Spaces Fund program for school age space creation, which could mitigate the growth in demand in this age category over time.

TABLE 10: ESTIMATED NUMBER OF CHILDREN (5-12) AND GROUP CHILD CARE (SCHOOL AGE) SPACES IN METRO VANCOUVER

GEOGRAPHIC AREA	2023 ESTIMATED NO. OF CHILDREN 5-12*		ESTIMATED NO. OF CHILD CARE SPACES - GROUP CHILD CARE (SCHOOL AGE)**		GROUP CHILD CARE (SCHOOL AGE) SPACES PER 100 CHILDREN 5-12
	No.	%	No.	%	No.
Anmore	198	0.1%	30	0.2%	15.2
Belcarra	17	0.0%	0	0.0%	0.0
Burnaby	18,284	8.7%	1,436	7.7%	7.9
Coquitlam	12,847	6.1%	1,123	6.0%	8.7
Delta	9,402	4.5%	699	3.7%	7.4
Langley City	2,532	1.2%	145	0.8%	5.7
Langley Township	14,011	6.7%	818	4.4%	5.8
Lions Bay	115	0.1%	0	0.0%	0.0
Maple Ridge	9,305	4.4%	1,018	5.4%	10.9
New Westminster	5,458	2.6%	420	2.2%	7.7
North Vancouver City	3,995	1.9%	416	2.2%	10.4
North Vancouver District	8,773	4.2%	1,171	6.2%	13.3
Pitt Meadows	1,910	0.9%	192	1.0%	10.1
Port Coquitlam	5,432	2.6%	455	2.4%	8.4
Port Moody	3,021	1.4%	272	1.5%	9.0
Richmond	16,464	7.9%	1,657	8.8%	10.1
Surrey	53,078	25.4%	2,429	13.0%	4.6
Tsawwassen First Nation	202	0.1%	48	0.3%	23.8
UBC	1,353	0.6%	259	1.4%	19.1
UEL***	270	0.1%	0	0.0%	0.0
Vancouver	37,553	17.9%	5,504	29.4%	14.7
West Vancouver	3,932	1.9%	561	3.0%	14.3
White Rock	1,107	0.5%	94	0.5%	8.5
Vancouver CMA	209,259	100%	18,747	100%	9.0

*Source: Metro Vancouver. Population estimates are rounded up from 30 months (2.5 years) to 36 months (3 years) for reporting purposes

**Source: Licensed spaces by Fraser Health and Coastal Health, May 2023

***Source: Licensed spaces from Child Care Centres in UEL. UEL does not record data



Child Care Access in British Columbia

Not all families choose or require licensed child care (e.g., some will have a family caregiver, nanny, or other child care option); however, it is clear that the supply of licensed child care is not meeting the demand. The 2023 Statistics Canada Survey on Early Learning and Child Care Arrangements (SELCCA) found that of BC families with children 0-5 years, 58.8 percent had difficulty accessing child care⁶. Of those, the most common types of difficulties encountered in finding child care included the lack of availability in the community (74.4 percent), the affordability of the child care (47.1 percent), finding care that fits the desired work or study schedule (29 percent), finding quality child care (24.5 percent), finding licensed care (29.1 percent), and difficulty finding subsidized child care spaces or spaces eligible for child care fee subsidy (22.3 percent)⁷.

According to SELCCA some of the consequences of families having difficulties finding child care include⁸:

- Having to change work or school schedules (40.5 percent),
- Working fewer hours (40.2 percent);
- Postponing return to work (35.4 percent);
- Using multiple care arrangements or a temporary arrangement (33.6 percent);
- Paying more for child care than wanted (32.2 percent);
- Deciding to work from home (19.8 percent);
- Deciding to have parent stay at home with the child (18.2 percent);
- Changing jobs, quitting job or closing business (15.1 percent); and,
- Postponing or discontinuing school or training (9.9 percent).

6 Statistics Canada. Table 42-10-0001-01 Difficulty for parents and guardians in finding a child care arrangement, children aged 0 to 5 years

7 Statistics Canada. Table 42-10-0008-01 Type of difficulty encountered by parents and guardians in finding a child care arrangement, children aged 0 to 5 years

8 Statistics Canada. Table 42-10-0009-01 Consequences of having encountered difficulties in finding a child care arrangement, children aged 0 to 5 years

Local Government Child Care Policies

One way that local governments can enable an adequate supply of child care spaces is by developing a local plan, strategy or bylaw around child care that outlines municipal policies and expectations for child care provision. 15 of 20 respondents in Metro Vancouver have approved a stand-alone child care strategy for their respective community, which is a significant increase from 2019 which showed 8 of 21 municipalities had a standalone child care strategy (Table 11), these include:

- Burnaby;
- Coquitlam;
- Delta;
- Langley City;
- Langley Township;
- New Westminister
- North Vancouver City;
- North Vancouver District;
- Pitt Meadows;
- Port Coquitlam;
- Port Moody;
- Richmond;
- Vancouver;
- West Vancouver District; and,
- UBC.

14 of 19 local governments in Metro Vancouver identify child care objectives and/or policies within Official Community Plans (OCPs). 7 of 16 respondents have a social plan that addresses child care provisions (Table 11).

TABLE 11: CHILD CARE STRATEGIES, PLANS, AND POLICIES IN METRO VANCOUVER

2019 STRATEGIES / POLICIES ON CHILD CARE	2023 ESTIMATED NO. OF CHILDREN 5-12*	
	No.	%
Child Care Strategy / Policy	15 of 20	75%
Child Care is addressed in OCP	14 of 19	74%
Child Care is Addressed in Social Plan	7 of 16	44%
Child Care is defined as Community Amenity	15 of 21	71%
Child Care Bylaw	4 of 20	20%

Source: Metro Vancouver Municipal Survey

*Number of municipalities are based off the number of municipalities that answered the question in the survey.

Over half of the communities (15 out of 21) have identified child care as a “community amenity” in policy documents to encourage the provision of child care facilities through the development approvals process (Table 11), which is up from 11 out of 21 reported in 2019.

The 2023 Survey asked respondents to identify if their municipality has a standalone child care bylaw, which was a new addition for this edition of the survey. 4 of 20 survey respondents identified that their municipality has a child care bylaw to enhance child care provision within their respective communities (Table 11).



Zoning and Business Licence Bylaws for Child Care Facilities

Local governments have two main roles when it comes to regulating child care – zoning and business licensing. Zoning for child cares refers to indicating where child care uses are permitted. Local governments are also responsible for issuing business licences. There may be different requirements for home-based businesses. Municipal business licensing of child care spaces is a separate process from health authority licensing.

17 of 20 local governments in the region permit child care facilities in single-detached residential zones and in institutional zones. Outside of these two zones, communities vary as to other zones where child care facilities may be located (see [Table 12](#) and [Appendix B](#)). The majority of Metro Vancouver communities permit child care in multi-unit residential zones such as duplex (13 of 18 municipalities), row house and townhouse zones (13 of 18 municipalities), apartment zones (15 of 19 municipalities), and mixed use/comprehensive development zones (17 of 19 municipalities).



TABLE 12: ZONING AND BUSINESS LICENCE REQUIREMENTS FOR CHILD CARE FACILITIES IN METRO VANCOUVER

ZONING AND BUSINESS LICENCE REQUIREMENTS	NUMBER OF MUNICIPALITIES	
	No.	%
Zoning Classification That Allows Child Care		
Residential zones:		
Single-Detached	17 of 19	89%
Duplex	13 of 18	72%
Row Townhouse	13 of 18	72%
Apartment	15 of 19	79%
Mixed use / CD Zones	17 of 19	89%
Commercial zones	18 of 19	95%
Institutional	17 of 18	94%
Public Use / Assembly Zones	9 of 12	75%
Industrial zones	9 of 16	56%
Agriculture	6 of 15	40%
Child Care Zone	5 of 12	42%
Additional Zoning or Licence Requirements		
Municipal Business Licence Required	17 of 21	81%
Parking Requirements (primary use child care)	18 of 19	95%
Parking Requirements (accessory use child care)	16 of 17	94%
Non-resident staff are permitted in home-based child care (additional staff to assist resident)	17 of 19	89%
Additional Outdoor Play Space Requirements Above Provincial Regulations.	8 of 20	40%
Municipality secures child care for long-term use	12 of 19	63%

Source: Metro Vancouver Municipal Survey

*Number of municipalities is based off the number of municipalities that responded to the question in the survey



Most communities in Metro Vancouver permit child care facilities in non-residential zones other than public use or assembly zones; 18 of 19 local governments allow child care facilities in commercial zones, 17 of 18 allow child care in industrial zones (although this may not include all types of industrial zones within a community), and 6 of 15 local governments allow child care in agricultural zones (note: not all municipalities have agricultural zoned lands). Although all local governments allow child care facilities in single-detached zones, the number of child care spaces permitted varies (Table 12).

The presence of on-site non-resident staff and parking are other issues addressed by local government bylaw or licensing. Most communities (17 of 19 responses) permit home-based child care services to have non-resident staff. 18 of 19 respondents require parking for child care as a primary use and 16 of 17 require parking for child care businesses as an accessory use.

8 of 20 respondents require additional outdoor play space beyond the provincial minimums. Some require additional outdoor play space in City-owned child care facilities. It is worth noting that the City of Richmond requires city-owned child care facilities to meet the Richmond Child Care Design Guidelines, the City of White Rock has additional outdoor space requirements for commercial zones, and the City of Vancouver's Childcare Design Guidelines make several recommendations beyond provincial health and safety standards for indoor/outdoor space including additional indoor and outdoor space requirements and direct access to outdoors. The City of Vancouver also has building requirements that exceed the *BC Building Code*.

Municipalities can also secure child care for long-term use through various mechanisms such as through municipally-owned facilities, covenants, developer agreements through rezonings, density bonusing, and/or long-term leases. For example, Coquitlam, New Westminster, North Vancouver City, North Vancouver District, Port Moody, Vancouver, and UEL reported that they secure child care for long term use through Section 219 covenants, and Burnaby, Maple Ridge, and Vancouver reported the use of lease agreements to ensure long-term child care. Richmond and Burnaby identified using city-owned facilities to secure child care for long-term use.

Local Government Financial Support and Resources for Child Care Providers

Some communities offer financial and other types of resources to facilitate child care (Table 13). The most common of these is the provision of space to child care providers (15 of 20 municipalities), through either a nominal rate agreement, reduced lease rates, or space at market lease rate within city-owned buildings. Several communities offer grants for child care providers, both for operating costs (3 of 21 respondents) and/or for capital projects (7 of 20 respondents). 7 of 19 respondents offer property tax exemptions for child care facilities and 10 of 18 respondents offer municipal incentives for developers. The details of how funds for grants are established

and administered, as well as the criteria for grant eligibility, are unique to each community.

Municipalities provide non-financial resources as well (Table 13). 16 of 21 respondents have a staff resources dedicated to child care work and 9 of 20 have a staff person dedicated to child care work. 13 of 21 Metro Vancouver communities provide local information to assist residents seeking child care and/or people wishing to establish and operate child care facilities (note: Health Authorities and the [Union of British Columbia Municipalities](#) also have child care planning guides available).

TABLE 13: LOCAL GOVERNMENT RESOURCES FOR CHILD CARE PROVIDERS

MUNICIPAL RESOURCES FOR CHILD CARE PROVIDERS	NUMBER OF MUNICIPALITIES	
	No.	%
Financial Support / Resources		
Municipal building space available for child care (rent-free, reduced lease, or market lease)	15 of 20	75%
Municipal Grants - for Operating Costs	3 of 21	14%
Municipal Grants - for Capital Projects	7 of 20	35%
Municipal Child Care Reserve Fund	4 of 19	21%
Property tax exemptions	7 of 19	37%
Municipal Incentives for Developers	10 of 18	56%
Other Municipal Support / Resources		
Staff resources dedicated to Child Care work	16 of 21	76%
Dedicated staff person to Child Care work	9 of 21	43%
Child Care Design Guidelines (Operator)	5 of 20	25%
Child Care Information Documents (Resident)	13 of 21	62%
Child Care Technical Guidelines (e.g., specifications for materials, millwork)	11 of 18	61%

Source: Metro Vancouver Municipal Survey

*Number of municipalities is based off the number of municipalities that responded to the question in the survey



Municipal Child Care Operations

Municipalities can also own and operate child care facilities or own facilities to rent or lease to child care operators. Of all 21 responses, 16 local governments indicated that their community owns child care facilities (Table 14). The majority of local governments that own child care facilities lease space to child care providers, with a few operating child care facilities themselves. The primary funding mechanism for municipally owned child care facilities has been through the funding programs provided under the ChildCareBC program (New Spaces Fund and Child Care Operating Funding), Community Amenity Contributions, and municipal tax funding.

10 of 14 respondents use municipal tax dollars to support the operation and maintenance of municipally-owned child care facilities, 7 of 17 respondents charge the tenant for repairs/maintenance and 16 of 19 respondents cover capital/life cycle repairs of municipally-owned child care facilities.

Local governments can also partner with child care providers in the operation of child care. The survey results show that 8 of 19 respondents partner with child care providers. The most common partnerships identified are with School Districts and non-profit societies.

TABLE 14: MUNICIPAL CHILD CARE OPERATIONS

MUNICIPAL CHILD CARE OPERATIONS	NUMBER OF MUNICIPALITIES	
	No.	%
Financial Support / Resources		
Municipally owned Child Care Facilities	16 of 21	76%
Tax dollars to support operation and maintenances of municipally owned child care facilities	10 of 14	71%
Municipality charges tenant for repairs/maintenance	7 of 17	41%
Municipality covers capital/life cycle repairs	16 of 19	84%
Municipality Partners in operation of child care	8 of 19	42%
Municipal staff has priority access to city-owned or operated child care facilities	3 of 20	15%

Source: Metro Vancouver Municipal Survey

*Number of municipalities is based off the number of municipalities that responded to the question in the survey

3 of 20 respondents provide priority access to municipal staff in city-owned or operated child care facilities. The Tsawwassen First Nation (TFN) offers child care spaces to TFN members and staff at a 10 percent discounted rate. The City of West Vancouver offers priority access at two city-owned facilities and UBC offers priority access for academic child care for UBC students, faculty and staff and for prioritizes campus neighbourhood residents for neighbourhood child care spaces.

ChildCareBC \$10/Day Child Care Facilities

As part of the ChildCareBC program, the Province of British Columbia has committed to making child care more affordable for families and introduced the \$10/day child care program. To date, the \$10/day child care program prioritizes spaces for children ages 0-5. The 2023 Survey was updated to identify which municipalities have \$10/day sites and how many \$10/day sites those municipalities have within their respective communities.

Survey results show that 14 of 21 municipalities have \$10/day child care facilities and 10 of 15 respondents said they are municipally-owned (Table 15). The City of Vancouver has the highest number of \$10/day child care facilities at 52 facilities (38 of 52 are municipally-owned), followed by UBC with 15 facilities (14 of 15 are municipally-owned), then the Cities of

Richmond and Surrey each with 13 facilities (7 of 13 in Richmond and 2 of 13 in Surrey are municipally-owned) and the City of Burnaby with 11 facilities (1 of 11 are municipally-owned) (Appendix B). Notably, the District of North Vancouver has 7 \$10/day child care facilities (3 of 7 are municipally-owned) where one of those facilities is located on the Tsleil-Waututh Nation Reserve and prioritizes spaces for Tsleil-Waututh members. The majority of respondents who have \$10/day child care facilities lease the space out to child care providers.

TABLE 15: MUNICIPAL \$10/DAY CHILD CARE FACILITIES

MUNICIPALITIES WITH \$10/DAY CHILD CARE FACILITIES	NUMBER OF MUNICIPALITIES	
	No.	%
Financial Support / Resources		
Municipalities with \$10/day child care facilities	14 of 21	67%
Municipally owned \$10/day child care facilities	10 of 15	67%

Source: Metro Vancouver Municipal Survey

*Number of municipalities is based off the number of municipalities that responded to the question in the survey



Local Government Challenges in Child Care Provision

The 2023 Survey added a new section to better understand the challenges faced by communities in the provision of child care. 14 responses were received and the top challenges identified include (Table 16):

- Lack of funding (10 of 14);
- Child care staffing shortages/wages (9 of 14);
- Persistent demand for new child care spaces (7 of 14);
- BC New Spaces Fund does not provide enough funding to build new centres (5 of 14); and
- Land constraints for new child care facilities (5 of 14).
- Other challenges identified include:
 - Difficulty realizing affordable child care spaces;
 - Park space conflicts;
 - Old facilities; and
 - Difficulty meeting outdoor play space in higher-density areas.

TABLE 16: CHALLENGES EXPERIENCED BY MUNICIPALITIES IN THE PROVISION OF CHILD CARE

CHALLENGES IN THE PROVISION OF CHILD CARE	NUMBER OF MUNICIPALITIES	
	No.	%
Lack of funding to cover capital/operating/maintenance costs and rent/lease affordability challenges	10 of 14	71%
Child care staffing shortages / child care wages	9 of 14	64%
Persistent demand for new child care spaces (e.g., there is a shortage of out of school care and children under 36 months spaces in 2 municipalities)	7 of 14	50%
BC New Spaces Fund does not provide enough funding to build new centres	5 of 14	36%
Land constraints for new child care facilities	3 of 14	21%
Difficulty realizing affordable child care spaces	2 of 14	14%
Park space conflicts (e.g., City parks and School District playgrounds)	2 of 14	14%
Very old facilities	2 of 14	14%
Difficulty meeting outdoor play space in high-density areas	1 of 14	7%

Source: Metro Vancouver Municipal Survey

*Number of municipalities is based off the number of municipalities that responded to the question in the survey

Conclusions

This report shows that the ChildCareBC program is proving to have a positive impact on the creation of child care spaces since its implementation. Since 2019, there has been an increase of 20,644 spaces in Metro Vancouver which equates to a 35 percent increase in child care spaces across the region. In addition, the ChildCareBC program has and cut the cost of child care in half making child care more affordable for families across the Province. Child care in BC has taken strides to become universal for all families, which is recognized in the shift in responsibility of provincial ministry to the newly named Ministry of Education and Child Care.

Although the number of spaces has significantly increased since 2019 (excluding small communities), Metro Vancouver is slightly below the rate of child care spaces per 100 children under 12 than the Canadian average (i.e., 25.1 in Vancouver CMA compared to 29 nation-wide). Notably however, Metro Vancouver is ahead of the rate of child care spaces per 100 children under 12 when compared to the British Columbia average of 21 regulated spaces per 100 children.

Another noticeable change seen in the 2023 Survey is the much lower population projection from 2023 to 2028. Although both the 2019 and 2023 reports project a growth in children under the age of 12 in the near term, the projection from 2023 to 2028 indicates only a 1.1 percent increase, which is much lower than seen in 2019. This indicates that the number of children in the infant/toddler age brackets is projected to decline whereas the number of school age children (5-12) will grow, resulting in a higher demand for school age child care. This highlights the continued need for local governments, the Province, the not-for-profit sector, the private sector and others

to collaborate on projects, programs, and policies that support the creation of new child care spaces to meet the growing demand. It also signifies a stronger need to partner with school districts to ensure sufficient space to meet existing and future demand.

The 2023 Survey shows local governments recognize that child care contributes to the social and economic well-being of communities and many are taking a range of actions to facilitate additional child care spaces in their communities. Most survey respondents permit child care facilities in a range of residential and non-residential areas. Many have a child care strategy in place and/or recognize child care as a community amenity in the development approvals process. Many provide financial or non-financial resources to support new or existing not-for-profit child care facilities.

As the Metro Vancouver region continues to grow, and increasing numbers of families choose to live in denser urban areas close to transit, locating child care in Urban Centres and along the Frequent Transit Network will become increasingly important. By siting child care opportunities in walkable, transit-accessible places “on the way” to other daily destinations, local governments can support more sustainable transportation choices, making it easier and more affordable for families to choose alternatives to personal vehicles. One example of this is co-locating child care facilities on or close to school properties so that children of different ages can be dropped off in one trip. While child care is in demand in all communities across the region, Urban Centres and other appropriate areas along the Frequent Transit Network are key locations for future child care opportunities that will support the region’s growth management, climate action, and social equity objectives into the future.



Appendices

Appendix A – Child Care Space Inventory

GEOGRAPHIC AREA	TOTAL CHILD CARE SPACES				GROUP CHILD CARE (UNDER 36 MONTHS)	GROUP CHILD CARE (30 MONTHS TO SCHOOL AGE)	PRESCHOOL (30 MONTHS TO SCHOOL AGE)	FAMILY CHILD CARE
	2023	2019	2015	2011	2023	2023	2023	2023
Anmore	91	83	n/a	n/a	8	25	20	0
Burnaby	6,433	5,062	4,820	4,456	1,276	2,273	485	225
Coquitlam	5,299	4,095	3,719	3,369	662	2,085	490	244
Delta	3,041	2,162	2,260	2,097	239	725	555	119
Langley City	1,280	830	598	197	285	441	114	28
Langley Township	5,303	3,404	2,886	2,502	1,023	1,889	684	133
Lions Bay	40	40	n/a	n/a	0	16	0	0
Maple Ridge	3,316	2,539	2,053	2,205	370	844	491	238
New Westminister	3,164	2,049	1,671	1,337	602	1,229	170	63
North Vancouver City	1,930	1,680	1,418	1,256	514	799	55	61
North Vancouver District	4,156	3,611	3,248	2,988	686	1,428	300	153
Pitt Meadows	1,260	964	648	500	300	488	151	35
Port Coquitlam	2,794	2,083	1,998	1,714	425	751	282	131
Port Moody	1,277	1,005	797	668	206	484	40	21
Richmond	8,521	5,071	5,462	4,580	1,853	3,682	683	167
Surrey	14,795	10,489	9,675	6,452	2,175	4,846	2,034	356
Tsawwassen	164	116	n/a	n/a	40	52	0	0
UBC	996	735	n/a	n/a	204	509	0	0
UEL	32	104	n/a	n/a	0	0	32	0
Vancouver	15,203	12,758	n/a	n/a	1,573	4,150	2,293	706
Vancouver+UBC+UEL	16,231	13,597	14,539	11,708	n/a	n/a	n/a	n/a
West Vancouver	1,732	1,439	1,227	1,142	204	622	167	7
White Rock	437	301	348	286	49	173	52	21
Vancouver CMA	81,264	60,620	57,367	47,457	12,694	27,511	9,098	2,708

Source: Fraser Health and Vancouver Coastal Health (data as of May 2023). 2011 data table does not show all categories. "Occasional Care" and "Child Minding" are included in the total, although not shown as separate columns.

Appendix A – Child Care Space Inventory

GEOGRAPHIC AREA	GROUP CHILD CARE (SCHOOL AGE)	SCHOOL AGE ON SCHOOL GROUNDS	RECREATIONAL CARE	MULTI-AGE CHILD CARE*	OCCASIONAL CHILD CARE	CHILD MINDING
	2023	2023	2023	2023	2023	2023
Anmore	30	0	0	8	0	0
Burnaby	1,436	252	0	390	0	96
Coquitlam	1,123	282	0	341	0	72
Delta	699	261	155	288	0	0
Langley City	145	84	130	53	0	0
Langley Township	818	500	0	256	0	0
Lions Bay	0	16	0	8	0	0
Maple Ridge	1,018		0	355	0	0
New Westminster	420	528	0	136	16	0
North Vancouver City	416	0	0	85	0	0
North Vancouver District	1,171	42	0	318	58	0
Pitt Meadows	192	24	30	40	0	0
Port Coquitlam	455	488	0	262	0	0
Port Moody	272	162	0	77	15	0
Richmond	1,657	278	0	191	10	0
Surrey	2,429	1,209	0	1,589	84	73
Tsawwassen	48	0	0	24	0	0
UBC	259	24	0	0	0	0
UEL	0	0	0	0	0	0
Vancouver	5,504	270	0	432	213	62
Vancouver+UBC+UEL	n/a	n/a	n/a	n/a	n/a	n/a
West Vancouver	561	60	0	80	31	0
White Rock	94	24	0	24	0	0
Vancouver CMA	18,747	4,504	315	4,957	427	303

Source: Fraser Health and Vancouver Coastal Health (data as of May 2023). 2011 data table does not show all categories.

"Occasional Care" and "Child Minding" are included in the total, although not shown as separate columns.

*Categories "Multi-Age Child Care" and "In-Home Multi-Age Child Care" are combined for reporting purposes.



Appendix B – Municipal Survey of Child Care Policies and Initiative

MUNICIPAL SURVEY RESULTS 2023	MUNICIPAL CHILD CARE POLICIES AND INITIATIVES - 2023									
	Burnaby	Coquitlam	Delta	Langley City	Langley Twp	Lions Bay	Maple Ridge	New Westminster	North Van City	North Van District
Planning and Policy										
Child Care Strategy / Policy	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Child Care is addressed in OCP	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Child Care is Addressed in Social Plan	Yes	No	Yes	No	Yes	No	No	Yes	Yes	N/A
Child Care is defined as Community Amenity	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Staff resource dedicated to Child Care work	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes
If yes, is there a point person or fully dedicated staff?	No	Yes	No	Yes	Yes	No	Yes	No	No	No
Child Care Design Guidelines (Operator)		No	No	No	P	No	Yes	No	No	No
Child Care Information Documents (Resident)	Yes	Yes	Yes	No	No	No	Yes	Yes	No	Yes
Child Care Bylaw	No	No	No	No	No	No	No	Yes	No	Yes
Child Care Technical Guidelines	No	No	No	No	No	No	Yes	No	No	No
Other Policy items for Day Care	P	Yes	N/A	No	Yes	No	No	Yes		Yes
Financing Tools										
Municipal building space available for child care	Yes	Yes		No	Yes	No	No	Yes	Yes	Yes
Municipal Grants - for Operating Costs	No	No	No	No	No	No	No	No	No	Yes
Municipal Grants - for Capital Projects	Yes	Yes	No	No	No	No	No	Yes	Yes	Yes
Municipal Child Care Reserve Fund	No	Yes	No	No	No	No		Yes	No	No
Property tax exemptions	Yes	No	Yes	No	No	No		No	Yes	Yes
Municipal Incentives For Developers		Yes	Yes	No	No	No		Yes	No	Yes
Is child care creation supported in any other way not listed?	No	No		No	No	No		Yes	No	Yes
Other Financial Items	No	No		No	No	No		Yes	No	
Zoning: Is daycare use permitted?										
Residential zones:										
Single Detached	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes
Duplex	Yes	Yes	Yes	No	Yes	N/A	Yes	Yes	No	Yes
Row Townhouse	Yes	Yes	Yes	No	Yes	N/A	Yes	Yes	No	Yes
Apartment	Yes	Yes	Yes	No	Yes	N/A	Yes	Yes	No	Yes
Mixed use / CD Zones	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes
Commercial zones	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes
Institutional	Yes	Yes	No	Yes	Yes	N/A	Yes	Yes	Yes	Yes
Public Assembly Zones	Yes	No	Yes			N/A		N/A	Yes	Yes
Industrial zones	No	Yes	No	No	Yes	N/A	No	Yes	Yes	Yes
Agriculture	No	No	Yes	No	Yes	N/A	No	No	No	N/A
Other - Child Care Zone (CCR)		Yes	Yes			N/A	Yes	N/A	No	No
Parking requirements - accessory use daycare		Yes	Yes	Yes	Yes	N/A	Yes	N/A	Yes	Yes
Parking requirements - primary use is daycare	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes

Note: Blank cells mean the questions were unanswered.

MUNICIPAL SURVEY RESULTS 2023	MUNICIPAL CHILD CARE POLICIES AND INITIATIVES - 2023										
	Pitt Meadows	Port Coquitlam	Port Moody	Richmond	Surrey	Tsawwassen	Vancouver	West Vancouver	UEL	UBC	White Rock
Planning and Policy											
Child Care Strategy / Policy	Yes	Yes	Yes	Yes	No		Yes	Yes	No	Yes	No
Child Care is addressed in OCP	Yes	Yes	Yes	Yes	No		N/A	No	No	Yes	Yes
Child Care is Addressed in Social Plan	No	No	N/A	Yes	No		N/A	Yes	No	N/A	N/A
Child Care is defined as Community Amenity	Yes	Yes	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Staff resource dedicated to Child Care work	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
If yes, is there a point person or fully dedicated staff?	No	No	No	Yes	Yes	No	Yes	Yes	No	Yes	
Child Care Design Guidelines (Operator)	No	No	No	Yes	No	Yes	Yes	No	No	Yes	No
Child Care Information Documents (Resident)	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Child Care Bylaw	No	No	No	Yes	No	No	No	Yes	No	N/A	No
Child Care Technical Guidelines	No	No	No	Yes	No	Yes	Yes	No	No	Yes	No
Other Policy items for Day Care	Yes	Yes	No	Yes	No	Yes	Yes		Yes	Yes	No
Financing Tools											
Municipal building space available for child care	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Municipal Grants - for Operating Costs	No	No	No	No	No	No	Yes	No	No	Yes	No
Municipal Grants - for Capital Projects	No	No	No	Yes	No	No	Yes	No	No	N/A	No
Municipal Child Care Reserve Fund	No	No	No	Yes	No	No	Yes	No	No	N/A	No
Property tax exemptions	No	Yes	No	Yes	No	No	No	Yes	No	N/A	No
Municipal Incentives For Developers	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	N/A	No
Is child care creation supported in any other way not listed?	No		Yes	No	Yes	No	Yes	No	No	N/A	No
Other Financial Items				No		No	Yes	No			No
Zoning: Is daycare use permitted?											
Residential zones:											
Single Detached	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	N/A	Yes
Duplex	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	N/A	N/A
Row Townhouse	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	N/A	N/A
Apartment	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	N/A
Mixed use / CD Zones	No	Yes	Yes	Yes	N/A	No	Yes	Yes	Yes	Yes	Yes
Commercial zones	Yes	Yes	Yes	Yes	Yes	N/A	Yes	Yes	No	Yes	Yes
Institutional	Yes	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes	Yes	Yes
Public Assembly Zones	Yes		No	Yes	Yes	N/A	N/A	Yes	No	N/A	Yes
Industrial zones	Yes	No	No	Yes	Yes	N/A	Yes	N/A	No	N/A	N/A
Agriculture	Yes	Yes	No	Yes	Yes	N/A	No	N/A	No	N/A	N/A
Other - Child Care Zone (CCR)	No		No	No	Yes	N/A	No	N/A	Yes	N/A	No
Parking requirements - accessory use daycare	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	No	Yes
Parking requirements - primary use is daycare	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	No	Yes

Note: Blank cells mean the questions were unanswered.



MUNICIPAL SURVEY RESULTS 2023	MUNICIPAL CHILD CARE POLICIES AND INITIATIVES - 2023									
	Burnaby	Coquitlam	Delta	Langley City	Langley Twp	Lions Bay	Maple Ridge	New Westminster	North Van City	North Van District
Business Licence Requirements										
Municipal business licence required	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
- Required only when more than XX children				Yes		No	Yes	Y=8		Y=2
Traffic management plan	Yes	No	No	No		No	Yes	Yes	Yes	Yes
Public consultation	Yes	No	No	No	No	No	Yes	No	Yes	Yes*
Other license requirements				Yes		No	Yes	Yes		Yes
*May be required if a home-based child care facility proposes between 9-10 children; required if a home-based child care facility proposes more than 10 children Note: Above section assumes no rezoning. A rezoning process may require traffic plans and public consultations as part of rezoning process.										
Regulatory Requirements										
Are non-resident staff permitted?	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Municipal Building Code Requirements *	No	No	No	No	No		Yes	Yes	No	No
Outdoor Space requirements *	No	No	No	No	No		Yes	Yes	No	No
Does your municipality secure child care for long-term use?	Yes	Yes	No	No	No		Yes	Yes	Yes	Yes
*Requirements beyond those in the provincial legislation.										
Municipal Child Care Operations										
Does your municipality own child care facilities?	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Are tax dollars used to support the operation/maintenance	Yes		Yes				No		Yes	Yes
Does your municipality charge the tenant for routine repairs/maintenance?		No	No				No	No	Yes	Yes
Does your municipality cover capital or life cycle repairs?	Yes	No	Yes	Yes			Yes	Yes	Yes	Yes
Does your municipality partner in the operation of child care?	Yes	No	Yes	No	Yes		Yes	No	No	Yes
Do municipal staff have priority access to any city-owned or operated child care?	No	No	No	No	No		No	No	No	No
\$10/Day Sites										
Does your municipality have any \$10/day facilities?	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes
If so, how many?	11	4			4		2	1	4	7*
Are the \$10/day sites owned by your municipality?	Yes	No	No		No		No	Yes	Yes	Yes
If so, how many?	1							1	2	3
Do the cost recovery practices differ from other City-owned child care facilities?	No						Yes	N/A	No	No
*One \$10/day child care facility is located in the Tsleil-Waututh Nation reserve										
Challenges in the Provision of Child Care										
Challenges are identified and discussed in the body of the report.										

Note: Blank cells mean the questions were unanswered.



MUNICIPAL SURVEY RESULTS 2023	MUNICIPAL CHILD CARE POLICIES AND INITIATIVES - 2023										
	Pitt Meadows	Port Coquitlam	Port Moody	Richmond	Surrey	Tsawwassen	Vancouver	West Vancouver	UEL	UBC	White Rock
Business Licence Requirements											
Municipal business licence required	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes
- Required only when more than XX children				Y=10+					No	Y=10+	
Traffic management plan	No	No		No	No	No	No	Yes	No	Yes	No
Public consultation	No	No	No	No	No	No	Yes	Yes	No	Yes	No
Other license requirements	No			No	No	Yes	No		Yes	Yes	No
<p>*May be required if a home-based child care facility proposes between 9-10 children; required if a home-based child care facility proposes more than 10 children Note: Above section assumes no rezoning. A rezoning process may require traffic plans and public consultations as part of rezoning process.</p>											
Regulatory Requirements											
Are non-resident staff permitted?	Yes	Yes	Yes		Yes	Yes	Yes	No		Yes	Yes
Municipal Building Code Requirements *	No	No	No	Yes	No	Yes	Yes	No	No	Yes	No
Outdoor Space requirements *	Yes	No	No	Yes	No	Yes	Yes	Yes	No	No	Yes
Does your municipality secure child care for long-term use?	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	N/A	No
*Requirements beyond those in the provincial legislation.											
Municipal Child Care Operations											
Does your municipality own child care facilities?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Are tax dollars used to support the operation/maintenance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	N/A	
Does your municipality charge the tenant for routine repairs/maintenance?	No	No	No	Yes	Yes	No	Yes	Yes	No	Yes	No
Does your municipality cover capital or life cycle repairs?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Does your municipality partner in the operation of child care?	No		No	Yes	Yes	No	No	No	No	Yes	No
Do municipal staff have priority access to any city-owned or operated child care?	No	No	No	No	No	Yes	No	Yes	No	Yes	No
\$10/Day Sites											
Does your municipality have any \$10/day facilities?	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	No
If so, how many?	1	1		13	13		52	1		15	
Are the \$10/day sites owned by your municipality?	Yes	No		Yes	Yes		Yes	Yes		Yes	
If so, how many?	1			7	2		38	Yes		14	
Do the cost recovery practices differ from other City-owned child care facilities?	No			No	No		No	N/A		No	
Challenges in the Provision of Child Care											
Challenges are identified and discussed in the body of the report.											

Note: Blank cells mean the questions were unanswered.



Appendix C – Regulated Child Care Spaces by Province/Territory and Percentage of Children (0-12) for whom there is a Regulated Child Care Space

GEOGRAPHIC AREA	NUMBER OF REGULATED FULL- AND PART-DAY CHILD CARE CENTRE SPACES FOR CHILDREN 0 – 5 YEARS	NUMBER OF REGULATED BEFORE- AND AFTER-SCHOOL CHILD CARE SPACES	NUMBER OF REGULATED FAMILY CHILD CARE SPACES 0 – 12 YEARS	TOTAL NUMBER OF REGULATED CHILD CARE SPACES 0 – 12 YEARS	PERCENT OF CHILDREN 0 – 12 YEARS FOR WHOM A PART- OR FULL -DAY REGULATED SPACE WAS AVAILABLE (%)
Province/Territory					
NL	4,702	2,717	623	8,042	14
PE	3,925	2,439	29	6,393	31
NS	11,959	3,589 ¹	1,190	16,738	14
NB	15,222	16,214	980	32,416	34
QC	214,168	340,683	65,281	620,132	54
ON	180,758	283,780	12,734	477,272	25
MB	22,949	12,136	3,312	38,397	18
SK	13,735	1,625	2,306	17,666	10
AB	80,816	50,985	8,708	140,509	20
BC	76,214	38,419	12,729	127,362	21
YT ²	1,070	388	210	1,869	32
NT	763	808	432	2,003	27
NU	1,052	155	40	1,247	12
CA	627,333	753,938	108,574	1,490,046	29

This includes full-day and part-day programs such as nursery school, not before- and after-school care for kindergarten-age children.

*Source: https://childcarecanada.org/sites/default/files/Early-Childhood-Education-and-Care-2021-REV-12-23_0.pdf
page 272

- 1 The number of before- and after-school spaces for Nova Scotia does not include 672 spaces in Nova Scotia Before- and After- School, so NS spaces are somewhat under-represented.
- 2 Yukon does not license by age group; enrolment figures are used instead. However, the coverage (%) was calculated based on the total regulated spaces for children 0 – 12.

Appendix D – Licensed Child Care Categories in British Columbia

CHILD CARE LICENCE TYPE	LICENCE REQUIREMENTS*
Group Child Care: Under 3-years old	<p>Ages: 0 to 36 months Max. No. of Children per group: 12 children</p> <p>Child to Staff Ratio:</p> <ul style="list-style-type: none"> • 1-4 children: One Infant-Toddler Educator (ITE) • 5-8 children: One ITE and one ECE is required • 9-12 children: One ITE and one ECE and one ECE Assistant <p>Staff qualifications:</p> <ul style="list-style-type: none"> • Infant Toddler Educator Certificate (approximately 1300 hours of training) • Early Childhood Educator Certificate (approximately 900 hours of training) • Early Childhood Educator Assistant Certificate (completed one early childhood education course) • Setting: Community based facility or centre
Group Child Care: 2.5 years to school age	<p>Ages: 30 months (2.5) to school age (5) Max. No. of Children per group: 25 children</p> <p>Child to Staff Ratio:</p> <ul style="list-style-type: none"> • 1-8 children: one ECE is required • 9-16 children one ECE and one ECE Assistant is required • 17 to 25 children one ECE and two ECE Assistant is required <p>Staff qualifications:</p> <ul style="list-style-type: none"> • Early Childhood Educator Certificate (approximately 900 hours of training) • Early Childhood Educator Assistant Certificate (completed one early childhood education course) • Setting: Community based facility or centre
Group Child Care – School age before and after school care	<p>Ages: 5-12</p> <p>Max. No. of Children per group:</p> <ul style="list-style-type: none"> • 24 children from Kindergarten and Grade 1, or 30 children from Grade 2 and older with no Kindergarten or Grade 1 children present <p>Child to Staff Ratio:</p> <ul style="list-style-type: none"> • One responsible adult for 12 children from Kindergarten to Grade 1 • One responsible adult for 15 children from Grade 2 and older <p>Staff qualifications:</p> <ul style="list-style-type: none"> • Responsible adults must be 19 years of age or older and able to provide care and mature guidance to children. Must also have 20 hours of child care-related training, relevant work experience, a valid first aid certificate and a clear criminal record check • Setting: Community based facility or centre



APPENDIX D – LICENSED CHILD CARE CATEGORIES IN BRITISH COLUMBIA

CHILD CARE LICENCE TYPE	LICENCE REQUIREMENTS*
<p>School Age Care on School Grounds (new licence type)</p>	<p>Ages: 5-12</p> <p>Max. No. of Children per group:</p> <ul style="list-style-type: none"> • 24 children from Kindergarten and Grade 1, or 30 children from Grade 2 and older with no Kindergarten or Grade 1 children present <p>Child to Staff Ratio:</p> <ul style="list-style-type: none"> • One responsible adult for 12 children from Kindergarten to Grade 1 • One responsible adult for 15 children from Grade 2 and older <p>Staff qualifications:</p> <ul style="list-style-type: none"> • Responsible adults must be 19 years of age or older and able to provide care and mature guidance to children. Must also have 20 hours of child care-related training, relevant work experience, a valid first aid certificate and a clear criminal record check • Setting: School Grounds
<p>Multi-Age Care</p>	<p>Ages: 0-12</p> <p>Max. No. of Children per group: 8 children</p> <p>Child to Staff Ratio:</p> <ul style="list-style-type: none"> • One ECE for 8 children <p>Staff qualifications:</p> <ul style="list-style-type: none"> • Early Childhood Educator Certificate (approximately 900 hours of training) • Setting: Community based facility or centre
<p>In-home Multi-Age Care</p>	<p>Ages: 0-12</p> <p>Max. No. of Children per group: 8 children</p> <p>Child to Staff Ratio:</p> <ul style="list-style-type: none"> • One ECE for 8 children <p>Staff qualifications:</p> <ul style="list-style-type: none"> • Early Childhood Educator Certificate (approximately 900 hours of training) • Setting: In child care providers own home
<p>Family Child Care</p>	<p>Ages: 0-12</p> <p>Max. No. of Children per group: 7 children</p> <p>Child to Staff Ratio:</p> <ul style="list-style-type: none"> • One responsible adult (must be licensee) for 7 children <p>Staff qualifications:</p> <ul style="list-style-type: none"> • Must be 19 years of age or older and able to provide care and mature guidance to children. Must also have 20 hours of child care-related training, relevant work experience, a valid first aid certificate and a clear criminal record check <p>Setting: In child care providers own home</p>
<p>Preschool – 2.5 to school age</p>	<p>Typically operate September-June for four hours a day</p> <p>Ages: 30 months (2.5) to school age (5)</p> <p>Max. No. of Children per group: 20 children</p> <p>Child to Staff Ratio:</p> <ul style="list-style-type: none"> • 1-10 children: One ECE • 11-20 children: One ECE and one ECE Assistant <p>Setting: Community based facility or centre</p>

CHILD CARE LICENCE TYPE	LICENCE REQUIREMENTS*
Preschool – 2.5 to school age	<p>Typically operate September-June for four hours a day Ages: 30 months (2.5) to school age (5 Max. No. of Children per group: 20 children Child to Staff Ratio:</p> <ul style="list-style-type: none"> • 1-10 children: One ECE • 11-20 children: One ECE and one ECE Assistant <p>Staff qualifications:</p> <ul style="list-style-type: none"> • Early Childhood Educator Certificate (approximately 900 hours of training) • Early Childhood Educator Assistant Certificate (completed one early childhood education course) <p>Setting: Community based facility or centre</p>
Occasional Care	<p>Drop-in child care that can be for a max. 8 hours a day, no more than 40 hours per calendar month Ages: 18 months (1.5) and up Max. No. of Children per group:</p> <ul style="list-style-type: none"> • 16 children (if children under 36 months present) • 20 children (if no children under 36 months present) <p>Child to Staff Ratio:</p> <ul style="list-style-type: none"> • 1 responsible adult for every 4 children (if children under 36 months present) • 1 responsible adult for every 8 children (if no children under 36 months present) <p>Staff qualifications: Must be 19 years of age or older and able to provide care and mature guidance to children. Must also have 20 hours of child care-related training, relevant work experience, a valid first aid certificate and a clear criminal record check</p> <ul style="list-style-type: none"> • Setting: Community based facility or centre
Recreational Child Care (new licence type)	<p>Drop-in basis for after school care or on a day of school closure. Ages: 5-12 Max. No. of Children per group:</p> <ul style="list-style-type: none"> • No maximum. Floor area of space for activity must be sufficient to ensure health and safety of children. <p>Staff qualifications:</p> <ul style="list-style-type: none"> • Must be 19 years of age or older and able to provide care and mature guidance to children. Must also have 20 hours of child care-related training, relevant work experience, a valid first aid certificate and a clear criminal record check <p>Child to Staff Ratio:</p> <ul style="list-style-type: none"> • 1 responsible adult for each 12 children (Kindergarten and Grade 1) • 1 responsible adult for every 15 children (Grade 2 and up) <p>Setting: Indoor facilities other than single family dwellings or outdoor settings such as public parks.</p>

*Source: The Province of British Columbia. "Understanding the Different Types of Child Care in BC".



To: Finance Committee

From: Linda Sabatini, Director, Financial Operations

Date: April 3, 2024 - **Revised on April 23, 2024** Meeting Date: April 10, 2024

Subject: **Audited 2023 Financial Statements and Annual Financial Results**

RECOMMENDATION

That the MVRD Board approve the Audited 2023 Consolidated Financial Statements for the Metro Vancouver Regional District.

That the GVS&DD Board approve the Audited 2023 Financial Statements for the Greater Vancouver Sewerage and Drainage District.

That the GVWD Board approve the Audited 2023 Financial Statements for the Greater Vancouver Water District.

That the MVHC Board approve the Audited 2023 Financial Statements for the Metro Vancouver Housing Corporation.

EXECUTIVE SUMMARY

This report presents the draft Audited 2023 Financial Statements (*Attachment 1*) and the 2023 Annual Financial Results (*Appendix 1*).

The 2023 operating surplus was \$12.8 million (1.2% of budget), lower than the four-year average of \$36M largely from a challenging economic environment and higher inflation. The surplus is largely attributable to higher water sales related to the warmer spring and summer months and lower consulting and contracted services expenditures in GVWD; slightly higher rental income and lower expenditures in property operations and minor maintenance work in MVHC; and staff vacancies and less spending on consulting and contracted services in the MVRD.

The 2023 Capital expenditures surplus was \$502.4 million, 40.3% of the planned budget of \$1.2 billion. Design and construction delays occurred in projects related to waste-water treatment plants, water mains, and Solid Waste facilities, as well as and permitting and development delays in Housing and Parks projects.

Metro Vancouver maintains a healthy liquidity position, with cash 2.5 times higher than its current obligations. This is critical to ensure ongoing capacity to continue to finance infrastructure investments and provide ongoing services.

PURPOSE

To present, for approval, the Audited 2023 Financial Statements for the Metro Vancouver Districts and the Metro Vancouver Housing Corporation and provide for information the 2023 Annual Financial Results.

BACKGROUND

Legislation requires that annual audited financial statements for the Metro Vancouver Districts and Metro Vancouver Housing Corporation are presented and approved by the Board and submitted to the Province by May 15th each year. The Audited 2023 Financial Statements, prepared in accordance with Canadian Public Sector Accounting Standards (“PSAS”), received a clean audit opinion by the auditors, BDO Canada LLP Chartered Professional Accountants. The statements are currently draft and will be finalized upon approval by the Board on April 26, 2024.

In addition, the 2023 Annual Financial Results Report, in *Appendix 1*, is required to annually be presented to the Finance Committee.

2023 FINANCIAL STATEMENTS

The complete set of 2023 Audited Financial Statements is included in *Attachment 1*, with supplementary information on the 2023 Financial Results presented in *Appendix 1*. These statements are presented for the Boards’ approval and include:

- Audited 2023 Consolidated Financial Statements for the Metro Vancouver Regional District
- Audited 2023 Financial Statements for the Greater Vancouver Sewerage and Drainage District
- Audited 2023 Financial Statements for the Greater Vancouver Water District
- Audited 2023 Financial Statements for the Metro Vancouver Housing Corporation

The consolidated financial statements combine the accounts of the Metro Vancouver Regional District, Greater Vancouver Sewerage and Drainage District, Greater Vancouver Water District and the Metro Vancouver Housing Corporation.

Two key statements included in the audited package, the *Consolidated Statement of Financial Position (Exhibit A)* and the *Consolidated Statement of Operations (Exhibit B)*, similar to the Balance Sheet and Income Statement in private organizations, are the foundation of the audited statements. Highlights of the 2023 financial results and key financial indicators are provided in *Appendix 1*.

It is important to note that there are differences between the presentation in these financial statements and the annual Metro Vancouver budget, which is prepared, in accordance with enabling legislation, to determine the annual revenue requirements to meet expenditure obligations. These differences are outlined below and included in *Appendix 1*.

Operating Results

The *Consolidated Statement of Operations* (Exhibit B in the audited consolidated financial statements) provides key information about the organization's financial activities, revenues, expenses, and annual surplus.

The annual surplus for PSAS purposes, calculated as the difference between consolidated revenues and expenses of \$471.8 million serves as the 2023 addition to the organization's overall accumulated surplus position or net worth of \$6.7 billion. However, the annual surplus in the context of the annual operating budget presentation, is \$12.8M broken out by legal entity in the table below. This surplus is lower than previous year, largely from a challenging economic environment and higher inflation.

The overall surplus of \$12.8M is primarily driven by surpluses in the Water District due to higher water sales (\$6.4M) and underspends in consulting and contracted services and vacancies. In addition, MVHC had a surplus due to slightly higher rental income and lower expenditures in property operations and minor maintenance work. Lastly, the MVRD had a surplus of \$3.3M due to staff vacancies and less spending on consulting and contracted services.

Liquid Waste Services saw an operating deficit of \$3.1M which was primarily due to expedited residuals dewatering project work at Iona Wastewater Treatment Plant and higher input costs in operations and maintenance programs. In addition, although Solid Waste had significantly higher revenues than budgeted (\$15.3M), the function had an operating deficit of \$3.5M which is mainly due to higher contingency disposal costs, recycling and waste center costs for contracts tied to inflation, and landfill closure and post closure costs.

Appendix 1 provides additional details on the 2023 operating financial results by legal entity as well as capital expenditure summary.

Annual Surplus per Legal Entity				
For the year ended December 31, 2023				
(in thousands of dollars)				
	2023		2022	
Water District	\$	2,831	\$	7,954
Sewerage & Drainage District				
Liquid Waste Services		(3,113)		14,021
Solid Waste Services		(3,475)		(2,343)
Metro Vancouver Housing Corporation		13,232		10,309
Regional Programs		3,310		6,649
Annual Surplus	\$	12,785	\$	36,590

Financial Position

The *Consolidated Statement of Financial Position (Exhibit A)* in the audited financial statements provides key information to evaluate the government's ability to finance its liabilities and contractual obligations and to provide ongoing and future services.

For discussion, a *Condensed Statement of Financial Position*, presented net of Translink and member municipalities' debt, is included in *Appendix 1*, along with the five-year trends on the four key financial indicators in this statement (financial assets, net debt, non-financial assets and accumulated surplus).

Financial Assets

Although cash and investment resources for 2023 are lower than 2022 by \$162.3M, Metro Vancouver has a strong liquidity position, with financial assets 2.5 times more than current liabilities. This indicates that the financial assets are more than sufficient to offset the amount of short-term obligations. The five-year financial asset trend in *Appendix 1* shows cash balances are relatively stable, with slight fluctuations due to the timing of grant and debt financing received.

Net Debt

The net debt position indicates the amount by which the organizations' liabilities exceed the financial assets. The net debt position increased by \$227.5 million. Although the amount appears as unfavorable, over 69% of the organization's liabilities is long-term debt which is repayable over several years. In addition, the organization's financial assets are more than sufficient to offset the amount of short-term obligations. This is indicated in the organization's 2.5 to 1 current ratio, which is a measure of an organization's liquidity, defined as current assets divided by current liabilities.

Non-financial Assets

Non-financial assets increased by \$699.3 million in 2022, a direct result of the capital expenditures made in the year, the majority of which were for water and liquid waste infrastructure projects. *Appendix 1, Table 4*, shows that Metro Vancouver's investment in capital assets is growing at a faster rate than liabilities and debt, indicating more of the District's assets are pay-as-you-go or grant funded. Over the past three years, the trend shows liabilities relatively flat and only increasing by 2.65% whereas capital assets have grown 8.72%.

Accumulated Surplus

The 2023 accumulated surplus of \$6.7 billion reflects the member jurisdictions' net investment in the District's consolidated entity. This comprises of reserve balances of \$481.8 million and investment in tangible capital assets (asset value less debt) of \$6.2 billion.

The accumulated surplus increased by \$471.8 million in 2023, which represents the annual accounting surplus for the year, calculated as the difference between revenues and expenses on a PSAS basis.

ALTERNATIVES

The audited financial statements are a statutory requirement prepared in accordance to specific accounting principles. No alternatives are presented.

FINANCIAL IMPLICATIONS

There are no financial implications relative to the approval of the Audited 2023 Financial Statements.

CONCLUSION

The financial statements are part of the legislated reporting requirements for 2023 and staff recommends their approval. As noted in the Auditor's Report, it is the Auditor's opinion that these Financial Statements present fairly the financial position of the Metro Vancouver Districts and the Metro Vancouver Housing Corporation as of December 31, 2023, and the results of their financial activities and changes in their financial position for the year then ended in accordance with Canadian Public Sector Accounting Standards.

Attachments

- Appendix Metro Vancouver 2023 Annual Financial Results
- Attachment 1 Metro Vancouver Districts and Metro Vancouver Housing Corporation Financial Statements for the year ended December 31, 2023
- Attachment 2 Presentation: 2023 Metro Vancouver Financial Results

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METRO VANCOUVER 2023 ANNUAL FINANCIAL RESULTS

For the year ending December 31, 2023

Table of Contents

Contents

INTRODUCTION	3
OPERATING RESULTS	3
Overall Operating Surplus.....	3
Operating Budget Summary	4
Operating Surplus Analysis by Entity	5
CAPITAL EXPENDITURE PROGRAM	6
Capital Expenditure at a Glance.....	6
Capital Expenditure Summary	6
Capital Expenditure Summary (continued).....	7
CONSOLIDATED FINANCIAL STATEMENT HIGHLIGHTS	8
Financial Position	8
TREASURY RESULTS	17
Cash and Investments.....	17

INTRODUCTION

This report presents Metro Vancouver’s 2023 Annual Financial Results and supplements the information contained in the 2023 Audited Financial Statements. This report combines the financial information of Metro Vancouver’s four legal entities, Metro Vancouver Regional District, Greater Vancouver Sewerage and Drainage District, Greater Vancouver Water District and the Metro Vancouver Housing Corporation.

It is important to note that there are differences between the presentation in the audited financial statements, which are prepared in accordance with public sector accounting standards (“PSAS”), and the annual Metro Vancouver budget, which is prepared, in accordance with enabling legislation, to determine the annual revenue requirements to meet expenditure obligations. These differences are outlined on page 13 of this report.

OPERATING RESULTS

Overall Operating Surplus

Metro Vancouver’s 2023 annual operating surplus is \$12.8 million, broken down as follows by legal entity. Key drivers related surplus are highlighted in the following schedules.

Annual Surplus per Legal Entity For the year ended December 31, 2023 (in thousands of dollars)

	2023	2022
Water District	\$ 2,831	\$ 7,954
Sewerage & Drainage District		
Liquid Waste Services	(3,113)	14,021
Solid Waste Services	(3,475)	(2,343)
Metro Vancouver Housing Corporation	13,232	10,309
Regional Programs	3,310	6,649
Annual Surplus	\$ 12,785	\$ 36,590

Operating Budget Summary

Year Ended December 31, 2023

	Budget	Actual	% Actuals to Budget	Variance
REVENUES				
Key Service Revenues				
Water Sales	\$ 338,337,102	\$ 344,788,580	102%	\$ 6,451,478
Liquid Waste Services Levy	324,265,595	324,218,663	100%	(46,932)
Solid Waste Tipping Fees	121,921,930	135,287,005	111%	13,365,075
Metro Vancouver Regional District Requisitions	100,621,354	100,547,051	100%	(74,303)
Housing Rents	43,776,981	44,431,089	101%	654,108
	<u>928,922,962</u>	<u>949,272,388</u>	102%	<u>20,349,426</u>
Other Revenues	46,783,736	105,857,304	226%	59,073,568
Reserve Transfers	115,694,870	98,790,393	85%	(16,904,477)
TOTAL REVENUES	\$ 1,091,401,568	\$ 1,153,920,085	106%	\$ 62,518,517
EXPENDITURES				
Greater Vancouver Water District	\$ 346,060,300	\$ 347,977,040	101%	\$ (1,916,740)
Greater Vancouver Sewerage and Drainage District				
Liquid Waste Services	420,808,663	426,892,851	101%	(6,084,188)
Solid Waste Services	133,391,739	152,210,125	114%	(18,818,386)
Metro Vancouver Housing Corporation	49,463,381	38,393,557	78%	11,069,824
Metro Vancouver Regional District	130,666,493	175,660,980	134%	(44,994,487)
TOTAL EXPENDITURES	\$ 1,080,390,576	\$ 1,141,134,553	106%	\$ (60,743,977)
SURPLUS (DEFICIT)	\$ 11,010,992	\$ 12,785,532		\$ 1,774,540

- Overall revenues exceeded budget of \$62.5M, largely due to a one-time \$50M Provincial Community Grant received in the year, as well as higher water sales (\$6.5M) and solid waste tipping fees (\$13.4M) from higher than anticipated water consumption and system waste flows, respectively.
- Operating expenditures exceeded budget by \$60.7M, largely due to a one-time deferral \$50M Provincial Community Grant as projects related to the grant will be spent in future years; higher expenditures in Liquid Waste due to additional residuals dewatering at Iona and increased recycling and waste centre costs for contracts tied to inflation, contingency disposal costs and landfill closure and post-closures costs in Solid Waste. These overspends were offset by lower expenditures in Housing' capital replacement program.

Operating Surplus Analysis by Entity

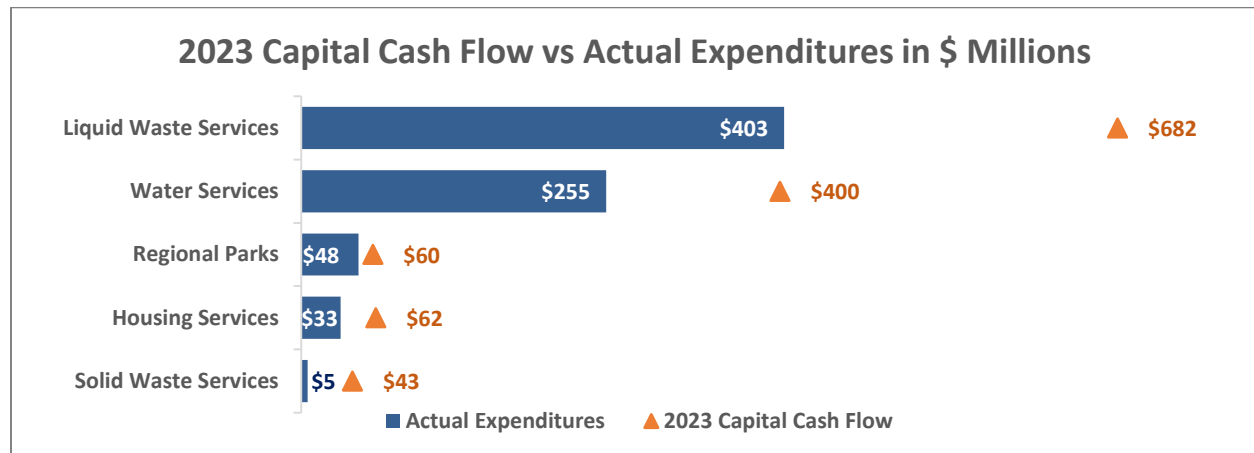
Year ended December 31, 2023

(in thousands of dollars)

	Budget	Actual	Variance	Commentary
Greater Vancouver Water District				
Revenues	\$ 346,060	\$ 350,808	\$ 4,748	Water District surplus of \$2.8M, was mainly due to: <ul style="list-style-type: none"> • Water sales exceeding budget by \$6.5M due to warmer spring and summer months resulting in higher than expected water consumption levels • Other external revenues were higher than budget by close to \$2.7M, offset by \$4.5M less reserve usage than planned due to delayed projects and related underspends • Higher costs in operations and maintenance and minor capital work of \$6.4M mainly from increases in chemicals, permits, consulting, contracting and professional services • Additional Watershed costs incurred during the fire season of \$1.2M • The higher costs were offset by underspends in consulting projects (\$4.4M) and salaries and other program costs (\$1.2M).
Expenditures	346,060	347,977	(1,917)	
Surplus (Deficit)	- \$	2,831	\$ 2,831	
Greater Vancouver Sewerage and Drainage District				
Liquid Waste Services				
Revenues	\$ 420,809	\$ 423,780	\$ 2,971	Liquid Waste function resulted in \$3.1M shortfall for the year. <ul style="list-style-type: none"> • Lower than budgeted spending related to deferred or delayed operating projects (\$3.1M), salary costs due to vacancies (\$0.3M) and lower debt servicing costs (\$0.9M) were offset by higher operations and maintenance costs (\$1.0M) for excess repairs and maintenance work and higher residuals dewatering project work at Iona (\$8.8M) which have contributed to a net expenditure over spend of \$6.1M. • Overall revenues are in excess of budget by close to \$3.0M primarily due to excess development cost charge applications of \$2.9M and other revenue items of \$2.2M, offset by less reserve utilization of \$2.1M for delayed consulting projects.
Expenditures	420,809	426,893	(6,084)	
Surplus (Deficit)	- \$	(3,113)	\$ (3,113)	
Greater Vancouver Sewerage and Drainage District				
Solid Waste Services				
Revenues	\$ 133,392	\$ 148,735	\$ 15,343	Solid Waste shortfall for the year is close to \$3.5M. Although revenues exceeding budget by \$15.3, expenditures were \$18.8M higher than budget mainly from. <ul style="list-style-type: none"> • Higher contingency disposal costs, recycling and waste centre costs for contracts tied to inflation indicators \$21.5M and landfill closure and post closure costs of \$3.3M; offset by lower debt servicing costs of \$0.3M, operational costs of \$1.0M and contributions from operations of \$4.7M. • Tipping fee revenues were 13.3M over budget, which is 11% higher than budget and 7.5% higher than prior year. This increase is largely contributed to higher waste flows (1,003K versus budgeted tonnage of 915K). Economic recovery following the pandemic contributes to the increases in waste quantities. • Other components of revenue include \$3.3M more in contributions from reserve for landfill closure and post closure contributions, offset by less than budget energy revenue of \$1.3M due to the temporary failure of the electrical generator in September through to the end of the year.
Expenditures	133,392	152,210	(18,818)	
Surplus (Deficit)	- \$	(3,475)	\$ (3,475)	
Metro Vancouver Housing Corporation				
Revenues	\$ 60,474	\$ 51,625	\$ (8,849)	Housing's net operating surplus was \$13.2M, \$2.2M more than the planned surplus of \$11.0M. This surplus is contributed to reserves and is relied upon to fund next year's capital maintenance program: <ul style="list-style-type: none"> • Operating expenditures were \$11M lower than budget primarily due to delays in capital replacement projects, resulting in lower related revenue due to funding delays associated with these projects. Tenant rents and other revenues were \$700K higher than budget.
Expenditures	49,463	38,394	11,070	
Surplus (Deficit)	\$ 11,011	\$ 13,231	\$ 2,221	
Metro Vancouver Regional District				
Revenues	\$ 130,666	\$ 178,971	\$ 48,305	Regional District had a surplus of \$3.3M. Although revenues and expenditures appear higher than budget, there was a one-time \$50M increase in revenue with an offsetting expenditure related to the receipt of the Provincial Community Grant that was unspent and deferred at end of year. <ul style="list-style-type: none"> • Overall Expenditures for the District were in fact \$5.1M lower than budget largely due to lower salary costs from staff vacancies, less spending in consulting and contract services from projects delays and fewer meetings, travel, tuition and catering costs than anticipated in the budget. • Regional District tax requisitions and other revenues were largely on budget for the year with the exception of less reserve funding utilized for deferred projects.
Expenditures	130,666	175,661	(44,995)	
Surplus (Deficit)	- \$	3,310	\$ 3,310	

CAPITAL EXPENDITURE PROGRAM

Capital Expenditure at a Glance



Capital Expenditure Summary

Metro Vancouver					
2023 Capital Spending Summary					
For the 12 months ending December 31, 2023					
	Annual	Year to Date			
	2023 Capital Cash Flow	2023 Capital Cash Flow to December 2023	Actual Expenditures	% of Prorated Capital Cash Flow	% of Annual Capital Cash Flow
Housing Services					
Development Capital	62,200,000	62,200,000	32,926,993		
	<u>62,200,000</u>	<u>62,200,000</u>	<u>32,926,993</u>	52.9%	52.9%
Liquid Waste Services					
Collections	203,065,000	203,065,000	129,114,853		
Treatment Plants	478,680,000	478,680,000	274,222,938		
	<u>681,745,000</u>	<u>681,745,000</u>	<u>403,337,790</u>	59.2%	59.2%
Regional Parks					
Capital Development	14,780,000	14,780,000	5,607,917		
Parkland Acquisition Fund Projects	44,990,000	44,990,000	42,288,686		
	<u>59,770,000</u>	<u>59,770,000</u>	<u>47,896,604</u>	80.1%	80.1%
Solid Waste Services					
Landfills	6,150,000	6,150,000	1,016,353		
Recycling and Waste Centres	12,100,000	12,100,000	(185,987)		
Waste To Energy Facilities	24,600,000	24,600,000	4,432,053		
	<u>42,850,000</u>	<u>42,850,000</u>	<u>5,262,419</u>	12.3%	12.3%
Water Services					
Water Mains	263,870,000	263,870,000	198,008,100		
Pump Stations	45,550,000	45,550,000	23,776,709		
Reservoirs	35,300,000	35,300,000	19,497,973		
Treatment Plants	24,015,000	24,015,000	4,701,408		
Others	31,200,000	31,200,000	8,657,903		
	<u>399,935,000</u>	<u>399,935,000</u>	<u>254,642,093</u>	63.7%	63.7%
Total	<u>1,246,500,000</u>	<u>1,246,500,000</u>	<u>744,065,899</u>	59.7%	59.7%

- Overall, total capital expenditures for 2023 were \$744.1M, which represents 59.7% of the annual capital cash flow of \$1.2B.

Capital Expenditure Summary (continued)

- For Housing Services, year-to-date capital expenditures were \$32.9M, which represents 52.9% of the annual capital cash flow of \$62.2M. Lower expenditures than expected are due to delays in various types of city approvals for the Stellar (formerly Southwynde Avenue), Salal Landing (formerly Welcher Avenue), and Malaspina Phase 1 projects.
- For Liquid Waste Services, capital expenditures were \$403.3M, which represents 59.2% of the annual capital cash flow of \$681.7M. Lower expenditures are partly driven by the following;
 - Ongoing negotiation on the construction completion contract award for the North Shore WWTP project.
 - Delays in the completion of the Ground Improvement Design, Pilot Testing projects, and procurement of the WWTP Designer for The Iona WWTP project
 - Delays in outfall project design and archaeology work as well as higher deficiency rectification on active construction elements for the Northwest Langley Program
 - Unforeseen upset conditions that have required some rescheduling for Annacis Island WWTP – Stage 5 Expansion.
 - Technical challenges and a delayed start for the Burnaby Lake Interceptor project
- For Regional Parks, year-to-date capital expenditures were \$47.9M, which represents 80.1% of the annual capital cash flow of \$59.8M. Lower expenditures are related to capital development delays specifically at the Widgeon development project where an extensive amount of archeological consultation and engagement work is required prior to construction. Design consultant delays have resulted in work on trail improvements at Aldergrove and Tynehead shifting to 2024.
- For Solid Waste Services, year-to-date capital expenditures were \$5.3M, which represents 12.3% of the annual capital cash flow of \$42.9M. Longer than expected pre-construction phases were related to a combination of issues including contractor lead projects not proceeding as quickly as expected, additional permitting steps not initially anticipated, and longer than expected timelines to develop municipal agreements for infrastructure development.
- For Water Services, total year-to-date capital expenditures as of December 31, 2023 are \$254.6M, which represents 63.7% of the annual cash flow of \$399.9M. Lower expenditures are partly driven by the following;
 - Savings stemming from a less than expected property acquisition price for the South Fraser Works yard
 - Property acquisition delays for both the Coquitlam Water Main and Barnston Maple Ridge Pump Station projects.
 - Construction delays for Coquitlam Main No. 4 South Section prebuild, Douglas Road main #2 - Still Creek, and Second Narrows Water Supply Tunnel
 - Deferral of Hellings Tank No. 2 to future years as a result of modified servicing arrangements

CONSOLIDATED FINANCIAL STATEMENT HIGHLIGHTS

Financial Position

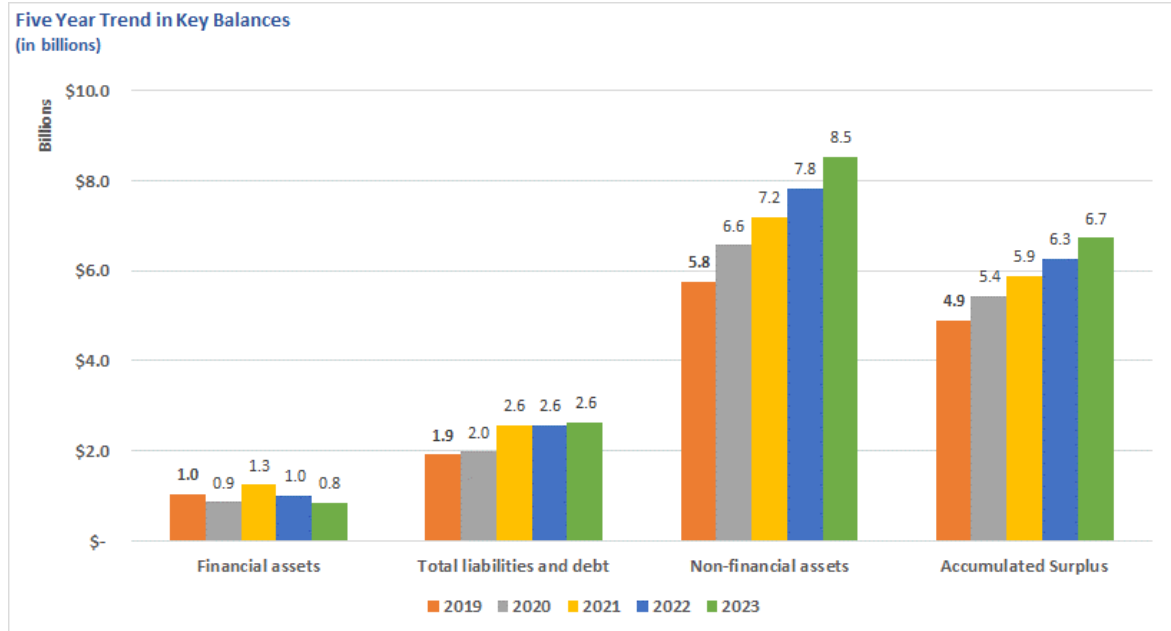
The *Consolidated Statement of Financial Position (Exhibit A of the Audited Financial Statements)* provides key information to evaluate the government's ability to finance its ongoing activities to meet its liabilities and contractual obligations, as well as provide future services. For discussion purposes, a *Condensed Consolidated Statement of Financial Position*, net of Translink and member municipalities' debt is presented in *Table 1* below. The debt owing to the Municipal Finance Authority for TransLink and member municipalities is completely offset by a receivable from these entities, reflecting the fact that these entities are responsible for their debt. Therefore, the impact on Metro Vancouver's financial position is nil and has been excluded from the condensed financial position statement below.

The Statement of Financial Position includes four key items to evaluate financial position. These include, financial assets, total liabilities and net debt, non-financial assets and accumulated surplus. A five-year trend on these items is presented in *Table 2* below.

Table 1: Condensed Consolidated Statement of Financial Position

Condensed Consolidated Statement of Financial Position			
As of December 31, 2023			
<i>(in thousands of dollars)</i>			
	2023	2022	Change
Cash, cash equivalents and investments	\$ 586,236	\$ 779,429	\$ (193,193)
Other financial assets	254,813	223,964	30,849
Total Financial Assets	841,049	1,003,393	(162,344)
Liabilities and deferred revenue	809,849	670,530	139,319
Debt, net of Translink and members	1,823,825	1,898,013	(74,188)
Total Liabilities	2,633,674	2,568,543	65,131
Net Debt	(1,792,625)	(1,565,150)	(227,475)
Non-Financial Assets	8,524,075	7,824,748	699,327
Accumulated Surplus	\$ 6,731,450	\$ 6,259,598	\$ 471,852
Accumulated Surplus (Equity) consists of			
Reserves	481,795	441,040	40,755
Non-financial assets, net of debt and capital funds	6,249,655	5,818,558	431,097
	\$ 6,731,450	\$ 6,259,598	\$ 471,852

Table 2: Five Year Trend in Financial Position Balances



Financial Assets

Metro Vancouver’s financial assets include cash, cash equivalents, investments, accounts receivables and MFA debt reserve fund. The financial assets have been trending lower over the past few years due to the use of grants and reserve funds previously held in cash and from a cash management strategy of timing the financing for capital infrastructure projects when cash requirements are needed.

Other financial assets include accounts receivable (\$224.0million) and the debt reserve fund (\$30.8 million). Other financial assets were \$30.8 million higher than 2022 mainly due to:

- Higher accounts receivable of \$30.3 million from the timing of billings and collections through the normal course of the District’s business. The balance at December 31, 2023 comprises mainly of tipping fees due from commercial solid waste haulers, development cost charge (DCC) income, industrial sewer charges from commercial customers, payments due from our member municipalities for water sales and rebates related to GST from the federal government.
- Increase in the debt reserve fund balance of \$0.5 million due to new debenture debt issued in the year. The debt reserve fund represents the amount required, under agreement with the Municipal Finance Authority (MFA), as security for debt service obligations. This balance fluctuates upward with new debt issues and downward as issues mature.

Total Liabilities and Debt

Total liabilities and debt include trade accounts payables and accrued liabilities, employee future benefits liability, landfill closure and post-closure liability, asset retirement obligations, deferred revenue and long-term debt. Over the past five years, liabilities have increased by \$717 million (37.4%), largely a result of higher debt related to capital infrastructure projects.

Liabilities

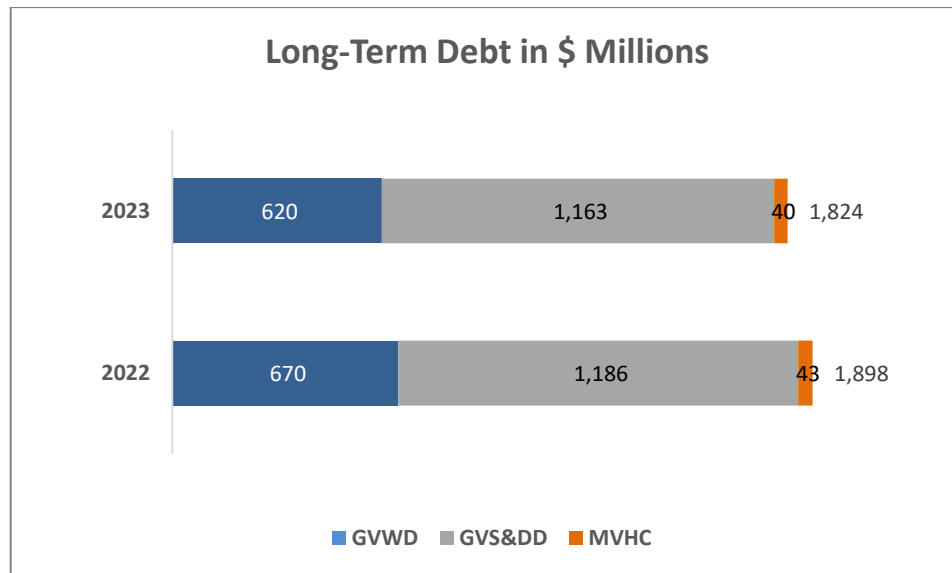
Liabilities in 2023 were \$139.3 million higher than 2022, mainly due to:

- The adoption of the new PSAS Asset Retirement Standard requiring local governments to account for future obligations related to the retirement of assets. This has resulted in a \$55.3 million increase in liabilities for 2023.
- An increase in accounts payable and accrued liabilities of \$19.9 million, mainly due to higher trade payables and construction holdbacks from increased capital infrastructure activity.
- An increase in landfill liability of \$7.3 million largely due to higher inflation and therefore higher anticipated closure costs.
- Higher deferred revenue and refundable deposits of \$57.5 million largely from grant funding received for the Iona Wastewater Treatment Plant, Housing projects and cost sharing agreements that will be applied to future project costs.

Long-term Debt

Long-term debt, net of sinking funds reflects the amount of long term borrowing outstanding at the end of 2023. Sinking funds consist of principal payments made over the term of the debt issue. These payments are invested which along with the interest earned will offset the debt repayment at maturity.

The debt for Metro Vancouver decreased by \$74.2 million as debt and sinking fund payments of \$174.2 million were greater than new long-term borrowing during the year of \$100 million (\$65.0 million for GVS&DD and \$35.0 million for GVWD).



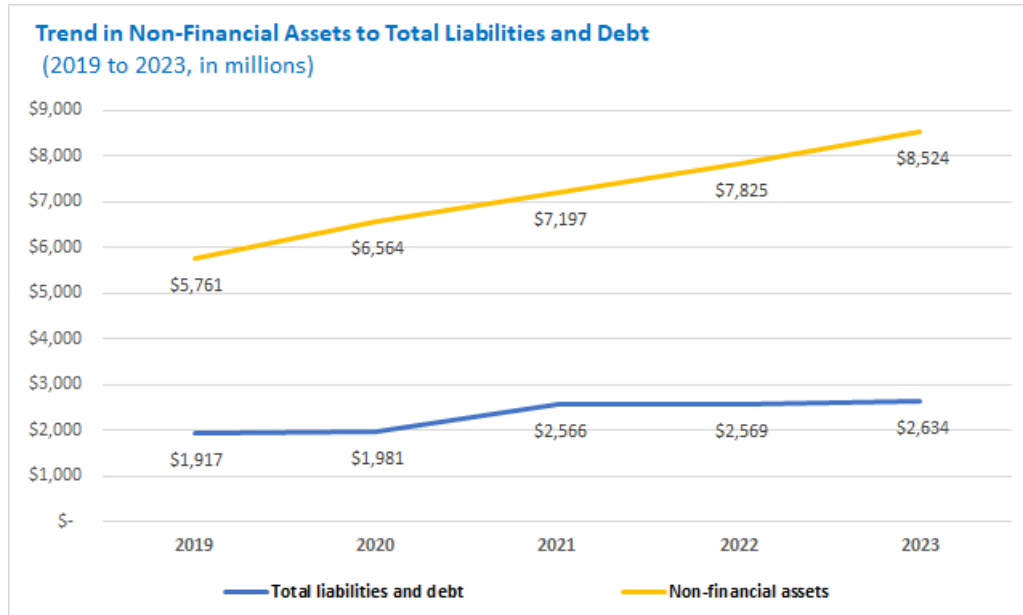
Net Debt

The net debt position indicates the amount by which the organizations’ liabilities exceed the financial assets. The net debt position increased by \$227.5 million. Although the amount appears as unfavorable, over 69% of the organization’s liabilities is long-term debt which is repayable over several years. In addition, the organization’s financial assets are more than sufficient to offset the amount of short-term obligations. This is indicated in the organization’s 2.5 to 1 current ratio, which is a measure of an organization’s liquidity, defined as current assets divided by current liabilities.

Non- Financial Assets (Capital Assets)

Non-financial assets increased by \$699.3 million in 2023, a direct result of the capital expenditures made in the year, the majority of which were for water and liquid waste infrastructure projects. Table 4 below shows that the investment in non-financial assets is growing at a faster rate than liabilities and debt, indicating more of the District’s assets are pay-as-you-go or grant funded. Over the past three years, the trend shows liabilities relatively flat and only increasing by 2.65% whereas non-financial assets have grown 8.72%.

Table 4: Trend in Non-Financial Assets to Total Liabilities



Accumulated Surplus

The 2023 accumulated surplus of \$6.7 billion reflects the member jurisdictions’ net investment in the District’s consolidated entity. This comprises of reserve balances of \$481.8 million and investment in tangible capital assets (asset value less debt) of \$6.2 billion. The investment in capital assets is based on historical cost and does not represent the replacement value of the assets in service for Metro Vancouver.

The accumulated surplus increased by \$471.8 million in 2023, which represents the annual surplus for the year, calculated as the difference between revenues and expenses. Table 5 below shows the difference between the annual surplus for PSAS (\$471.8 million) versus the annual surplus of \$12.8 million for budget purposes. For PSAS purposes, annual surplus does not include contributions to and from reserves, capital contributions or principal payments on long-term debt. A reconciliation of the PSAS surplus to the budgeted surplus is provided below. For details regarding the 2023 Operating Results by legal entity, refer to page 5.

Table 5: PSAS Annual Surplus Reconciled to Budget Surplus

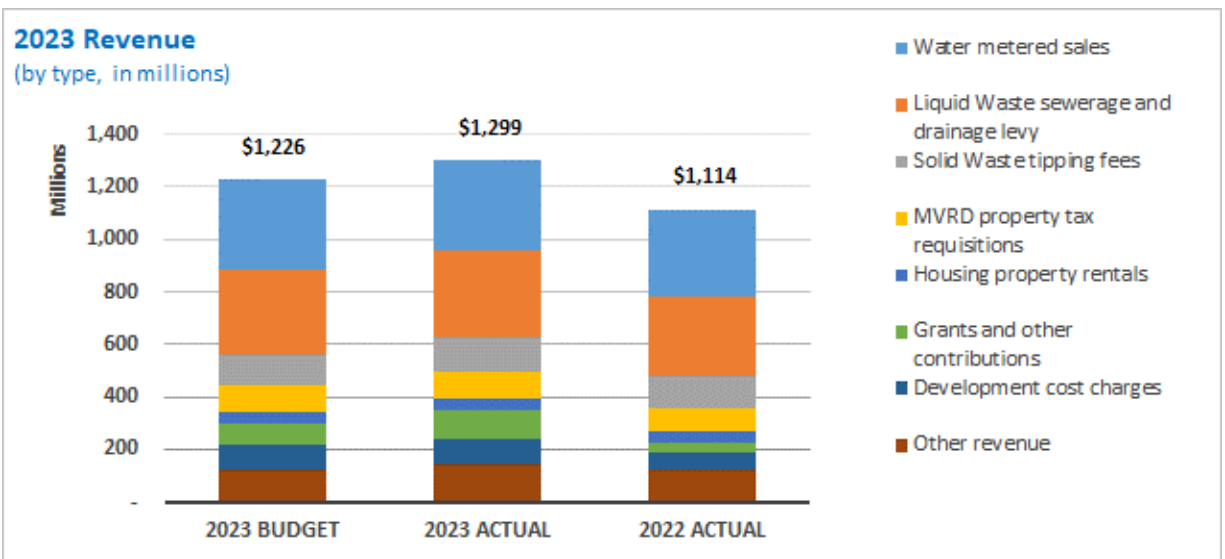
PSAS Financial Statement Surplus Reconciled to Budget Surplus			
For the year ended December 31, 2023			
<i>(in thousands of dollars)</i>			
	Budget	2023	2022
Revenue	\$ 1,225,578	\$ 1,298,706	\$ 1,114,319
Expenses	(815,342)	(826,854)	(736,363)
Annual Surplus per PSAS	410,236	471,852	377,956
Applications and transfers included in operating budget			
Contributions to capital	212,832	214,593	200,721
Payments on long-term debt	147,636	139,056	140,226
Transfers to (from) reserves	2,950	54,160	18,026
PSAS items excluded from annual operating budget			
Amortization of tangible capital assets	(100,755)	(108,532)	(99,337)
Accretion expense on asset retirement obligations	-	(2,231)	-
Sinking fund and debt retirement income	30,622	38,342	27,936
Capital grants, DCC and other capital revenue	110,137	89,687	37,655
Reserve fund interest	6,814	21,020	10,561
Corporate program surplus (transfer to reserves)	-	12,972	5,578
	410,236	459,067	341,366
Annual Surplus based on budget	\$ -	\$ 12,785	\$ 36,590

Financial Statements Revenue and Expenditure Trends**Consolidated Financial Statement Revenues**

Revenues, from all sources (operating, capital and reserve funds), calculated based on PSAS, as presented in the Consolidated Financial Statement of Operations for 2023, was \$1.29 billion, slightly higher than the budget of \$1.23 billion. The table and graph below show that tax levy revenue and housing property rentals are in line with budget and prior year. The increase in revenue is mainly due to:

- Tipping fees exceeding budget by \$13.3M due to higher waste flows
- Water sales \$6.5M more than budget due to warmer weather resulting in higher water consumption.
- Receipt of a one-time \$50M Provincial Community Grant in 2023 to be applied to projects in 2024
- Sinking fund and interest income \$22M higher than expected due to higher than anticipated interest rates on investments, reserves and sinking fund balances.

Revenue By Category (in 000s)	2023 Budget	2023 Actual	2022 Actual
Water metered sales	\$ 338,337	\$ 344,789	\$ 329,678
Liquid Waste sewerage and drainage levy	324,266	324,219	301,425
Solid Waste tipping fees	121,922	135,287	125,797
MVRD property tax requisitions	102,550	102,475	91,708
Housing property rentals	43,718	44,387	43,267
Grants and other contributions	80,512	108,812	37,265
Development cost charges	92,289	95,171	60,583
Other revenue	121,984	143,566	124,596
Total	\$ 1,225,578	\$ 1,298,706	\$ 1,114,319



Consolidated Expenses by Category

Expenses calculated based on PSAS in the Consolidated Financial Statement of Operations for 2023, was \$826.9 million, slightly higher than the budget of \$815.3 million, mainly due to:

- higher than anticipated contracted services in Solid Waste due to higher contingency disposal costs and increased costs for operating contracts tied to inflation indicators
- higher than expected dewatering project work at Iona
- increased interest rates resulting in slightly higher interest on debt of \$0.21M.

These cost overruns were offset by:

- staff vacancies resulting in \$15.0M lower costs for salaries
- lower repairs and maintenance of \$6.6M due to project delays

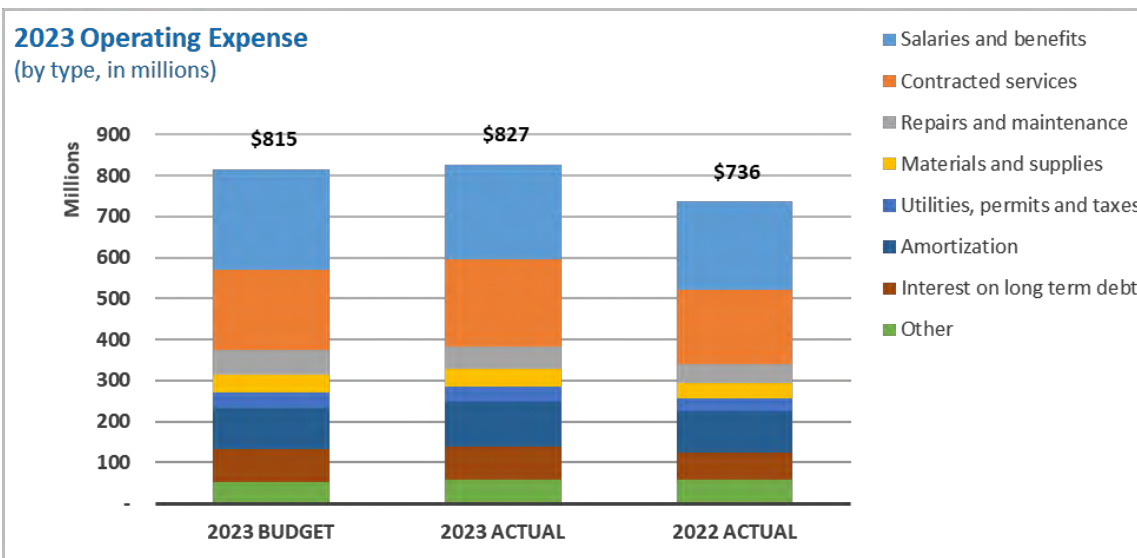
Expenses were \$90.5 million higher than prior year mainly due to overall inflationary increases, as well as, approved spending increases in the annual budget.

APPENDIX 1

2023 Annual Financial Results

Page 15 of 18

Operating Expenses by Category (in 000s)	2023 Budget	2023 Actual	2022 Actual
Salaries and benefits	\$ 246,265	\$ 231,334	\$ 213,969
Contracted services	194,048	212,007	182,918
Repairs and maintenance	61,226	54,558	46,157
Materials and supplies	44,047	44,912	37,236
Utilities, permits and taxes	35,386	35,844	32,341
Other	52,635	58,548	57,464
Amortization	100,755	108,532	99,336
Interest on long term debt	80,980	81,119	66,942
Total	\$ 815,342	\$ 826,854	\$ 736,363



Financial Position Indicators

Illustrated below is the five-year trend to provide additional insight into Metro Vancouver’s financial position. These ratios show that despite the global economic uncertainty over the past few years and current inflationary pressure, Metro Vancouver continues to maintain a healthy financial position.

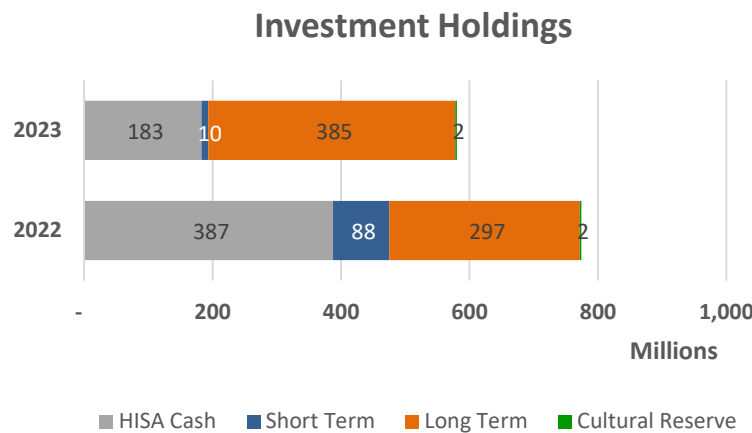
Table 4: Financial Indicators – Five-year Trend

Performance Measure	Commentary	2019	2020	2021	2022	2023
Current Ratio	A measure of the organization's ability to pay its current liabilities from its current assets. Current Ratio is slightly lower mainly due to higher accounts payable and accrued liabilities resulting from increased capital infrastructure activities for the	3.9 to 1	3.4 to 1	3.6 to 1	3.3 to 1	2.5 to 1
Operating Reserves to Total Revenue Ratio	A measure of the organization's ability to adjust to unplanned events and changing circumstances. Operating Reserves to Total Revenue Ratio slightly decreased mainly due to overall increase in total revenue by 16% while operating reserves increased only by 13%	7.2%	9.5%	11.6%	14.5%	14.2%
Debt Servicing Ratio	Percentage of the organization's income that is utilized to service debt payments (comprising of principal and interest). Debt Servicing Ratio is consistent from prior year and constantly met target of not exceeding the Metro Vancouver's mandated maximum debt servicing ratio limit of 40%	12.9%	13.8%	16.6%	19.5%	18.8%
Interest to Total Revenue Ratio	Percentage of the organization's income that is utilized for interest payments. Interest payments as a percentage of revenue is slightly lower than prior year, indicating revenue is increasing at a faster rate (15%) than increase in interest payments (9%).	4.6%	4.7%	6.0%	6.4%	6.0%
Key Services (MVRD Requisition, Water Sales, Sewer Levy, Tipping Fees, Housing rentals) Charges to Total Revenue Ratio	An indicator that shows the extent of revenues derived from core services provided by MVRD. Key Services Charges to Total Revenue Ratio remains consisten between 75-85% with slight fluctuations in years of higher grants and other revenues	68.6%	71.3%	83.0%	85.1%	78.3%

TREASURY RESULTS

Cash and Investments

The chart below summarizes the investment portfolio for 2023 and 2022. Cash and investment balances are lower than 2022, due to the use of deferred grants and reserves previously held in cash, in addition to a cash management strategy of timing the financing for capital infrastructure projects when cash requirements are needed. Long-term investment holdings have increased by \$88M in 2023 to take advantage of the higher market interest rates. In addition, there are increased holdings in cash than short-term investments to take advantage of the higher-interest savings account rates. These rates are favourable and allow for more high-liquid cash in the portfolio.



(in thousands of dollars)	2022	2023
Short-Term	87,505	10,000
High-Interest Saving Account	387,461	182,895
Long-Term	296,931	385,101
Cultural Reserve	2,231	2,231
Total Investment Holdings	774,128	580,227

Investment holdings are grouped into four categories:

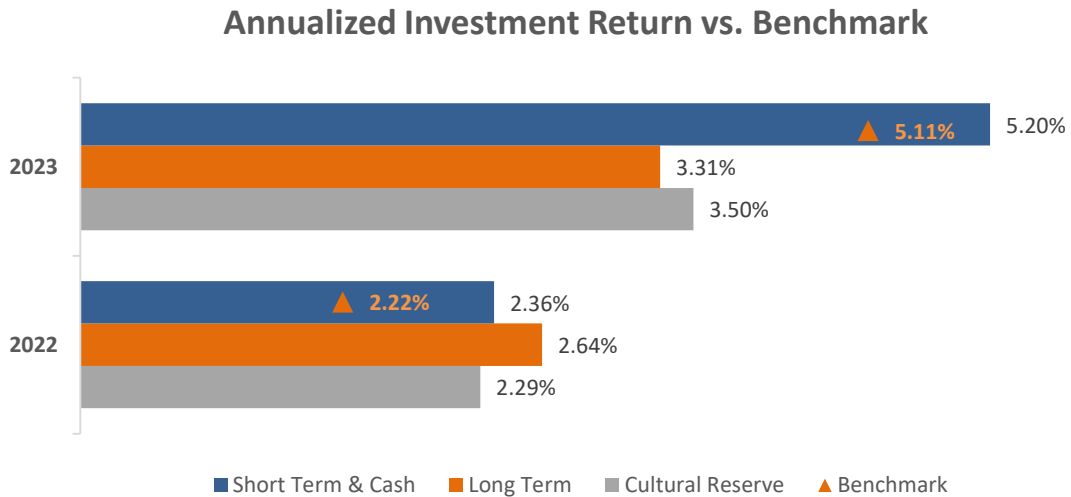
Cash and high-interest saving accounts	Accounts held by Metro Vancouver are fully liquid assets and can be accessed at any time. The majority of these deposits are in pooled high-interest savings accounts of the Municipal Finance Authority of British Columbia (MFA).
Short-term investments	Investments with have terms of less than one year at the time of investment. These may include bankers’ acceptances, Canadian bank bonds, and credit union term deposits.
Long-term investments	Investments with greater than one year at the time of investment. These investments may include Canadian, Provincial, and Canadian bank bonds; guaranteed investment certificates; credit union term deposits greater than one year; and MFA pooled funds.

Cultural reserve investments	Long-term investments where revenues have been set aside to fund Metro Vancouver’s annual contributions to cultural activities.
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Investment Returns

The average annual investment returns are greater than prior year due to the fluctuation in the market rates over the year. As investments matured, they were re-invested with higher yielding products or held in cash to take advantage of high-interest savings account rates and provide sufficient liquidity to accommodate the significant capital expenditure program. Short-term and cash investments return is 5.20%, which has surpassed the MFA benchmark of 5.11%. Average returns have almost doubled over the year from 2.38% to 4.22%.

The chart below summarizes the investment returns by investment category against benchmark for 2022 and 2023:



**METRO VANCOUVER DISTRICTS
AND METRO VANCOUVER HOUSING CORPORATION
(OPERATING AS METRO VANCOUVER)**

Financial Statements

Year ended December 31, 2023

DRAFT - April 4, 2024

Consolidated Financial Statements of

**METRO VANCOUVER
REGIONAL DISTRICT
(OPERATING AS METRO VANCOUVER)**

Year ended December 31, 2023

METRO VANCOUVER REGIONAL DISTRICT

Index to Consolidated Financial Statements

December 31, 2023

	Exhibit
Management Report	
Independent Auditor's Report	
Consolidated Statement of Financial Position	A
Consolidated Statement of Operations	B
Consolidated Statement of Change in Net Debt	C
Consolidated Statement of Cash Flows	D
Notes to Consolidated Financial Statements	

Growing Communities Fund Grant (unaudited)	Schedule 1
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**METRO VANCOUVER DISTRICTS
AND METRO VANCOUVER HOUSING CORPORATION
(Operating as Metro Vancouver)
MANAGEMENT REPORT**

The Consolidated Financial Statements contained in this report have been prepared by management in accordance with Canadian public sector accounting standards. The integrity and objectivity of these statements are management’s responsibility. Management is responsible for all the statements and schedules, and for ensuring that this information is consistent, where appropriate, with the information contained in the financial statements.

Management is also responsible for implementing and maintaining a system of internal controls to provide reasonable assurance that reliable financial information is produced.

The Metro Vancouver Regional District’s Board of Directors is responsible for approving the consolidated financial statements and for ensuring that management fulfills its responsibilities for financial reporting and internal control and exercises this responsibility through the Finance Committee of the Board.

The external auditors, BDO Canada LLP, conduct an independent examination, in accordance with Canadian generally accepted auditing standards, and express their opinion on the consolidated financial statements. Their examination does not relate to the other unaudited schedules attached to the financial statements and statements required by the *Financial Information Act*. The Independent Auditor’s Report outlines the scope of the audit for the year ended December 31, 2023.

On behalf of the Metro Vancouver Regional District, Greater Vancouver Sewerage and Drainage District, Greater Vancouver Water District, and Metro Vancouver Housing Corporation.

Harji Varn, Chief Financial Officer

Date: April 26, 2024

Independent Auditor's Report

To the Board of Directors of Metro Vancouver Regional District

Opinion

We have audited the consolidated financial statements of Metro Vancouver Regional District (the "Consolidated Entity"), which comprise the consolidated Statement of Financial Position as at December 31, 2023, and the consolidated Statements of Operations, Change in Net Debt and Cash Flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Consolidated Entity as at December 31, 2023 and the results of its operations, change in net debt, and cash flows for the year then ended in accordance with Canadian public sector accounting standards.

Basis for Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Consolidated Financial Statements* section of our report. We are independent of the Consolidated Entity in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with Canadian public sector accounting standards, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Consolidated Entity's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Consolidated Entity or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Consolidated Entity's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements,

whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Consolidated Entity's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Consolidated Entity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Consolidated Entity to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Consolidated Entity to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Other Matter – Supplementary Information

We draw attention to the fact that the supplementary information included in Schedule 1 does not form part of the audited consolidated financial statements. We have not audited or reviewed this supplementary information and, accordingly, we do not express any opinion, review conclusion or any other form of assurance on this supplementary information.

Chartered Professional Accountants

Vancouver, British Columbia

REPORT DATE

METRO VANCOUVER REGIONAL DISTRICT

Exhibit A

Consolidated Statement of Financial Position

As at December 31, 2023

(in thousands of dollars)

	2023	2022
Financial Assets		
Cash and cash equivalents	\$ 183,852	\$ 388,043
Accounts receivable (note 4)	223,952	193,673
Due from TransLink and member municipalities (note 5)	1,153,855	1,260,527
Investments (note 6)	402,384	391,386
Debt reserve fund (note 7)	67,008	65,522
	2,031,051	2,299,151
Liabilities		
Accounts payable and accrued liabilities (note 8)	319,287	299,379
Employee future benefits (note 9)	14,277	14,602
Landfill closure and post-closure liability (note 10)	48,371	41,026
Asset retirement obligation (note 11)	55,332	—
Deferred revenue and refundable deposits (note 12)	400,547	343,047
Debt reserve fund, member municipalities, and TransLink (note 7)	36,147	35,231
Debt (net of sinking funds) (note 13)		
Metro Vancouver Districts and Housing Corporation	1,809,589	1,884,302
TransLink and member municipalities	1,140,126	1,246,714
Total debt	2,949,715	3,131,016
	3,823,676	3,864,301
Net Debt	(1,792,625)	(1,565,150)
Non-Financial Assets		
Tangible capital assets (note 14)	8,492,990	7,796,302
Inventories of supplies	12,594	11,864
Prepaid land leases (note 15)	4,673	4,868
Prepaid expenses	13,818	11,714
	8,524,075	7,824,748
Accumulated surplus (note 16)	\$ 6,731,450	\$ 6,259,598

Contractual obligations and rights (note 17)

Contingencies (note 18)

The accompanying notes are an integral part of these consolidated financial statements.

Chief Financial Officer

Board Chair

METRO VANCOUVER REGIONAL DISTRICT

Exhibit B

Consolidated Statement of Operations

Year ended December 31, 2023

(in thousands of dollars)

	2023 Budget (note 19)	2023 Actual	2022 Actual
Revenues (note 20)			
MVRD property tax requisitions	\$ 102,550	\$ 102,475	\$ 91,708
Metered sale of water	338,337	344,789	329,678
Sewerage and drainage levy	324,266	324,219	301,425
Tipping fees	121,922	135,287	125,797
Housing property rentals	43,718	44,387	43,267
BODTSS industrial charges	12,496	12,286	12,431
Development cost charges	92,289	95,171	60,583
Grants and other contributions	80,512	108,812	35,594
User fees, recoveries, and other revenue	44,185	47,320	46,411
Sinking fund and interest income	37,284	56,695	40,353
Sinking fund income, members and TransLink	28,019	27,265	27,072
	1,225,578	1,298,706	1,114,319
Expenses (note 20)			
Liquid waste services	309,131	321,206	274,160
Solid waste services	129,514	152,615	142,930
Water operations	206,792	207,961	184,446
Housing rental operations	47,697	34,773	34,516
Regional parks	48,358	42,325	38,405
General government services	7,953	8,057	7,167
Air quality	15,774	12,820	11,101
Regional employers services	3,461	2,936	2,362
E911 emergency telephone system	5,773	5,748	5,269
Regional planning	5,166	4,328	4,140
Invest Vancouver	3,867	3,807	2,420
Housing planning and policy	2,190	1,356	1,031
Electoral area service	512	656	654
Regional global positioning system	354	340	169
Sasamat volunteer fire department	549	385	350
Regional emergency management	232	276	171
Sinking fund income attributed to members and TransLink	28,019	27,265	27,072
	815,342	826,854	736,363
Annual surplus	410,236	471,852	377,956
Accumulated surplus, beginning of year	6,259,598	6,259,598	5,881,642
Accumulated surplus, end of year (note 16)	\$ 6,669,834	\$ 6,731,450	\$ 6,259,598

The accompanying notes are an integral part of these consolidated financial statements.

METRO VANCOUVER REGIONAL DISTRICT

Exhibit C

Consolidated Statement of Change in Net Debt

Year ended December 31, 2023

(in thousands of dollars)

	2023 Budget (note 19)	2023 Actual	2022 Actual
Annual surplus	\$ 410,236	\$ 471,852	\$ 377,956
Change in tangible capital assets			
Acquisition of tangible capital assets	(1,263,197)	(807,090)	(723,206)
Amortization of tangible capital assets	100,560	108,337	99,142
Loss (gain) on disposal of tangible capital assets	—	1,594	(1,359)
Proceeds on disposal of tangible capital assets	—	471	1,600
	(1,162,637)	(696,688)	(623,823)
Change in other non-financial assets			
Acquisition of prepaid expenses	—	(13,818)	(11,714)
Use of prepaid expenses	—	11,714	8,723
Amortization of prepaid land leases	195	195	194
Acquisition of inventories of supplies	—	(12,594)	(11,864)
Consumption of inventories of supplies	—	11,864	10,938
	195	(2,639)	(3,723)
Change in net debt	(752,206)	(227,475)	(249,590)
Net debt, beginning of year	(1,565,150)	(1,565,150)	(1,315,560)
Net debt, end of year	\$ (2,317,356)	\$ (1,792,625)	\$ (1,565,150)

The accompanying notes are an integral part of these consolidated financial statements.

METRO VANCOUVER REGIONAL DISTRICT

Exhibit D

Consolidated Statement of Cash Flows

Year ended December 31, 2023

(in thousands of dollars)

	2023	2022
Cash provided by (used in):		
Operating transactions:		
Annual surplus	\$ 471,852	\$ 377,956
Items not involving cash		
Amortization of tangible capital assets	108,337	99,142
Amortization of prepaid land leases	195	194
Accretion expense	2,231	—
Sinking fund income	(55,334)	(54,931)
Debt reserve fund income	(2,033)	(1,455)
Accrued interest and unamortized premium or discount	(407)	(718)
Loss (gain) on disposal of tangible capital assets	1,594	(1,359)
Employee future benefit expense	3,174	2,911
Change in landfill closure and post-closure liability	7,345	8,119
Change in non-cash financial assets and liabilities		
Accounts receivable	(30,279)	(622)
Due from TransLink and member municipalities	106,672	(166,387)
Accounts payable and accrued liabilities	19,908	(38,041)
Employee future benefits paid	(3,499)	(2,216)
Deferred revenue and refundable deposits	57,500	2,031
Debt reserve fund, member municipalities, and TransLink	916	52
Inventories of supplies	(730)	(926)
Prepaid expenses	(2,104)	(2,991)
Net change in cash from operating transactions	685,338	220,759
Capital transactions:		
Proceeds on sale of tangible capital assets	471	1,600
Acquisition of tangible capital assets (note 21(a))	(753,989)	(723,206)
Net change in cash from capital transactions	(753,518)	(721,606)
Investing transactions:		
Acquisition of investments	(203,467)	(403,818)
Investment maturities	192,876	302,732
Net change in cash from investing transactions	(10,591)	(101,086)
Financing transactions:		
Debenture debt and mortgages issued	102,500	452,970
Debt reserve fund issuances	(1,025)	(4,530)
Debt reserve fund maturity	1,572	4,851
Sinking fund payments	(220,368)	(193,570)
Principal repayments on long-term debt	(8,099)	(8,048)
Sinking fund retirement	106,291	182,352
Debenture debt maturity	(106,291)	(182,352)
Net change in cash from financing transactions	(125,420)	251,673
Net change in cash and cash equivalents	(204,191)	(350,260)
Cash and cash equivalents, beginning of year	388,043	738,303
Cash and cash equivalents, end of year	\$ 183,852	\$ 388,043

Supplementary cash flow information (note 21)

The accompanying notes are an integral part of these consolidated financial statements.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 1

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

1. Significant Accounting Policies

The consolidated financial statements of the Metro Vancouver Regional District (the “District”) are prepared by management in accordance with Canadian public sector accounting standards. Significant accounting policies adopted by the District are as follows:

Government Reporting Entity

The consolidated financial statements include the assets, liabilities, revenues, and expenses of four legal entities: the Metro Vancouver Regional District (“MVRD”), the Greater Vancouver Sewerage and Drainage District (“GVS&DD”), the Greater Vancouver Water District (“GVWD”), and the Metro Vancouver Housing Corporation (“MVHC”).

The MVRD was established under the Local Government Act of British Columbia. It provides a number of specific and agreed upon services directly to the public and its member municipalities, the major one of which is the ownership and operation of a network of regional parks. Its Board of Directors comprises mayors and councillors from the member municipalities appointed for that purpose by the municipalities. The number of directors, and the number of votes each may cast, is based upon the population of the municipality. Under the legislation, all staff, even if their work is under the authority of the related legal entities, are employees of the MVRD.

The GVS&DD was established by an Act of the same name in 1956. Its two principal responsibilities are the collection, treatment, and discharge of liquid waste for the municipalities of the MVRD, and the disposal of solid waste for the municipalities of the MVRD and the public. GVS&DD owns and operates wastewater treatment plants and a related collection network connected to the municipal collection systems, and several solid waste facilities including a waste-to-energy facility. Its Board of Directors comprises the same councillors and mayors as appointed to the MVRD Board by the participating municipalities.

The GVWD was established by an Act of the same name in 1924. Its primary responsibility is the supply of potable water to its member municipalities. Its Board of Directors comprises the same councillors and mayors as appointed to the MVRD Board by the participating municipalities. GVWD owns or holds under a 999-year lease from the Province, an extensive closed watershed network as its source of supply. It owns a series of dams, reservoirs, water treatment plants and a distribution network connecting to the municipal distribution systems. GVWD also owns and is responsible for operating and maintaining office buildings that are leased to MVRD and its related entities.

The MVHC is a wholly-owned subsidiary of the MVRD. The MVHC was incorporated under the Business Corporations Act (British Columbia) to own and operate housing sites within the Lower Mainland for the purpose of providing affordable rental housing on a non-profit basis.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 2

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

1. Significant Accounting Policies (continued)

Basis of Consolidation	The consolidated financial statements reflect the combined assets, liabilities, revenues, and expenses of the reporting entity. The reporting entity comprises the MVRD, the GVS&DD, the GVWD, and the MVHC. These organizations are controlled by the District. All transactions and balances between these legal entities have been eliminated on consolidation.
Basis of Accounting	The District follows the accrual method of accounting for revenue and expenses. Revenue is recognized in the year in which it is earned and measurable. Expenses are recognized as they are incurred and measurable as a result of the receipt of goods or services and/or the legal obligation to pay.
Government Transfers	<p>Government transfers, are recognized as revenue in the financial statements when the transfer is authorized and any eligibility criteria are met, except to the extent that transfer stipulations give rise to an obligation that meets the definition of a liability. The transfer of revenue is initially deferred and then recognized in the statement of operations as the stipulation liabilities are settled.</p> <p>When the District is deemed the transferor, the transfer expense is recognized when the recipient is authorized and has met the eligibility criteria.</p>
Deferred Revenue and Refundable Deposits	Deferred revenue represents licenses, permits, development cost charges, security deposits, restricted contributions, and other fees which have been collected, but for which the related services or obligations have yet to be performed. These amounts will be recognized as revenue in the fiscal year the services are performed or obligations and stipulations have been met.
Sinking Fund, Debt Retirement, and Interest Income	Interest income is reported as revenue in the period earned. When required, based on external restrictions, interest income earned on deferred revenue is added to and forms part of the deferred revenue balance, and is recognized into income when related stipulations are met. Any surpluses received from upon debt retirement are recorded in the year received.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 3

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

1. Significant Accounting Policies (continued)

Cash Equivalents Cash equivalents include highly liquid financial instruments with a term to maturity of ninety days or less at the date of acquisition. Cash equivalents are recorded at the lower of cost plus accrued interest.

Investments Investments consist of both long and short-term instruments and are recorded at amortized cost using straight-line method.

Financial Instruments The District's financial instruments consist of cash and cash equivalents, investments, accounts receivable, accounts payable and accrued liabilities, and amounts due to and from TransLink and member municipalities. Cash and cash equivalents are highly liquid financial instruments held at Canadian regulated financial institutions and are measured at cost. Accounts receivable and amounts due from government organizations are recorded at cost less any amount for valuation allowance. The District's investments include government bonds issued by the federal and provincial governments of Canada, the Municipal Finance Authority of British Columbia ("MFA") pooled investment funds, the MFA money market fund and the MFA government ultra-short bond. These financial instruments are initially recorded at fair market value and subsequently measured at cost, any gains or losses are recognized at the trade date. All debt and other financial liabilities are recorded using cost or amortized cost. Interest attributable to financial instruments are reported in the statement of operations.

The classification of financial instruments is determined upon inception and financial instruments are not reclassified into another measurement category for the duration of the period they are held. Financial instruments are measured at cost or amortized cost upon initial recognition. All financial assets are assessed for impairment on an annual basis and any such impairment is recorded in the statement of operations. A write-down of a financial asset to reflect a loss in value is not reversed for a subsequent increase in value.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 4

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

1. Significant Accounting Policies (continued)

Employee Future Benefits

The District and its employees participate in the Municipal Pension Plan. The Municipal Pension Plan is a multi-employer contributory defined benefit pension plan. Payments made in the year are expensed.

Under the terms of various collective agreements and compensation policies, the District provides paid sick leave to eligible employees and in certain agreements allows unused sick days to accumulate. There are no payouts of unused sick days at termination. In addition, employees acquire certain employee benefits on termination and retirement. These include days for severance based on years of service, vacation based on years of service, Worker's Compensation top-up, and a full year's vacation entitlement in the year of retirement. The costs of these benefits are actuarially determined based on service and best estimates of retirement ages and expected future salary and wage increases. The obligation under these benefit plans is accrued based on projected benefits as the employees render services necessary to earn the future benefits. Actuarial gains and losses are amortized over the expected average remaining service period of the related employee group, commencing the year after the gain or loss arises.

Liability for Contaminated Sites

A liability for remediation of a contaminated site is recognized when the site is no longer in productive use and the following criteria are satisfied: an environmental standard exists; contamination exceeds the standard; the District is either directly responsible or has accepted responsibility for remediation; it is expected that future economic benefits will be given up and a reasonable estimate of the liability can be made. Liabilities for contaminated sites is reported in accounts payable and accrued liabilities.

Landfill Closure and Post-Closure Liability

The District is obligated for its share of landfill closure and post-closure costs, in accordance with agreements (note 10). The District does not own or control the landfills and, therefore, has recorded its obligation as a liability, in accordance with PS 3200 - Liabilities, and not as an asset retirement obligation.

The estimated present value of the District's share in landfill closure and post-closure costs to be incurred on a landfill site owned and controlled by the City of Vancouver is recognized as a liability. This liability is recognized based on estimated future expenses, including estimated inflation discounted to the current date and accrued based on the proportion of the total capacity of the landfill used and the District's proportionate usage thereof as of the date of the statement of financial position. The change in this estimated liability during the year is recorded as an expense in operations. These estimates are reviewed and adjusted annually and any changes are recorded on a prospective basis.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 5

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

1. Significant Accounting Policies (continued)

Asset Retirement Obligation

Asset Retirement Obligations (AROs) are recognized for statutory, contractual, or legal obligations associated with the retirement of tangible capital assets when those obligations result from the acquisition, construction, development, or normal operation of the assets. The ARO liability is initially recorded at fair value, which is an amount that is the best estimate of the expenditure required to retire a tangible capital asset determined using present value calculation, and the resulting costs are capitalized as part of the carrying amount of the related tangible capital asset. This ARO liability is subsequently reviewed at each financial reporting date and adjusted for the passage of time and for any revisions to the timing, amount required to settle the obligation or the discount rate. The changes in the AROs for the passage of time are recorded as accretion expense in the consolidated statement of operations and all other changes are adjusted to the carrying value of the tangible capital asset. This cost is amortized on the same basis as the amortization expense of the tangible capital asset. If the related tangible capital asset is unrecognized or no longer in productive use, the asset retirement costs are expensed.

An asset retirement obligation is recognized when, as at the financial reporting date, all of the following criteria are met:

- a) There is a legal obligation to incur retirement costs in relation to a tangible capital asset;
- b) The past transaction or event giving rise to the liability had occurred;
- c) It is expected that future economic benefits will be given up; and
- d) A reasonable estimate of the amount can be made.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 6

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

1. Significant Accounting Policies (continued)

Non-Financial Assets

Non-financial assets are not available to discharge existing liabilities and are held for use in the provision of services. They have useful lives extending beyond the current year and are not intended for sale in the ordinary course of operations.

Tangible Capital Assets

Tangible capital assets are recorded at cost which includes amounts that are directly attributable to acquisition, construction, development, or betterment of the asset, including asset retirement costs that are capitalized as part of the carrying amount of the related tangible capital asset. The cost, less residual value, of the tangible capital assets, except land, is amortized over their estimated useful lives. All assets are amortized on a straight line basis as follows:

Asset	Useful Life - Years
Buildings	
Housing	25 - 65
Parks	50 - 100
Watershed	25
Corporate – Head Office	40
Infrastructure	
Sewer	
Wastewater treatment, pumping stations	40 - 107
Interceptors and trunk sewer, drainage	100
Solid Waste	25-30
Water	
Dams, reservoirs	150
Supply mains	100
Distribution systems, drinking water treatment	50 - 101
Parks	
Bridges, culverts, fencing	20 – 40
Trails	100
Roads, erosion protection, water and sewer systems	100
Information technology systems and networks	5 – 10
Vehicles	5 – 20
Machinery, equipment, furniture, and fixtures	5 – 20

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 7

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

1. Significant Accounting Policies (continued)

Non-Financial Assets (continued)

Tangible Capital Assets

a. Annual amortization

Annual amortization begins when the asset is available for use and is expensed over its useful life. Assets under construction are transferred to the appropriate asset class and are amortized from the date the asset is available for use.

b. Contributions of tangible capital assets

Contributions of tangible capital assets are recorded at their estimated fair value at the date of receipt and as contribution revenue.

c. Works of art and cultural and historic assets

Works of art and cultural and historic assets are not recorded as assets in these financial statements.

d. Interest capitalization

The Districts do not capitalize interest costs associated with the acquisition or construction of a tangible capital asset.

Inventories of Supplies

Inventories of supplies held for consumption are recorded on a first-in, first-out basis.

Prepaid Land Leases

Prepaid land leases are recorded at historical cost less accumulated amortization. Upon expiration of the lease contract, the property will revert to the lessor or the lease will be renegotiated. Prepaid land leases are amortized on a straight-line basis over the lease term.

Revenue Recognition

Property tax revenues and sewerage and drainage revenues from member municipalities are recognized in the year they are levied. Metered sale of water, tipping fees, permits, cost sharing, and other revenues are recognized as revenue on an accrual basis according to the usage and rates approved and set by the Board. Housing property rental revenue is recognized over the rental period once the tenant commences occupancy, rent is due and collection is assured.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 8

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

1. Significant Accounting Policies (continued)

Segmented Information

A segment is defined as a distinguishable activity or group of activities of a government for which it is appropriate to separately report financial information to achieve the objectives of the standard. The District has provided definitions of the District's segments as well as presented financial information in segmented format in note 20.

Use of Estimates

The preparation of the consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the period. These estimates and assumptions are based on management's best information and judgment and may differ from actual results. Adjustments, if any, will be reflected in the consolidated financial statements in the period that the change in estimate is made, as well as in the period of settlement if the amount is different.

Significant areas requiring the use of management's judgment relate to the determination of contaminated sites liabilities, amounts to settle and expected timing of asset retirement obligations, the employee future benefits liability, the estimate of accruals for projects in progress, amortization rates and useful lives for tangible capital assets, the landfill closure and post-closure liability, the assessment of the impairment of tangible capital assets and work in progress, and the assessment of the outcome of contingent liabilities.

2. Adoption of Accounting Policies

- a. In 2023, the District implemented the new Public Sector Accounting Handbook Standard, PS 3280 Asset Retirement Obligations. The standard requires the reporting of legal obligations associated with the retirement of tangible capital assets by public sector entities. The District has elected to implement this standard prospectively for the year ended December 31, 2023. Results for the year ended December 31, 2022 have not been restated.
- b. Metro Vancouver Regional District adopted Public Sector Accounting Standard PS 3450 Financial Instruments effective January 1, 2023. This new standard requires the remeasurement of gains and losses of financial instruments. Metro Vancouver Regional District has determined there are no remeasurement gains or losses for fiscal years 2022 or 2023 and as such no adjustment to prior year or the opening balances is required.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 9

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

3. Financial Risk Management

Based on the financial instruments held, the District is potentially exposed to credit risk, market risk, interest rate risk, and liquidity risk.

Credit Risk is low and related to the possibility of failure to collect from another party and encompasses cash, investments, and accounts receivable. The risk exposure is limited to their carrying amounts as at the date of the statement of financial positions. The District's accounts receivable primarily consists of amounts due from member jurisdictions, which does not pose a high risk of uncollectable amounts. To mitigate credit risk, the District regularly reviews the collectability of its accounts receivable and if needed, will establish an allowance based on its best estimate of potentially uncollectible amounts. As at December 31, 2023, the amount of allowance deemed uncollectable is \$nil (2022 - \$nil).

Market risks and interest rate risks encompasses cash, investments, and debt instruments. The market is volatile and susceptible to change. To mitigate the risk, the District closely watches the Bank of Canada rates and reviews inflationary impacts. The District's cash is deposited in high-interest savings accounts at federally regulated banks. The District follows the Board approved investment policy and legislative requirements for the management of its investments, which requires low risk investment products, such as fixed income securities, such as cash, government bonds and MFA pooled investment funds. The investment gains or losses due to market interest rate changes are recognized at the trade date. To mitigate risks, the investment portfolio is managed regularly through cash forecasts and investments are made into low credit risk rating bonds and pools. The District's exposure to interest rate risk in relation to debt instruments is limited to long-term debt and temporary financing. The risk applies to long-term debt when amortization periods exceed the initial locked-in term. Temporary financing is subject to daily floating rates, which can result in variability over the course of short-term period. Interest rate risk related to debt instruments is managed through budget and cash forecasts. Interest rates have increased during the year, which primarily affects interest costs for new or refinanced debt and temporary borrowing, as well as, interest earnings on investments.

Liquidity risk is low and mitigated by regular monitoring of cash flows and forecasts. The District's cash is held in federally and provincially regulated banks with pooled accounts on behalf of its four legal entities: the Metro Vancouver Regional District, the Greater Vancouver Sewerage and Drainage District, the Greater Vancouver Water District, and the Metro Vancouver Housing Corporation. To meet financial obligations and mitigate liquidity risk a minimum of 25% of the District's pooled portfolio balance is held in high liquid cash in high interest savings accounts.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 10

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

4. Accounts Receivable

	2023	2022
GVWD	\$ 72,544	\$ 68,590
GVS&DD	134,184	108,083
MVHC	1,695	2,743
MVRD	15,529	14,257
	\$ 223,952	\$ 193,673

5. Due from TransLink and Member Municipalities

The District is reimbursed for amounts paid to the Municipal Finance Authority of British Columbia ("MFA") for the obligations incurred on behalf of its member municipalities and TransLink whose undertakings were financed out of the proceeds of these obligations (refer to note 13). The amount recoverable is net of sinking funds, held and invested by the MFA, and includes accrued interest as follows:

	Net Debt Recoverable	Accrued Interest	2023	2022
TransLink	\$ 189,535	\$ 5,136	\$ 194,671	\$ 239,493
Member municipalities	950,591	8,593	959,184	1,021,034
	\$ 1,140,126	\$ 13,729	\$ 1,153,855	\$ 1,260,527

6. Investments

	Yields - %	Maturity Dates	2023	2022
Bonds:				
Government	2.06 - 4.44	February 2024 - March 2031	\$ 56,231	\$ 60,657
Corporate	1.97 - 5.67	June 2024 - March 2028	77,605	47,583
Unamortized premium			5,052	4,646
			138,888	112,886
Term deposits	4.90 - 5.25	July 2024 - July 2025	15,000	63,500
GICs	1.35 - 6.25	January 2024 - April 2028	248,496	215,000
Total			\$ 402,384	\$ 391,386

Government bonds include debt securities issued by the federal and provincial governments of Canada, and the Municipal Finance Authority of British Columbia. Corporate bonds include Schedule I and II Chartered Banks of Canada.

Market value of investments as at December 31, 2023 was \$409,430,305 (2022 - \$393,365,298).

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 11

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

7. Debt Reserve Fund

The MFA provides financing for regional districts and member municipalities. The MFA is required to establish a Debt Reserve Fund for each debenture issue equal to one-half the average annual installment of principal and interest. The debt reserve fund is comprised of cash deposits equal to 1% of the principal amount borrowed and a non-interest bearing demand note for the remaining requirement. Cash deposits held by the MFA are payable with interest to the ultimate borrower when the final obligations under the respective loan agreements have been made.

If, at any time, the District has insufficient funds to meet payments due on its obligations to the MFA, the payments will be made from the debt reserve fund. The demand notes are callable only if there are additional requirements to be met to maintain the level of the debt reserve fund. At December 31, 2023, \$130,591,793 (2022 - \$130,539,983) in callable demand notes were outstanding and have not been recorded in the statement of financial position.

	2023	2022
Cash deposits held by MFA on behalf of:		
TransLink and member municipalities	\$ 36,147	\$ 35,231
Metro Vancouver Districts	30,861	30,291
	\$ 67,008	\$ 65,522

8. Accounts Payable and Accrued Liabilities

	2023	2022
Trade accounts	\$ 175,935	\$ 166,809
Construction holdbacks	98,568	79,654
Accrued interest on debt	27,965	27,606
Wage accruals	15,619	23,815
Contaminated sites (a)	1,200	1,495
	\$ 319,287	\$ 299,379

(a) In 2023, the District accrued \$1,200,368 (2022 - \$1,494,860) to remediate contaminated soils at two of its properties. The remediation work for the properties will be completed in 2024 and 2026.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 12

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

9. Employee Future Benefits

The employee future benefits have been based on the results of an actuarial valuation done by an independent actuarial firm. A full valuation was performed as of December 31, 2022, with results projected to December 31, 2023.

Information about liabilities for the District's employee benefit plans is as follows:

	2023	2022
Accrued benefit obligation:		
Balance, beginning of year	\$ 18,627	\$ 19,008
Current service cost	1,571	1,572
Interest cost	807	467
Benefits paid	(3,499)	(2,216)
Actuarial gain (loss)	63	(204)
Accrued benefit obligation, end of year	17,569	18,627
Unamortized actuarial loss	(3,292)	(4,025)
Accrued liability, end of year	\$ 14,277	\$ 14,602

	2023	2022
Employee future benefit expense:		
Current service cost	\$ 1,571	\$ 1,572
Interest cost	807	467
Amortization of the actuarial loss	796	872
	\$ 3,174	\$ 2,911

The significant actuarial assumptions adopted in measuring the District's accrued benefit obligation are as follows:

	2023	2022
Discount rate	4.2%	4.4%
Expected future inflation rate	2.5%	2.5%
Expected average remaining service period	12 years	12 years

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 13

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

10. Landfill Closure and Post-Closure Liability

The District is responsible for its share of closure and post-closure costs at landfill sites as detailed below.

The Vancouver Landfill is located in Delta, BC and is owned and controlled by the City of Vancouver. In accordance with a tripartite agreement with the City of Vancouver and the Corporation of Delta, the District is responsible for its proportionate share of the closure and post-closure liability based on usage. The present value of the District's estimated future liability for these expenses is recognized as the landfill site's capacity is used and is as follows:

	2023	2022
Landfill closure and post closure liability	\$ 48,371	\$ 41,026

The closure and post-closure liability and annual expense is calculated based on the ratio of actual utilization to total expected utilization of the site's capacity at the date of closure. It is based on estimates and assumptions with respect to events extending over the remaining life of the Vancouver landfill, including provisions contained in Metro Vancouver's Integrated Solid Waste and Resource Management Plan. The significant estimates and assumptions adopted in measuring the District's share of the closure and post-closure liability are as follows:

	2023	2022
Current actual utilization (in 000's tonnes)	23,919	23,196
Expected utilization at closure (in 000's tonnes)	28,300	28,300
Expected remaining capacity (in 000's tonnes)	4,381	5,104
Permitted capacity (in 000's tonnes)	33,039	33,039
Future costs (in \$000's)	\$ 243,644	\$ 212,638
Present value of future costs (in \$000's)	\$ 151,242	\$ 136,569
Proportionate share of liability	37.84%	36.65%
Utilization of total capacity, end of year	84.52%	81.97%
Discount rate	2.69%	2.58%
Expected post-closure period	30 years	30 years
Expected closure date	December 31, 2037	December 31, 2037

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 14

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

11. Asset Retirement Obligation

The District's AROs consist of asbestos and lead obligations as well as decommissioning obligations.

a. Asbestos and lead obligations

The District owns and operates several buildings and infrastructure assets that are known or assumed to have asbestos and lead, which represent health hazards upon demolition, and the District has legal obligations to remove them. Following the adoption of PS 3280 – AROs, the District recognized the obligations relating to the removal and post-removal care of the asbestos and lead in these buildings and infrastructure assets as estimated as at January 1, 2023. These buildings and infrastructure assets have estimated useful lives ranging from 40 years to 107 years from the date of acquisition or completion of construction.

b. Contractual obligations

The District has contractual obligations to remove, decommission and restore infrastructure. Following the adoption of PS 3280 – AROs, the District recognized these obligations as estimated as at January 1, 2023.

Asset retirement obligation is as follows:

	GVS&DD	GVWD	MVHC	MVRD	2023
Balance, beginning of year	\$ —	\$ —	\$ —	\$ —	\$ —
Additions					
Asbestos and lead obligations	6,291	834	9,540	1,243	17,908
Contractual obligations	17,204	17,989	—	—	35,193
Total additions	23,495	18,823	9,540	1,243	53,101
Accretion expense					
Asbestos and lead obligations	264	35	401	52	752
Contractual obligations	723	756	—	—	1,479
Total accretion expense	987	791	401	52	2,231
Balance, end of year	\$ 24,482	\$ 19,614	\$ 9,941	\$ 1,295	\$ 55,332

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 15

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

11. Asset Retirement Obligation (continued)

The liability has been estimated using present value calculation with a discount rate for 2023 of 4.2% (2022 – not applicable, as new standard adopted in 2023). The estimated total undiscounted future expenditures and the number of years to expected settlement for the various obligations are as follows:

		Undiscounted asset retirement costs	Number of years to expected settlement
GVS&DD	\$	46,463	1 - 57
GVWD		27,162	2 - 43
MVHC		26,763	18 - 44
MVRD		2,373	2 - 32
	\$	102,761	1 - 57

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 16

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

12. Deferred Revenue and Refundable Deposits

The deferred revenue consists of the following:

	2023	2022
MVHC externally restricted funds from BCHMC and CMHC (a)		
i) Rental operations	\$ 51	\$ 48
ii) Replacement projects	5,365	3,457
iii) Retrofit projects	5,600	—
	11,016	3,505
GVS&DD and GVWD development cost charges (b)	273,718	273,596
Provincial grant to fund capital expenditures (c)	100,029	56,496
Facility rental security deposits	6,320	6,414
Cost-sharing funding (d)	6,173	—
Other	3,291	3,036
Total	\$ 400,547	\$ 343,047

(a) Amounts received under the following MVHC programs have been recorded as deferred revenue:

- i. **Rental Operations:** Under operating agreements entered into with Canada Mortgage and Housing Corporation (“CMHC”) and administered by British Columbia Housing Management Commission (“BCHMC”) (Homes BC, Seniors, and Investment in Housing Innovation properties), a portion of the funds received from rental operations are restricted and can only be used by MVHC according to the terms of the agreements. Restricted amounts are recorded as deferred revenue and are used when expenditures exceed revenue in the program.
- ii. **Replacement Projects:** Under operating agreements entered into with CMHC and administered by BCHMC (Homes BC, Seniors, and Investment in Housing Innovation properties), a portion of the funds received from rental operations are restricted for the replacement of equipment and specified building components. These funds are deferred until spent on approved items.
- iii. **Retrofit Projects:** Under agreement entered into with CMHC and in connection with the National Housing Co-Investment Fund, the \$5.6 million funds received in 2023 are restricted for the repair of 560 affordable housing units (eight projects). These funds are deferred until conditions have been met.

(b) The *Greater Vancouver Sewerage and Drainage District Act* and the *Local Government Act* restrict the Districts in applying money raised from development cost charges to funding sewer and water capital projects, including the repayment of debt raised to fund such projects. The balance of these amounts is included in deferred revenue until spent on approved purposes.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 17

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

12. Deferred Revenue and Refundable Deposits (continued)

- (c) Amounts received from the Province of British Columbia for the following construction projects have been recorded as deferred revenue:
- i. In 2017, the GVS&DD received a grant from the Province of British Columbia in the amount of \$193.0 million for costs associated with the construction of the new North Shore Wastewater Treatment Plant Facility. During 2023, \$22.71 million (2022 - \$13.72 million) was applied against the project and recognized as revenue. Remaining amount to be recognized in future years as capital expenditures are incurred is \$32.65 million.
 - ii. In 2023, the GVS&DD entered into a three-year contribution agreement, with the Province of British Columbia, where the Province will provide \$250 million representing one-third of the funding for Phase 1 of the Iona Wastewater Treatment Plant project. As of December 31, 2023, the District received \$75.0 million of the grant, of which \$14.63 million (2022 – \$nil) was applied against the project and recognized as revenue. Remaining amount to be recognized in future years as capital expenditures are incurred is \$60.37 million.
 - iii. In 2023, the MVRD received a grant from the Province of British Columbia in the amount of \$5.25 million to fund Barnston Island Dike improvements for the duration of the term ending on March 15, 2026. As of December 31, 2023, \$25,738 was applied against the project and recognized as revenue. Remaining amount to be applied in future years, including interest earned, is \$5.39 million.
- (d) In 2023, the GVWD received cost-sharing funds from member municipalities in accordance with the Water Supply Agreement in the amount of \$6,173,164 for future costs associated with the construction of Phase 2 of the Jericho Reservoir project. As of December 31, 2023, no amount has been applied and recognized against the project as construction has not yet commenced.

Continuity of deferred revenue and refundable deposits is as follows:

	2023	2022
Balance, beginning of year	\$ 343,047	\$ 341,016
Externally restricted contributions received:		
GVS&DD and GVWD development cost charges	82,978	68,941
Provincial government grant	80,733	—
GVWD cost-sharing funds	6,173	—
MVHC restricted funds	7,688	1,035
Interest earned	12,315	6,604
Total contributions received	189,887	76,580
Contributions used and recognized in revenue	(133,157)	(75,604)
Net change in externally restricted contributions	56,730	976
Change in deposits and other deferred revenues	770	1,055
	57,500	2,031
Balance, end of year	\$ 400,547	\$ 343,047

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 18

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

13. Debt

The District serves as the borrowing conduit between member municipalities (excluding the City of Vancouver) and the MFA. The GVS&DD and GVWD also access the MFA through the MVRD. Prior to 2007, the District also served as the borrowing conduit for the Greater Vancouver Transportation Authority, commonly referred to as "TransLink". The District, TransLink, and the municipalities in the transportation service region are jointly and severally liable for obligations arising under a security issued by the District on behalf of TransLink.

All monies borrowed are upon the District's credit at large and, in the event of any default, would constitute an indebtedness for which its members are jointly and severally liable.

Debt servicing requirements comprising sinking fund contributions, serial and mortgage principal repayments and interest are funded as incurred by revenue earned during the year.

Sinking fund installments are invested by the MFA and earn income which, together with principal payments, are expected to be sufficient to retire the sinking fund debt at maturity. For sinking fund agreements, the MFA has established either a normal sinking fund or a capital repayment equalization fund.

In addition to debt incurred directly by the District, the District has also incurred long-term debt on behalf of its member municipalities and TransLink through agreements with the MFA. Under the terms of these agreements, the District is required to provide for and pay to the MFA certain sums. Debt incurred on behalf of others is also presented as due from TransLink and member municipalities (note 5). Where the MFA has determined that sufficient resources exist to retire a debenture on its maturity date without further installments, debenture installments are suspended by the MFA. If the sums provided for are not sufficient, such deficiency shall be a liability of the District to the MFA until legally extinguished.

The District is reimbursed for amounts paid to the MFA for the obligations incurred on behalf of the member municipalities and TransLink whose undertakings were financed out of the proceeds of these obligations.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 19

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

13. Debt (continued)

The following summarizes the debt incurred by the District as well as debt incurred on behalf of the member municipalities and TransLink.

	Mortgages and Debenture Debt		Less Sinking Funds		Debt, Net of Sinking Fund			
					2023	2022		
GVS&DD	\$	1,481,000	\$	325,836	\$	1,155,164	\$	1,178,144
GVWD		1,167,000		552,617		614,383		663,511
MVHC		40,042		—		40,042		42,647
		2,688,042		878,453		1,809,589		1,884,302
TransLink		710,809		521,274		189,535		234,324
Member municipalities		1,238,584		287,993		950,591		1,012,390
		1,949,393		809,267		1,140,126		1,246,714
	\$	4,637,435	\$	1,687,720	\$	2,949,715	\$	3,131,016

Debt (net of sinking funds) reported on the statement of financial position is comprised of the following and includes varying maturities up to 2055, with interest rates ranging from 1.28% to 5.65%.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 20

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

13. Debt (continued)

Issue number	Interest rate - %	Maturity date	Authorized to be issued	Debt Outstanding	
				2023	2022
Sinking Fund Agreements					
79	2.25	June 3, 2023	\$ 74,025	\$ —	\$ 225
85	2.25-5.47	December 2, 2024	69,760	22,760	22,760
86	5.44	December 2, 2024	50,000	50,000	50,000
95	4.77	October 13, 2025	10,900	2,300	2,300
96	4.61	April 2, 2026	50,000	50,000	50,000
97	1.53-4.90	April 19, 2036	175,000	153,000	153,000
99	4.99	October 19, 2026	66,300	16,300	16,300
100	4.59	October 19, 2026	200,000	180,000	180,000
102	2.25-5.09	December 1, 2027	436,395	289,395	289,395
103	2.65	April 23, 2023	40,000	—	40,000
104	2.90	November 20, 2028	56,281	5,650	56,281
105	2.25	June 3, 2029	68,300	68,300	68,300
106	2.25	October 13, 2039	140,600	125,000	125,000
110	1.28	April 8, 2030	60,730	60,730	60,730
112	1.28	October 6, 2035	74,775	74,775	74,775
116	1.47	April 4, 2036	152,292	152,292	152,292
118	3.39	April 11, 2042	96,000	96,000	96,000
121	3.39	October 4, 2037	74,961	72,286	72,286
124	4.52	April 8, 2043	3,000	3,000	3,000
126	4.52	September 26, 2043	155,209	139,774	155,209
127	3.30	April 7, 2034	115,415	115,415	115,415
130	3.00	October 14, 2029	50,000	50,000	50,000
131	2.20	April 8, 2035	121,500	121,500	121,500
137	2.60	April 19, 2046	149,772	149,772	149,772
139	2.10	October 5, 2031	55,000	55,000	55,000
141	2.80	April 7, 2047	152,463	152,463	152,463
142	3.15	October 4, 2047	77,983	77,983	77,983
145	3.15	April 23, 2048	122,275	122,275	122,275
146	3.20	September 19, 2048	282,500	282,500	282,500
147	2.66	April 9, 2034	62,000	62,000	62,000
149	2.24	October 9, 2049	140,095	140,095	140,095
150	1.99	April 9, 2050	168,133	168,133	168,133
151	1.28	June 1, 2050	185,987	185,987	185,987
153	2.41	April 15, 2046	129,000	129,000	129,000
154	2.41	May 28, 2036	500,000	500,000	500,000
156	2.58	September 27, 2046	150,600	150,600	150,600
157	3.36	April 8, 2037	207,500	207,500	207,500
158	4.09	September 23, 2052	245,470	245,470	245,470
159	4.15	June 4, 2038	50,000	50,000	—
160	4.97	October 12, 2048	52,500	52,500	—
Total sinking fund agreements (carried forward)			\$ 5,072,721	\$ 4,579,756	\$ 4,583,546

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 21

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

13. Debt (continued)

Issue number	Interest rate - %	Maturity date	Authorized to be issued	Debt Outstanding	
				2023	2022
Total sinking fund agreements (brought forward)			\$ 5,072,721	\$ 4,579,756	\$ 4,583,546
Serial Debt					
93	5.10-5.65	April 7, 2027	79,014	13,209	17,735
111	3.35	October 1, 2025	3,000	491	724
114	3.65	March 29, 2026	6,301	1,545	2,024
122	2.00	November 1, 2032	1,999	900	1,000
123	2.00	March 28, 2033	3,142	1,492	1,649
Total serial debt			93,456	17,637	23,132
Total debenture debt			\$ 5,166,177	\$ 4,597,393	\$ 4,606,678
MVHC Mortgages					
	1.30 - 4.87	January 2023 to December 2055		47,373	50,901
Less MVRD financed mortgages				(7,331)	(8,254)
Total MVHC mortgages				40,042	42,647
Total debt				4,637,435	4,649,325
Less sinking funds				(1,687,720)	(1,518,309)
Total debt, net of sinking funds				\$ 2,949,715	\$ 3,131,016

Principal payments and sinking fund installments due within the next five years and thereafter are as follows:

	Total Long-Term Debt Payments	Less Recoverable from TransLink and Member Municipalities	Net Debt Payments
2024	\$ 214,750	\$ 69,818	\$ 144,932
2025	199,972	63,031	136,941
2026	190,193	59,693	130,500
2027	176,101	48,286	127,815
2028	156,851	35,277	121,574
Thereafter	1,197,838	453,748	744,090
Total payments	2,135,705	729,853	1,405,852
Estimated sinking fund income	814,010	410,273	403,737
Total net debt	\$ 2,949,715	\$ 1,140,126	\$ 1,809,589

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 22

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

14. Tangible Capital Assets

Year ended December 31, 2023

	Cost			Accumulated Amortization				Net Book Value December 31, 2023	
	Balance at December 31, 2022	Additions	Disposals	Balance at December 31, 2023	Balance at December 31, 2022	Disposals	Amortization Expense		Balance at December 31, 2023
Land									
Sewer and Drainage District	\$ 186,358	\$ 511	\$ —	\$ 186,869	\$ —	\$ —	\$ —	\$ —	\$ 186,869
Water District	132,714	700	—	133,414	—	—	—	—	133,414
Regional District	919,669	42,289	—	961,958	—	—	—	—	961,958
Metro Vancouver Housing Corporation	52,274	—	—	52,274	—	—	—	—	52,274
	1,291,015	43,500	—	1,334,515	—	—	—	—	1,334,515
Infrastructure									
Sewer and Drainage District	2,469,537	293,996	—	2,763,533	753,148	—	52,344	805,492	1,958,041
Water District	2,426,794	64,813	—	2,491,607	473,941	—	38,836	512,777	1,978,830
Regional District	131,749	10,760	(1,120)	141,389	71,638	(1,120)	4,790	75,308	66,081
	5,028,080	369,569	(1,120)	5,396,529	1,298,727	(1,120)	95,970	1,393,577	4,002,952
Buildings									
Water District	216,476	4,050	—	220,526	30,151	—	5,501	35,652	184,874
Regional District	26,880	1,243	—	28,123	10,897	—	692	11,589	16,534
Metro Vancouver Housing Corporation	223,589	9,612	—	233,201	178,834	—	1,172	180,006	53,195
	466,945	14,905	—	481,850	219,882	—	7,365	227,247	254,603
Vehicles									
Regional District	32,403	6,150	(2,184)	36,369	26,364	(2,184)	2,543	26,723	9,646
	32,403	6,150	(2,184)	36,369	26,364	(2,184)	2,543	26,723	9,646
Machinery, equipment, furniture & fixtures									
Sewer and Drainage District	8,989	179	(531)	8,637	8,235	(531)	286	7,990	647
Water District	13,622	137	(166)	13,593	8,467	(166)	1,061	9,362	4,231
Regional District	21,792	623	(170)	22,245	19,023	(170)	572	19,425	2,820
Metro Vancouver Housing Corporation	6,561	736	(785)	6,512	4,868	(657)	540	4,751	1,761
	50,964	1,675	(1,652)	50,987	40,593	(1,524)	2,459	41,528	9,459
Construction in progress									
Sewer and Drainage District	1,645,308	137,566	(1,333)	1,781,541	—	—	—	—	1,781,541
Water District	833,335	200,984	(604)	1,033,715	—	—	—	—	1,033,715
Regional District	9,116	(436)	—	8,680	—	—	—	—	8,680
Metro Vancouver Housing Corporation	24,702	33,177	—	57,879	—	—	—	—	57,879
	2,512,461	371,291	(1,937)	2,881,815	—	—	—	—	2,881,815
	\$9,381,868	\$807,090	\$ (6,893)	\$10,182,065	\$1,585,566	\$ (4,828)	\$ 108,337	\$1,689,075	\$ 8,492,990
Totals 2023									
Sewer and Drainage District	\$4,310,192	\$432,252	\$ (1,864)	\$ 4,740,580	\$ 761,383	\$ (531)	\$ 52,630	\$ 813,482	\$ 3,927,098
Water District	3,622,941	270,684	(770)	3,892,855	512,559	(166)	45,398	557,791	3,335,064
Regional District	1,141,609	60,629	(3,474)	1,198,764	127,922	(3,474)	8,597	133,045	1,065,719
Metro Vancouver Housing Corporation	307,126	43,525	(785)	349,866	183,702	(657)	1,712	184,757	165,109
	\$9,381,868	\$807,090	\$ (6,893)	\$10,182,065	\$1,585,566	\$ (4,828)	\$ 108,337	\$1,689,075	\$ 8,492,990

Construction in progress includes \$609.1 million (2022- \$522.6 million) related to the North Shore Wastewater Treatment Plant Project (note 15).

Additions related to asset retirement costs were \$53.1 million (2022- \$nil).

Write-offs and disposals were \$2.1 million in 2023 (2022 - \$0.2 million).

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 23

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

14. Tangible Capital Assets (continued)

Year ended December 31, 2022

	Cost			Accumulated Amortization				Net Book Value December 31, 2022	
	Balance at December 31, 2021	Additions	Disposals	Balance at December 31, 2022	Balance at December 31, 2021	Disposals	Amortization Expense		Balance at December 31, 2022
Land									
Sewer and Drainage District	\$ 162,872	\$ 23,590	\$ (104)	\$ 186,358	\$ —	\$ —	\$ —	\$ —	\$ 186,358
Water District	53,664	79,050	—	132,714	—	—	—	—	132,714
Regional District	914,517	5,152	—	919,669	—	—	—	—	919,669
Metro Vancouver Housing Corporation	52,274	—	—	52,274	—	—	—	—	52,274
	1,183,327	107,792	(104)	1,291,015	—	—	—	—	1,291,015
Infrastructure									
Sewer and Drainage District	2,168,652	300,885	—	2,469,537	708,339	—	44,809	753,148	1,716,389
Water District	2,245,795	180,999	—	2,426,794	437,619	—	36,322	473,941	1,952,853
Regional District	129,501	3,505	(1,257)	131,749	68,134	(1,257)	4,761	71,638	60,111
	4,543,948	485,389	(1,257)	5,028,080	1,214,092	(1,257)	85,892	1,298,727	3,729,353
Buildings									
Water District	216,476	—	—	216,476	24,688	—	5,463	30,151	186,325
Regional District	26,880	—	—	26,880	10,357	—	540	10,897	15,983
Metro Vancouver Housing Corporation	220,339	3,250	—	223,589	176,544	—	2,290	178,834	44,755
	463,695	3,250	—	466,945	211,589	—	8,293	219,882	247,063
Vehicles									
Regional District	30,621	2,195	(413)	32,403	24,452	(413)	2,325	26,364	6,039
	30,621	2,195	(413)	32,403	24,452	(413)	2,325	26,364	6,039
Machinery, equipment, furniture & fixtures									
Sewer and Drainage District	8,818	171	—	8,989	7,875	—	360	8,235	754
Water District	13,197	425	—	13,622	7,425	—	1,042	8,467	5,155
Regional District	21,169	773	(150)	21,792	18,428	(148)	743	19,023	2,769
Metro Vancouver Housing Corporation	6,439	619	(497)	6,561	4,743	(362)	487	4,868	1,693
	49,623	1,988	(647)	50,964	38,471	(510)	2,632	40,593	10,371
Construction in progress									
Sewer and Drainage District	1,579,940	65,368	—	1,645,308	—	—	—	—	1,645,308
Water District	796,461	36,874	—	833,335	—	—	—	—	833,335
Regional District	5,391	3,725	—	9,116	—	—	—	—	9,116
Metro Vancouver Housing Corporation	8,077	16,625	—	24,702	—	—	—	—	24,702
	2,389,869	122,592	—	2,512,461	—	—	—	—	2,512,461
	\$8,661,083	\$723,206	\$ (2,421)	\$ 9,381,868	\$1,488,604	\$ (2,180)	\$ 99,142	\$1,585,566	\$ 7,796,302
Totals 2022									
Sewer and Drainage District	\$3,920,282	\$390,014	\$ (104)	\$ 4,310,192	\$ 716,214	\$ —	\$ 45,169	\$ 761,383	\$ 3,548,809
Water District	3,325,593	297,348	—	3,622,941	469,732	—	42,827	512,559	3,110,382
Regional District	1,128,079	15,350	(1,820)	1,141,609	121,371	(1,818)	8,369	127,922	1,013,687
Metro Vancouver Housing Corporation	287,129	20,494	(497)	307,126	181,287	(362)	2,777	183,702	123,424
	\$8,661,083	\$723,206	\$ (2,421)	\$ 9,381,868	\$1,488,604	\$ (2,180)	\$ 99,142	\$1,585,566	\$ 7,796,302

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 24

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

15. Prepaid Land Leases

	2023	2022
Balance, beginning of year	\$ 4,868	\$ 5,062
Amortization	(195)	(194)
Balance, end of year	\$ 4,673	\$ 4,868

The lease terms for the properties are as follows:

Asset	Lease Expiry Dates	Lease Term (Years)
Buildings		
Habitat Villa	February 2029	50
Walnut Gardens	May 2026	42
Other prepaid land leases	May 2036 to June 2062	60

16. Accumulated Surplus

Accumulated surplus consists of individual fund surplus and reserves as follows:

	2023	2022
Reserves	\$ 481,795	\$ 441,040
Capital fund balance	(433,746)	(93,442)
Investment in tangible capital assets	6,683,401	5,912,000
Total	\$ 6,731,450	\$ 6,259,598

Capital fund balance represents the future expected level of funding required or accumulated.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 25

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

16. Accumulated Surplus (continued)

The reserves are classified as either operating, discretionary, or statutory and are presented in the following schedules:

	December 31, 2022	Interest	Annual Operating Surplus (Deficit)	Transfers	Contributions from (to) Operations	Contributions to Capital	December 31, 2023
Reserve funds							
Operating reserves							
Metro Vancouver Regional District							
Air Quality	\$ 4,058	\$ 176	\$ 1,282	\$ —	\$ —	\$ —	\$ 5,516
E911 Emergency Telephone Service	474	21	27	—	—	—	522
Electoral Area Service	24	1	—	—	—	—	25
General Government	7,109	309	3,342	—	—	—	10,760
Housing Planning and Policy	426	18	24	—	—	—	468
Invest Vancouver	664	29	27	—	—	—	720
Regional Employer Services	807	35	(53)	—	—	—	789
Regional Emergency Management	265	11	(5)	—	—	—	271
Regional Geospatial Reference System	404	18	3	—	—	—	425
Regional Parks	3,944	171	554	—	—	—	4,669
Regional Planning	1,028	45	257	—	—	—	1,330
Sasamat Fire Protection Service	132	6	73	—	—	—	211
West Nile Virus	375	16	—	—	—	—	391
MVRD operating reserves	19,710	856	5,531	—	—	—	26,097
Greater Vancouver Water District							
Water Services	37,248	1,617	2,831	—	—	—	41,696
GVWD operating reserves	37,248	1,617	2,831	—	—	—	41,696
Greater Vancouver Sewerage and Drainage District							
Liquid Waste Services	44,442	1,930	(3,113)	—	—	—	43,259
Solid Waste Services	37,818	1,642	(3,475)	—	—	—	35,985
GVS&DD operating reserves	82,260	3,572	(6,588)	—	—	—	79,244
Metro Vancouver Housing Corporation							
MVHC operating Reserves	12,949	499	13,232	—	(1,451)	—	25,229
MVHC operating reserves	12,949	499	13,232	—	(1,451)	—	25,229
Total operating reserves	152,167	6,544	15,006	—	(1,451)	—	172,266
Discretionary reserves							
Metro Vancouver Regional District							
Air Quality	806	34	—	—	(506)	—	334
Electoral Area Service	1,652	73	16	—	(23)	—	1,718
E911 Emergency Telephone Service	32	1	—	—	—	—	33
General Government	7,431	2,299	—	—	50,780	—	60,510
Invest Vancouver	719	30	—	—	(441)	—	308
Regional Emergency Management	346	15	—	—	(61)	—	300
Regional Employer Services	2,379	103	—	—	—	—	2,482
Regional Planning	2,506	107	—	—	(252)	—	2,361
Regional Parks	208	9	—	—	—	—	217
Centralized Support	25,733	1,117	10,115	—	(2,339)	—	34,626
MVRD discretionary reserves	41,812	3,788	10,131	—	47,158	—	102,889
Greater Vancouver Sewerage and Drainage District							
Biosolids Inventory	15,809	687	—	—	(15,488)	—	1,008
Liquid Waste General Debt Reserve Fund	2,174	94	—	—	—	—	2,268
Lions Gate Contingency	1,526	66	—	—	—	—	1,592
Drainage General	5,420	235	—	—	—	—	5,655
Solid Waste General	26,998	803	—	—	—	—	27,801
Landfill Post Closure	11,580	1,116	—	—	(3,333)	—	9,363
GVS&DD discretionary reserves	63,507	3,001	—	—	(18,821)	—	47,687
Metro Vancouver Housing Corporation							
MVHC Capital Development	39,528	1,716	—	—	—	(7,675)	33,569
MVHC Capital Replacement	2,599	84	—	—	(2,895)	—	(212)
MVHC discretionary reserves	42,127	1,800	—	—	(2,895)	(7,675)	33,357
Total discretionary reserves	147,446	8,589	10,131	—	25,442	(7,675)	183,933
Operating and discretionary reserves (carried forward)	\$ 299,613	\$ 15,133	\$ 25,137	\$ —	\$ 23,991	\$ (7,675)	\$ 356,199

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 26

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

16. Accumulated Surplus (continued)

	December 31, 2022	Interest	Annual Operating Surplus (Deficit)	Transfers	Contributions from (to) Operations	Contributions to Capital	December 31, 2023
Operating and discretionary reserves							
Reserves (brought forward)	\$ 299,613	\$ 15,133	\$ 25,137	\$ —	\$ 23,991	\$ (7,675)	\$ 356,199
Statutory reserves							
Metro Vancouver Regional District							
Electoral Area Community Works	748	33	—	—	33	—	814
Electoral Area Election	14	1	2	—	30	—	47
MVRD Sustainability Innovation Fund	12,029	526	—	—	(1,232)	—	11,323
Grants Reserve Fund	2,112	173	—	—	(300)	—	1,985
Housing Planning and Policy	5,368	251	—	—	1,000	—	6,619
Housing Planning and Policy Development	12,294	603	—	—	4,000	—	16,897
Regional Geospatial Reference System	1,164	51	—	—	31	—	1,246
Regional Parks Infrastructure	6,246	298	—	—	2,495	(4,884)	4,155
Parkland Acquisition	9,717	422	—	—	—	—	10,139
Parkland Acquisition and Development	26,194	652	—	—	23,570	(42,289)	8,127
Delta Airpark	145	6	—	—	31	—	182
Regional Parks Legacy	2,680	116	—	—	(50)	—	2,746
Sasamat Fire Protection Services	1,598	76	—	—	(134)	—	1,540
Corporate Self Insurance	1,567	67	—	—	—	—	1,634
Corporate Fleet	24,070	1,036	618	—	—	(5,334)	20,390
MVRD statutory reserves	105,946	4,311	620	—	29,474	(52,507)	87,844
Greater Vancouver Water District							
Laboratory Equipment	804	35	—	—	—	—	839
Water Services Sustainability Innovation Fund	14,578	646	—	—	92	—	15,316
GVWD statutory reserves	15,382	681	—	—	92	—	16,155
Greater Vancouver Sewerage and Drainage District							
Liquid Waste Laboratory Equipment	725	34	—	—	106	—	865
Liquid Waste Services Sustainability Innovation Fund	19,374	861	—	—	497	—	20,732
GVS&DD statutory reserves	20,099	895	—	—	603	—	21,597
Total statutory reserves	141,427	5,887	620	—	30,169	(52,507)	125,596
Total reserves	\$ 441,040	\$ 21,020	\$ 25,757	\$ —	\$ 54,160	\$ (60,182)	\$ 481,795

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 27

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

16. Accumulated Surplus (continued)

Investment in tangible capital assets is calculated as follows:

	2023	2022
Tangible capital assets	\$ 8,492,990	\$ 7,796,302
Amount financed by:		
Long-term debt, net of members, TransLink, and sinking fund	(1,809,589)	(1,884,302)
	\$ 6,683,401	\$ 5,912,000
Change in the investment in tangible capital assets		
Acquisition of tangible capital assets	\$ 807,090	\$ 723,206
Amortization of tangible capital assets	(108,337)	(99,142)
Loss (gain) on disposal of tangible capital assets	(1,594)	1,359
Proceeds on disposal of tangible capital assets	(471)	(1,600)
	696,688	623,823
Less financing (net of members and TransLink debt)		
Sinking fund debt maturity	90,631	15,000
Sinking fund debt retirement	(144,033)	(136,608)
Sinking fund debt retirement income	(28,075)	(27,885)
Debenture debt issued	100,000	200,000
Debenture debt maturity	(90,631)	(15,000)
Payment of long-term debt	(2,605)	(2,694)
	(74,713)	32,813
Change in investment in tangible capital assets	771,401	591,010
Investment in tangible capital assets, beginning of year	5,912,000	5,320,990
Investment in tangible capital assets, end of year	\$ 6,683,401	\$ 5,912,000

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 28

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

17. Contractual Obligations and Rights

a) Contractual Obligations

- i) As at December 31, 2022, the District had the following commitments relating to projects in progress.

	Authorized and Outstanding Projects	Expended at December 31	Total 2023	Total 2022
GVS&DD	\$ 5,865,550	\$ (2,882,548)	\$ 2,983,002	\$ 2,586,217
GVWD	2,931,700	(1,239,943)	1,691,757	1,589,876
MVRD	92,631	(10,662)	81,969	37,027
MVHC	422,200	(57,032)	365,168	298,394
Total	\$ 9,312,081	\$ (4,190,185)	\$ 5,121,896	\$ 4,511,514

- ii) The District is committed under a number of lease and right-of-way agreements to make minimum annual payments. These agreements have varying terms, including three agreements, with annual payments to perpetuity, with adjustments annually for CPI. Estimated payments over the next ten years are as follows:

	Amount
2024	\$ 2,434
2025	2,276
2026	2,294
2027	2,330
2028	2,366
2029 - 2033	12,409
Total	\$ 24,109

b) Contractual Rights

The District is party to several property lease agreements that are anticipated to provide future revenues. These agreements are with third parties with varying terms to 2035. Amounts anticipated to be received over the future years are as follows:

	Amount
2024	\$ 5,483
2025	4,235
2026	2,800
2027	1,209
2028	721
Thereafter	4,799
Total	\$ 19,247

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 29

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

18. Contingencies

Lawsuits

As at December 31, 2023, there were various lawsuits pending against the District arising in the ordinary course of business. The District has retained legal counsel to defend against these lawsuits. Where the outcomes or amounts cannot be reasonably determined, no liability has been recorded. Management is of the opinion that losses, if any, in connection with these lawsuits can be sufficiently funded by reserve funds or covered by insurance. Any expected losses will be accrued and recorded as expenses at the time they are considered likely and amounts are reasonably determinable.

North Shore Wastewater Treatment Plant

The GVS&DD is building a new tertiary wastewater treatment plant on a former industrial site in North Vancouver, to replace the primary-only Lions Gate Wastewater Treatment Plant. The deadline for completion of the project under federal regulation was December 31, 2020. In 2021, the GVS&DD served notice to terminate its contract with the vendor hired to design, build and commission the future North Shore Wastewater Treatment Plant, having determined that the vendor was in breach of contract. As of the contract termination date, the GVS&DD has paid \$309.5 million, net of GST rebates, to the vendor for work completed, which has been recorded as construction in progress (note 14). In 2022, the vendor commenced legal action by filing a claim against the GVS&DD in excess of \$250 million to which the GVS&DD filed a counter-claim against the vendor in excess of \$500 million. As at December 31, 2023, the outcome of any legal proceedings related to the terminated contract and the potential consequences of not meeting the current deadline under the federal regulation is undeterminable.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 30

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

18. Contingencies (continued)

Municipal Pension Plan

The District and its employees contribute to the British Columbia Municipal Pension Plan (the Plan), a jointly trustee pension plan. The board of trustees, representing plan members and employers, is responsible for administering the Plan, including investment of the assets and administration of benefits. The Plan is a multi-employer defined pension plan. Basic pension benefits provided are based on a formula. As at December 31, 2023, the Plan has about 240,000 active members and approximately 124,000 retired members. Active members include approximately 43,000 contributors from local government.

Every three years, an actuarial valuation is performed to assess the financial position of the plan and the adequacy of plan funding. The actuary determines an appropriate combined employer and member contribution rate to fund the plan. The actuary's calculated contribution rate is based on the entry-age normal cost method, which produces the long-term rate of member and employer contributions sufficient to provide benefits for average future entrants to the plan. This rate may be adjusted for the amortization of any actuarial funding surplus and will be adjusted for the amortization of any unfunded actuarial liability.

The most recent actuarial valuation for the Municipal Pension Plan as of December 31, 2021, indicated a \$3,761 million funding surplus for basic pension benefits on a going concern basis.

The District paid \$17.6 million for employer contributions (2022 - \$15.0 million) while employees contributed \$16.0 million (2022 - \$13.7 million) to the Plan in fiscal 2023.

The next valuation will be as at December 31, 2024 with results available in 2025.

Employers participating in the plan record their pension expense as the amount of employer contributions made during the fiscal year (defined contribution pension plan accounting). This is because the plan records accrued liabilities and accrued assets for the plan in aggregate resulting in no consistent and reliable basis for allocating the obligation, assets and cost to individual employers participating in the plan.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 31

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

18. Contingencies (continued)

Self-Insurance Reserve

A self-insurance reserve has been established within accumulated surplus to cover losses resulting from uninsured liability exposures of the District.

Each year a review is undertaken to determine if it would be beneficial to purchase additional liability insurance. The District transfers amounts to the reserve depending on the reserve's adequacy to cover retained liability risk.

An estimate is made for all costs of investigating and settlement of claims annually and an adjustment is made to the reserve to maintain an adequate balance to cover potential losses in excess of recorded liabilities. These estimates are changed as additional information becomes known during the course of claims settlement. Any likely losses would be expensed at the time the losses are known and the amounts are reasonably determinable.

Debt Reserve Fund

The MFA is required to establish a Debt Reserve Fund for each debenture which is comprised of cash deposits and a non-interest bearing demand note (refer to note 7). If, at any time, the District has insufficient funds to meet payments due on its obligations to MFA, the payments will be made from the debt reserve fund. The demand notes are callable only if there are additional requirements to be met to maintain the level of the debt reserve fund, and therefore have not been recorded in the statement of financial position.

BCHMC Grant Funding

In 2018 and 2019, MVHC received funding of \$6.7 million in total from BCHMC relating to the re-development of Heather Place property. The conditions of the funding agreement stipulate that the property must be continuously used for the provision of housing for eligible occupants and there is no default under the loan or operating agreement over 35 years. Should a breach in the agreement occur, the outstanding balance of the funding would need to be repaid to BCHMC (\$6.7 million as at December 31, 2023). The contingent liability is reduced by 1/25th annually, commencing in the 11th year of the agreement. Payments of interest will not be required unless there is a default and consequently interest will be payable on the balance of the principal amount outstanding at prime plus 2% per annum, compounded semi-annually and not in advance.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 32

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

18. Contingencies (continued)

BCHMC Loan Funding - Kingston Gardens Redevelopment Project

In 2022, MVHC entered into a demand non-revolving construction loan agreement with BC Housing Management Commission for financing of the Kingston Gardens redevelopment project. The maximum approved construction loan amount is \$44,642,752. Interest payable on the loan will be calculated based on variable rate of not more than the Royal Bank of Canada Prime Rate plus 1.00% compounded monthly, not in advance.

As of December 31 2023, \$9,481,239 of eligible costs have been spent on the construction project of which no amounts have been financed from the construction loan in the year. Proceeds from the loan is expected to be received early 2024.

Amounts drawn from the loan must be repaid no later than August 1, 2024. At which time, it will be repaid by a BCHMC investment of \$8,300,000 and take out mortgage obtained through CMHC's National Housing Co-Investment Fund for \$29,411,377. Any amounts remaining of up to \$6,931,375 will be paid from MVHC's reserves. MVHC is currently seeking an extension on this repayment deadline.

BCHMC loan Funding - Salal Landing Redevelopment Project

In 2023 MVHC entered into a construction loan agreement with BC Housing Management Commission for funding for the Salal Landing Project, a 63 unit multi-family project located at 2481 Welcher Ave, Port Coquitlam BC. This project is to be financed by a repayable loan with the maximum approved of \$20,305,079 and a forgivable loan in the amount of \$7,925,000. To date, MVHC has not received any of the financing. Funding of eligible cost is expected to be received in 2024.

The forgivable loan term is 35 years and is forgivable in the amount of 1/25th of the final balance of \$7,925,000 commencing on the 11th year after the commencement date. The loan will continue to be forgiven 1/25th each subsequent year until the loan is completely forgiven.

Forgiveness of the loan under the Agreement requires that the property must be continuously used for the provision of housing for eligible occupants and there is no default under the loan or operating agreement. Should a breach in the agreement occur, the outstanding balance of the funding not previously forgiven would need to be repaid to BCHMC immediately. Payments of interest will not be required unless there is a default, which would result in interest being payable on the unforgiven balance of the principal amount then outstanding at prime plus 2% per annum, compounded semi-annually and not in advance.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 33

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

18. Contingencies (continued)

CMHC Loan Funding - Heather Place B Redevelopment Project In 2023, MVHC entered into a construction loan agreement with Canada Mortgage and Housing Corporation (CMHC) for financing of the Heather Place B Project, a 87 unit rental housing project located in Vancouver BC. The project is funded by a repayable loan with a maximum approved amount of \$30,764,081 and a forgivable loan in the amount of \$1,175,000. To date, MVHC has not received any of the financing. Funding of eligible cost is expected to be received in 2024.

The repayable loan has an amortization period of 50 years and principal repayment will commence upon the project achieving Stabilization, defined as annualized gross income of \$2,035,539. The forgivable loan will have an equal portion of the principal amount forgiven on each anniversary of the date that the loan is fully funded.

Interest payable on the repayable loan will be calculated semi-annually in arrears commencing on the interest capitalization date or as CMHC may otherwise determine. The forgivable loan is interest free until Stabilization is achieved and provided the loan is not in default.

Letters of Credit At December 31, 2023, the GVS&DD is the named beneficiary of \$847,980 (2022 - \$757,980) of irrevocable letters of credits from financial institutions related to construction projects and Solid Waste operations. These letters of credit are available under circumstances in which the service provider does not fulfil its obligation to the GVS&DD and therefore the amount is not recorded as assets.

Cache Creek Landfill Prior to 2016, the GVS&DD transported deposits to a landfill located in the Village of Cache Creek, BC and was required to contribute quarterly to a post-closure trust fund, held with the Province of British Columbia. The *GVS&DD – Village of Cache Creek: Village of Cache Creek – Agreement* dated November 25, 1987 indemnifies the Village of Cache Creek for any post-closure liabilities not covered by this fund and obligates the GVS&DD to pay any excess funding until the earlier of (i) the 20th anniversary of the landfill closure date or (ii) the date the Province terminates the post-closure trust fund. Therefore, the obligation expires at the latest July 2036. The Landfill Operational Certificate obligates the Village of Cache Creek and a third party service provider to undertake closure and post-closure activities. At December 31, 2023, the lower of amortized cost and market value of the trust was \$15,289,144 (2022 - \$15,403,059), which approximates the expected post-closure costs.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 34

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

19. Budget Information

The annual budget presented in these financial statements is based upon the 2023 operating and capital budgets originally approved by the District's Board in October 2022, with additional approval in March 2023 for adjustments to the budget as a result of the 2022 fiscal year end results. The budget is based on operational and capital expenditure requirements and their associated funding. Amortization is a non-cash item that is not funded for budget purposes. Also, contributions to or from reserves and debt principal repayments are removed from the approved budget for financial statement presentation. The schedule below reconciles the approved budget to the budget figures reported in these financial statements. Capital expenditures of \$1.26 billion were included in the capital budget approved by the Board.

	2023 Budget	2022 Budget
Budgeted annual surplus per Exhibit B - Statement of Operations	\$ 410,236	\$ 451,760
Additional transfers from reserves, approved by Board	1,753	3,634
Adjusted annual surplus, based on originally approved budget	411,989	455,394
Items not included in the operating budget		
Amortization of tangible capital assets and prepaid land leases	100,755	96,267
Contributions from deferred revenue	(65,846)	(110,665)
Sinking fund and debt retirement income	(30,622)	(25,566)
Development cost charge revenue	(28,716)	(42,329)
MVHC development grant	(15,575)	(17,536)
Reserve interest	(6,814)	(6,592)
Items included in budget but not in financial statements		
Sinking fund and debt retirement payments	(147,636)	(140,561)
Transfers to capital fund	(212,832)	(203,053)
Transfers from reserve funds	40,236	30,865
Transfer to reserve funds	(44,939)	(36,224)
Annual surplus per approved budget	—	—

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 35

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

20. Segmented Information and Expenses by Object

The District is a diversified municipal government organization that provides a wide range of services directly to the public and its member municipalities through its four legal entities: the MVRD, the GVS&DD, the GVWD, and the MVHC. For management reporting purposes, the District's operations and activities are organized and reported by service areas within the legal entities.

The salaries and benefits reported in the segmented information below do not include \$31.88 million (2022 - \$46.10 million) directly attributable to the construction of tangible capital assets which have been capitalized and included in tangible capital assets in the Statement of Financial Position.

The legal entities disclosed in the segmented information, along with the service areas provided are as follows:

GVS&DD

Liquid Waste Services

The Liquid Waste Management Service is responsible for the collection, treatment and discharge of liquid waste for member municipalities. It operates a number of wastewater treatment plants and a related collection network connected to the member municipalities' systems.

Solid Waste Services

The Solid Waste Management Service is responsible for the disposal of solid waste both for the member municipalities and the public. It owns and operates several solid waste facilities including a waste-to-energy facility.

GVWD

Water Operations

Water Operations is responsible for the supply of potable water to its member municipalities. It owns a series of dams, reservoirs, water treatment plants and a distribution network connected to the member municipalities' systems.

Building Operations

Building Operations is responsible for operating and maintaining office buildings owned by GVWD. These facilities are leased to MVRD and its related legal entities for its head office operations as well as to external parties.

MVHC

Metro Vancouver Housing Corporation is a wholly-owned subsidiary of MVRD, which owns and operates housing sites within the Lower Mainland for the purpose of providing affordable rental housing on a non-profit basis through various housing programs, some federally and some provincially funded. MVHC's portfolio consists of "rent-geared-to-income", partial rent assistance, and low-end-of-market units.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 36

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

20. Segmented Information and Expenses by Object (continued)

MVRD

<i>Regional Parks</i>	Regional Parks is responsible for managing, maintaining, and protecting a diverse network of Regional Parks and an expanding land base of reserves, ecological conservancy areas, and greenways, located throughout the Region.
<i>General Government</i>	General Government includes services responsible for overall direction and monitoring and regional initiatives. This area comprises the Regional Board & Committee Remuneration, Corporate Secretary's Office, Audit, Legal and Insurance costs, Innovation, Regional Emergency Management, Regional Cultural Strategy and External Contributions and Zero Waste Collaborative Initiatives.
<i>Air Quality</i>	Air Quality is responsible for monitoring air quality in the region, controlling industrial, commercial and some residential emissions, creating long-term plans, and conducting emission inventories.
<i>Regional Employee Services</i>	Regional Employee Services provides collective bargaining, job evaluation, research, and other related labour relations services to those MVRD municipalities who are members of the function.
<i>E911 Emergency Telephone Service</i>	The District contracts with E-Comm Corporation to provide 911 service for all municipalities within the region as well as the community of Whistler and the Sunshine Coast Regional District.
<i>Regional Planning</i>	Regional Planning's core responsibilities are focused on regional growth management, utility management and air quality management. Primary activities include development and implementation of a wide range of innovative policies and plans, extensive research, modeling and technical analysis, regulation, business demand management and community education.
<i>Invest Vancouver</i>	Invest Vancouver fosters regional and cross-sectoral collaboration on economic development issues, advises leaders on economic policy and strategy, promotes the region to a global audience, and attracts strategic investment.
<i>Housing Planning and Policy</i>	Housing Planning and Policy contributes to processes and decisions related to the development of affordable housing projects, and in particular to the redevelopment of the MVHC portfolio of mixed-income housing complexes and the development of vacant lands owned by local government (including the MVRD).

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 37

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

20. Segmented Information and Expenses by Object (continued)

MVRD (continued)

<i>Electoral Area Service</i>	The District is responsible for providing general and local services to one unincorporated area (Electoral Area A) of the regional district. General services provided include a variety of tax-supported, regional services such as 911 emergency telephone, air quality, labour relations, regional parks, strategic planning, and general government.
<i>Regional Global Positioning System</i>	The District's Global Positioning System (GPS) Real-Time Service is offered to member municipalities and to the public in partnership with the B.C. Crown Registry and Geographic Base (CRGB) Branch.
<i>Sasamat Volunteer Fire Department</i>	The Sasamat Volunteer Fire Department provides volunteer fire department services to the Villages of Anmore and Belcarra. The cost to support this function is borne completely by the members who receive the service.
<i>Regional Emergency Management</i>	Regional Emergency Management is an intergovernmental partnership between the Province of British Columbia and the District to coordinate regional emergency management planning activities and to engage all levels of government and private sector agencies in regional emergency planning initiatives for the Metro Vancouver region.
<i>Corporate Programs</i>	Corporate programs provide centralized support for Metro Vancouver's four legal entities, including financial services, human resources, external relations, legislative service, indigenous relations, project delivery, self-insurance, and information technology.
<i>Members and TransLink Sinking Fund Income</i>	The District serves as the borrowing conduit between member municipalities (excluding City of Vancouver) and TransLink and the MFA. (Note 13). Sinking fund income earned on debenture issues held on behalf of members and TransLink is recorded as revenue earned on the sinking fund with the offsetting expenditure owing to these organizations.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 38

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

20. Segmented Information and Expenses by Object (continued)

a) Total Consolidated

	Other Districts (note 20(b))	Regional District (note 20(c))	Metro Vancouver Housing Corporation	Inter-district Adjustments	Consolidated Actual 2023	Consolidated Budget 2023	Consolidated Actual 2022
Revenues							
MVRD property tax requisitions	\$ —	\$ 102,475	\$ —	\$ —	\$ 102,475	\$ 102,550	\$ 91,708
Metered sale of water	344,789	—	—	—	344,789	338,337	329,678
Sewerage and drainage levy	324,219	—	—	—	324,219	324,266	301,425
Tipping fees	135,287	—	—	—	135,287	121,922	125,797
Housing property rentals	—	—	44,387	—	44,387	43,718	43,267
BODTSS industrial charges	12,286	—	—	—	12,286	12,496	12,431
Development cost charges	95,171	—	—	—	95,171	92,289	60,583
Grants and other contributions	56,353	52,944	(485)	—	108,812	80,512	35,594
User fees, recoveries, and other revenues	44,194	19,200	1,276	(17,350)	47,320	44,185	46,411
Sinking fund and interest income	42,628	11,193	3,175	(301)	56,695	37,284	40,353
Sinking fund income members and TransLink	—	27,265	—	—	27,265	28,019	27,072
	1,054,927	213,077	48,353	(17,651)	1,298,706	1,225,578	1,114,319
Expenses							
Salaries and benefits	134,596	120,454	7,460	(31,176)	231,334	246,265	213,969
Consulting, contracted and professional services	184,409	28,421	1,120	(1,943)	212,007	194,048	182,918
Asset repairs and maintenance	27,059	12,977	14,488	34	54,558	61,226	46,157
Materials and supplies	38,367	6,402	164	(21)	44,912	44,047	37,236
Utilities, permits, and taxes	29,227	2,054	4,568	(5)	35,844	35,386	32,341
Other	30,300	41,214	907	(15,810)	56,611	52,635	57,464
Amortization of tangible capital assets and prepaid land leases	98,028	8,597	1,907	—	108,532	100,755	99,336
Loss of disposal of tangible capital assets	1,937	—	—	—	1,937	—	—
Interest on long-term debt	79,390	—	2,030	(301)	81,119	80,980	66,942
	623,313	220,119	32,644	(49,222)	826,854	815,342	736,363
Corporate costs (recovery)	73,208	(107,138)	2,359	31,571	—	—	—
	696,521	112,981	35,003	(17,651)	826,854	815,342	736,363
Annual Surplus (deficit)	\$ 358,406	\$ 100,096	\$ 13,350	\$ —	\$ 471,852	\$ 410,236	\$ 377,956

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 39

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

20. Segmented Information and Expenses by Object (continued)

b) Total Other Districts

	Liquid Waste Services	Solid Waste Service	Total Sewerage & Drainage District	Water Operations	Building Operations	Elimination Entry	Total Water District	Total Other Districts Actual 2023	Total Other Districts Budget 2023	Total Other Districts Actual 2022
Revenues										
Metered sale of water	\$ —	\$ —	\$ —	\$ 344,789	\$ —	\$ —	\$ 344,789	\$ 344,789	\$ 338,337	\$ 329,678
Sewerage and drainage levy	324,219	—	324,219	—	—	—	—	324,219	324,266	301,425
Tipping fees	—	135,287	135,287	—	—	—	—	135,287	121,922	125,797
BODTSS industrial charges	12,286	—	12,286	—	—	—	—	12,286	12,496	12,431
Development cost charges	95,171	—	95,171	—	—	—	—	95,171	92,289	60,583
Grants and other contributions	56,353	—	56,353	—	—	—	—	56,353	62,646	29,870
User fees, recoveries, and other revenues	8,326	10,115	18,441	10,737	20,625	(5,609)	25,753	44,194	38,804	46,219
Sinking fund and interest income	16,247	4,046	20,293	20,299	2,036	—	22,335	42,628	34,110	33,247
	512,602	149,448	662,050	375,825	22,661	(5,609)	392,877	1,054,927	1,024,870	939,250
Expenses										
Salaries and benefits	73,303	7,344	80,647	53,447	502	—	53,949	134,596	141,027	117,428
Consulting, contracted, and professional services	51,891	115,973	167,864	14,323	2,222	—	16,545	184,409	154,227	160,078
Asset repairs and maintenance	16,680	976	17,656	6,926	2,477	—	9,403	27,059	19,359	21,113
Materials and supplies	21,100	23	21,123	17,159	85	—	17,244	38,367	38,061	31,610
Utilities, permits, and taxes	19,253	309	19,562	8,887	778	—	9,665	29,227	28,244	25,839
Other	8,960	11,340	20,300	9,230	770	—	10,000	30,300	28,062	34,195
Amortization of tangible capital assets	45,901	6,729	52,630	39,126	6,272	—	45,398	98,028	89,276	87,996
Loss on disposal of tangible capital assets	1,333	—	1,333	604	—	—	604	1,937	—	—
Interest on long-term debt	42,328	4,098	46,426	28,364	4,600	—	32,964	79,390	79,817	65,758
	280,749	146,792	427,541	178,066	17,706	—	195,772	623,313	578,073	544,017
Corporate costs (recovery)	42,665	5,700	48,365	30,452	—	(5,609)	24,843	73,208	71,988	67,762
	323,414	152,492	475,906	208,518	17,706	(5,609)	220,615	696,521	650,061	611,779
Annual surplus (deficit)	\$ 189,188	\$ (3,044)	\$ 186,144	\$ 167,307	\$ 4,955	\$ —	\$ 172,262	\$ 358,406	\$ 374,809	\$ 327,471

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 40

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

20. Segmented Information and Expenses by Object (continued)

c) Total Regional District

	Regional Parks	General Government	Air Quality	Regional Employees Services	E911 Emergency Telephone Service	Regional Planning	Invest Vancouver	Housing Planning and Policy	Regional Sub-total 2023
Revenues									
MVRD property tax requisitions	\$ 64,107	\$ 7,249	\$ 7,627	\$ 2,688	\$ 5,680	\$ 4,131	\$ 3,292	\$ 6,281	\$ 101,055
Grants and other contributions	724	52,019	100	—	—	—	26	—	52,869
User fees, recoveries, and other revenues	3,671	721	4,867	195	94	45	—	14	9,607
Gain (loss) on disposal of tangible capital assets	—	—	—	—	—	—	—	—	—
Sinking fund and interest income	1,675	2,797	210	138	22	152	59	872	5,925
Sinking fund income, members and TransLink	—	—	—	—	—	—	—	—	—
	70,177	62,786	12,804	3,021	5,796	4,328	3,377	7,167	169,456
Expenses									
Salaries and benefits	21,766	3,700	7,726	2,816	—	3,273	2,162	920	42,363
Consulting, contracted and professional services	3,503	1,215	2,460	64	5,607	573	636	300	14,358
Asset repairs and maintenance	4,269	36	58	2	—	3	3	—	4,371
Materials and supplies	1,899	25	317	5	—	4	12	—	2,262
Utilities, permits, and taxes	915	3	102	12	26	4	15	2	1,079
Other	3,902	2,065	100	74	—	104	735	17	6,997
Amortization of tangible capital assets	1,975	—	280	—	2	—	—	—	2,257
Loss of disposal of tangible capital assets	—	—	—	—	—	—	—	—	—
	38,229	7,044	11,043	2,973	5,635	3,961	3,563	1,239	73,687
Corporate costs (recovery)	4,569	1,013	1,777	(37)	113	367	244	117	8,163
	42,798	8,057	12,820	2,936	5,748	4,328	3,807	1,356	81,850
Annual surplus (deficit)	\$ 27,379	\$ 54,729	\$ (16)	\$ 85	\$ 48	\$ —	\$ (430)	\$ 5,811	\$ 87,606

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 41

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

20. Segmented Information and Expenses by Object (continued)

c) Total Regional District (continued)

	Carried Forward	Electoral Area Service	Regional Global Positioning System	Sasamat Volunteer Fire Department	Regional Emergency Management	Corporate Programs	Members and TransLink, Sinking Fund Income	Regional Districts Actual 2023	Regional Districts Budget 2023	Regional Districts Actual 2022
Revenues										
MVRD property tax requisitions	\$101,055	\$ 407	\$ —	\$ 841	\$ 172	\$ —	\$ —	\$102,475	\$102,549	\$ 91,708
Grants and other contributions	52,869	301	—	—	—	(226)	—	52,944	1,037	3,965
User fees, recoveries, and other revenues	9,607	4	374	5	6	9,204	—	19,200	20,198	12,651
Gain (loss) on disposal of tangible capital assets	—	—	—	—	—	—	—	—	—	—
Sinking fund and interest income	5,925	107	68	82	26	4,985	—	11,193	2,276	4,098
Sinking fund income, members and TransLink	—	—	—	—	—	—	27,265	27,265	28,019	27,072
	169,456	819	442	928	204	13,963	27,265	213,077	154,079	139,494
Expenses										
Salaries and benefits	42,363	358	210	46	—	77,477	—	120,454	126,656	105,711
Consulting, contracted and professional services	14,358	127	—	58	232	13,646	—	28,421	40,715	21,905
Asset repairs and maintenance	4,371	1	66	38	—	8,501	—	12,977	18,381	10,447
Materials and supplies	2,262	1	4	33	—	4,102	—	6,402	5,741	5,421
Utilities, permits, and taxes	1,079	2	12	28	—	933	—	2,054	2,339	1,904
Other	6,997	126	—	91	1	6,734	27,265	41,214	42,329	40,885
Amortization of tangible capital assets	2,257	—	—	47	32	6,261	—	8,597	8,104	8,369
	73,687	615	292	341	265	117,654	27,265	220,119	244,265	194,642
Corporate costs (recovery)	8,163	41	48	44	11	(115,445)	—	(107,138)	(105,197)	(90,939)
	81,850	656	340	385	276	2,209	27,265	112,981	139,068	103,703
Annual surplus (deficit)	\$ 87,606	\$ 163	\$ 102	\$ 543	\$ (72)	\$ 11,754	\$ —	\$100,096	\$ 15,011	\$ 35,791

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 42

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

21. Supplementary Cash Flow Information

The following non-cash transactions related to the initial adoption of PS 3280 Asset Retirement Obligation (note 2) are excluded from the statement of cash flows.

	2023	2022
Asset retirement cost (a)	\$ 53,101	\$ —
Increase to asset retirement obligation	(53,101)	—
	\$ —	\$ —

(a) Assets acquired through other non-cash transactions are excluded from the acquisition of tangible capital assets on the statement of cash flows.

	2023	2022
Acquisition of tangible capital assets	\$ 753,989	\$ 723,206
Asset retirement cost	53,101	—
Tangible capital asset additions (note 14)	\$ 807,090	\$ 723,206

22. Comparative Figures

Certain prior year figures have been reclassified to conform to the presentation of the current year.

METRO VANCOUVER REGIONAL DISTRICT

Schedule 1 (unaudited), page 1

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

The following information does not form part of the basic financial statements and is therefore unaudited.

METRO VANCOUVER REGIONAL DISTRICT

Schedule 1 (unaudited), page 2

Year ended December 31, 2023

(tabular amounts in thousands of dollars)

Growing Communities Fund Grant (unaudited)

The Province of British Columbia, under the Growing Communities Fund, provided the District with a grant of \$50.78 million in 2023 for investments in community infrastructure and amenities to support the growth of the local housing supply. The District recognized the grant into income in 2023. No costs have been applied against the grant as of December 31, 2023.

	Allocated Funding	2023
Balance, beginning of the year	\$ —	\$ —
Growing Communities Fund Grant received	50,780	50,780
	50,780	50,780
Less eligible costs incurred:		
Unallocated	50,780	—
	50,780	—
Balance, end of year	\$ —	\$ 50,780



2023 Metro Vancouver Financial Results

Linda Sabatini
Director, Financial Operations

Finance Committee – April 10, 2024
66513161

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METRO VANCOUVER

Audited 2023 Financial Statements and Annual Financial Results

- Operating Results
- Financial Position and Key Indicators
- Differences between
 - Public Sector Accounting Standards (PSAS)
 - Budget Preparation based on enabling legislation

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2

SURPLUS TO BUDGET

Key Items

- Surplus
- PSAS Items
- Surplus per Budget

Statement of Operations and Surplus to Budget For the year ended December 31, 2023 (in thousands of dollars)

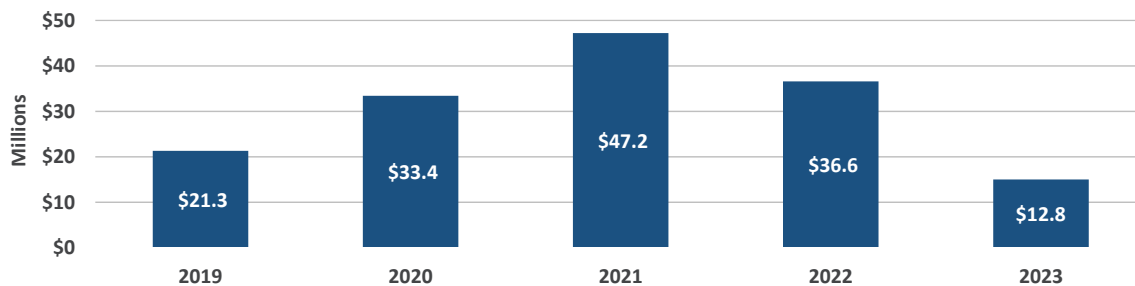
	2023
Revenue	\$ 1,298,706
Expenses	(826,854)
Annual Surplus per PSAS	\$ 471,852
Applications and transfers included in operating budget	
Contributions to capital	214,593
Payments on long-term debt	139,056
Transfers to (from) reserves	54,160
PSAS items excluded from annual operating budget	
Amortization of capital assets	(108,532)
Accretion expense on ARO	(2,231)
Sinking fund and debt retirement income	38,342
Capital revenue, grants and DCCs	89,687
Reserve fund interest	21,020
Corporate program surplus to reserves	12,972
	459,067
Annual Surplus based on budget	\$ 12,785

2023 OPERATING PROGRAM

- \$12.8 million surplus
- 1.2% of budget
- Lower due to inflationary challenges
- Per policy, surplus/deficit applied to reserves.

Metro Vancouver Surplus (\$ millions)

	2019	2020	2021	2022	2023
Water Services	\$ 5.9	\$ 1.7	\$ 8.4	\$ 8.0	\$ 2.8
Liquid Waste Services	8.9	4.5	10.7	14.0	(3.1)
Solid Waste Services	-	14.5	17.4	(2.3)	(3.4)
MVHC	2.7	7.8	15.3	10.3	13.2
MVRD	3.8	4.9	4.8	6.6	3.3
Total	\$ 21.3	\$ 33.4	\$ 56.5	\$ 36.6	\$ 12.8
% of Budget	2.5%	3.7%	5.0%	3.6%	1.2%



FINANCIAL POSITION

4 Key Indicators

- Financial Assets
- Net Debt
- Non-Financial Assets
- Accumulated Surplus

Condensed Consolidated Statement of Financial Position As of December 31, 2023

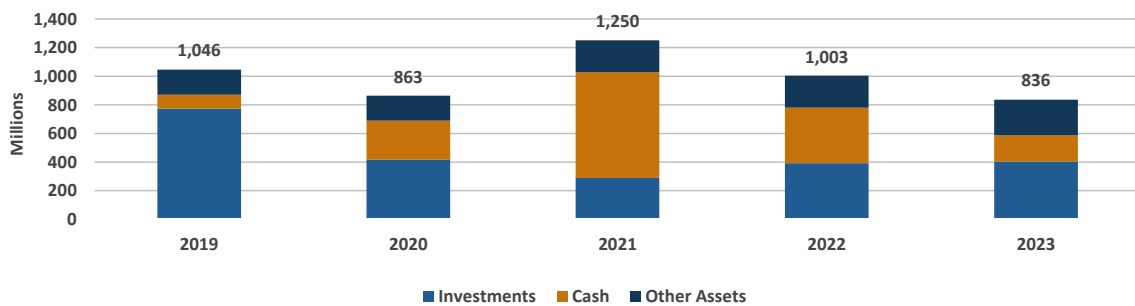
(in thousands of dollars)	2023
Cash, cash equivalents and investments	\$ 586,236
Other financial assets	254,813
Total Financial Assets	841,049
Liabilities	809,849
Debt, net of Translink and members	1,823,825
Total Liabilities	2,633,674
Net Debt	(1,792,625)
Non-Financial Assets	8,524,075
2023 Accumulated Surplus	\$ 6,731,450

FINANCIAL ASSETS

- Mainly Cash, Investments and Receivables
- Good Cash and Liquidity Position
- Current ratio - Ability to meet current obligations
- Total Reserves includes DCCs

Metro Vancouver Liquidity Indicators (\$ millions)

	2019	2020	2021	2022	2023
Current Ratio	3.3 to 1	2.8 to 1	3.2 to 1	2.7 to 1	2.5 to 1
Operating Reserves/Revenue	7.2%	9.5%	11.6%	14.5%	14.2%
Total Reserves	\$ 487.7	\$ 541.5	\$ 656.8	\$ 714.6	\$ 755.5

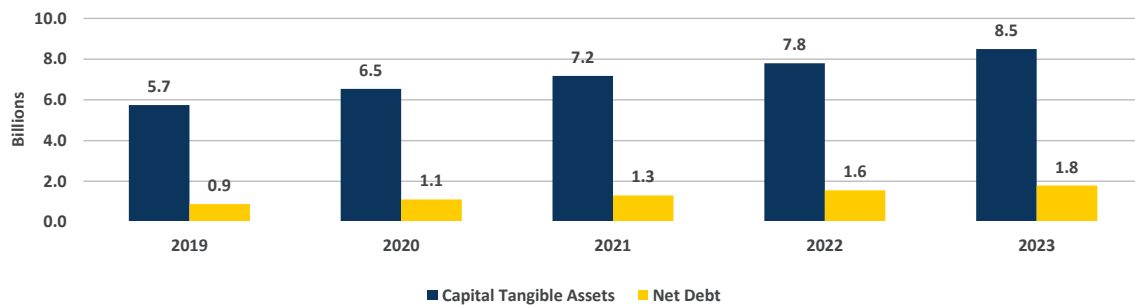


CAPITAL ASSETS & NET DEBT

- Investment in Tangible Capital Assets was \$699.3M
- Net debt position increased by \$227.5 M
- Debt Servicing Ratio is 19% which is below policy maximum of 40%

Metro Vancouver Capital Assets and Net Debt (net of Translink and Member Municipalities) (\$ billions)

	2019	2020	2021	2022	2023
Capital Tangible Assets	\$ 5.8	\$ 6.6	\$ 7.2	\$ 7.8	\$8.5
Net Debt	0.9	1.1	1.3	1.6	1.8



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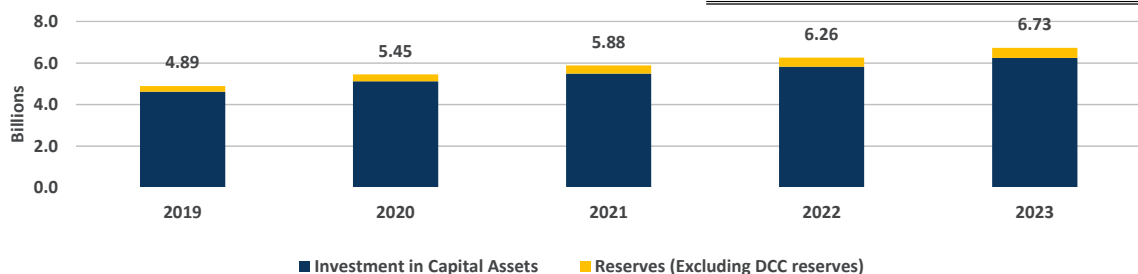
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ACCUMULATED SURPLUS

- Accumulated Surplus:
 - Reserves
 - Investment in Capital Assets.
- Growth each year from:
 - Surplus
 - Increases in assets from infrastructure projects

Metro Vancouver Accumulated Surplus (net of Translink and Member Municipalities) (\$ billions)

	2019	2020	2021	2022	2023
Accumulated Surplus Beginning of Year	\$4.39	\$ 4.88	\$ 5.45	\$ 5.88	\$ 6.26
PSAB Surplus	.49	.57	.43	.38	.47
Accumulated Surplus, End of Year	\$ 4.88	\$ 5.45	\$ 5.88	\$ 6.26	\$ 6.73



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Questions

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To: Mayors Committee

From: Jean Lawson, Program Manager, Intergovernmental Relations

Date: March 25, 2024 Meeting Date: April 11, 2024

Subject: **UBCM 2024 Community Excellence Awards Nominations**

RECOMMENDATION

That the MVRD Board support Metro Vancouver's entries for the Union of BC Municipalities (UBCM) 2024 Community Excellence Award. The nominations include:

- a) Excellence in Service Delivery: Ferguson Road Upgrades
 - b) Excellence in Asset Management: Earthquake Early Warning System and Strategic Response System
 - c) Excellence in Sustainability: Señákw Development Sewer Heat Recovery District Energy System
-

EXECUTIVE SUMMARY

The UBCM Community Excellence Awards recognize UBCM members that have implemented projects or programs that demonstrate excellence in meeting the purposes of local government. Metro Vancouver is seeking Board support for the following projects "Ferguson Road Upgrades", "Earthquake Early Warning System and Strategic Response System", "Señákw Development Sewer Heat Recovery District Energy System".

PURPOSE

To seek Board support for three Metro Vancouver projects to be considered for the UBCM 2024 Community Excellence Awards.

BACKGROUND

Metro Vancouver is a member of UBCM and may submit one project per award category for the UBCM Community Excellence Awards. UBCM requires a board resolution indicating support for projects to be considered for a 2024 Community Excellence Award.

UBCM 2024 COMMUNITY EXCELLENCE AWARDS

The UBCM Community Excellence Awards recognize UBCM members that have implemented projects or programs that demonstrate excellence in meeting the purposes of local government. Awards will be presented during UBCM's 2024 Convention.

Award categories include:

- Excellence in Governance
- Excellence in Sustainability
- Excellence in Service Delivery
- Excellence in Asset Management

All applications will be scored against the following criteria:

- Leadership
- Financial management and planning
- Partnerships and collaboration
- Innovation and promising practices
- Engagement and communications
- Transferability
- Performance measurement

Staff have reviewed the award categories and criteria and are recommending the following entries in three categories.

Excellence in Service Delivery

This category includes projects/programs that provide effective services in a proactive manner, demonstrate benefit to the community, and are integrated with community plans and aligned with financial plans.

Ferguson Road Upgrades

Metro Vancouver has partnered with the Vancouver Airport Authority with a 50/50 cost sharing agreement to deliver a realigned and upgraded Ferguson Road, which is the only vehicle access point to Iona Island. The upgraded road will address the existing poor road conditions, lack of separation between pedestrians and cyclists with vehicular traffic, and meet the requirements for the construction of the new Iona Island Wastewater Treatment Plant.

Substantial completion of the project is expected by April 2024 and demonstrates Metro Vancouver’s commitment to the Regional Recreation Greenway Network. These upgrades are part of critical work needed prior to starting ground improvements for the new treatment plant.

Excellence in Asset Management

Asset management is an integrated business approach that involves planning, finance, engineering, and operations to effectively manage existing and new infrastructure in order to maximize benefits, reduce risk and provide satisfactory levels of service to community users in a sustainable manner. This category includes projects/programs that demonstrate a comprehensive system of asset management policies and practices that meet and/or exceed accepted best practices.

Earthquake Early Warning System and Strategic Response System (EEW-SRS)

One of Metro Vancouver’s strategic priorities, per the Board’s Strategic Plan, includes “Resilient Services and Infrastructure”. In this regard, the Earthquake Early Warning System and Strategic Response System includes the placement of a network of EEW-SRS sensors at the Seymour-Capilano Filtration Plant (SCFP), Coquitlam Water Treatment Plant (CWTP) and Metro Vancouver Head Office. These integrated early warning and strong motion detection sensors, with associated peripherals, provide early warning alarms and measure the earthquake shaking on the instrumented facilities to collect real-time data of seismic events that may disrupt the region’s drinking water.

As a result, the success of the project is leading to: a review of what automated actions can be initiated once the alarms are activated; expansion of the system to cover more sites throughout the region; potential lessons (replicability) for municipal water distribution systems to protect their assets and people; and potential uses beyond the water supply system such as wastewater and housing.

This project meets the objectives of the Excellence in Asset Management category, as it is aligned with the Core Elements of Asset Management for Sustainable Service Delivery, and BC Framework. The expansion of the project includes learnings and new investigations applied in which the coverage, robustness and redundancy in the system will fully institutionalize the system for the Greater Vancouver Water District. In addition, the project enables its potential use for other critical operations at Metro Vancouver and for member jurisdictions to potentially apply similar approaches, while demonstrating leadership by enhancing Metro Vancouver's emergency preparedness, coordination with the Province and regional public health and safety. This project and its expansion ensures the resiliency of the water system and providing uninterrupted service by providing greater EEW/SHM coverage, improving warning times, adding water supply system robustness and resiliency, and enhancing Metro Vancouver's pre- and post-earthquake response for the region.

Excellence in Sustainability

This category recognizes UBCM members that incorporate a long-term sustainability lens by considering the four pillars – cultural, social, economic, and environmental issues - in planning, policy and practice.

Señákw Development Sewer Heat Recovery District Energy System

Metro Vancouver and Creative Energy are collaborating to develop a district energy system for the new Señákw development, which will use heat recovered from municipal sewage as the main source of heat, ensuring no fossil fuels are required to meet the heating needs of its occupants. Señákw will include over 6,000 rental units with over three million square feet of residential floor space. The project is slated to become one of the first large-scale net zero carbon housing projects in the world. Metro Vancouver has developed and is implementing a Sewage and Waste: Heat Recovery Policy that enables access to waste heat, to encourage its beneficial use and greenhouse gas emission reductions. The project will reduce annual greenhouse gas emissions by over 4,000 tonnes per year.

This project meets the objectives of the Excellence in Sustainability category, as it:

- Employs creative waste management practices to recover and use heat without the use of fossil fuels while reducing greenhouse gas emissions.
- Recognizes waste as a valuable resource with positive outcomes.
- Pioneering climate leadership by standing out as one of the world's first large-scale net-zero carbon housing initiatives.
- Aligns seamlessly with broader strategic objectives.

ALTERNATIVES

1. That the MVRD Board support Metro Vancouver’s entries for the Union of BC Municipalities (UBCM) 2024 Community Excellence Award. The nominations include:
 - a. Excellence in Service Delivery: Ferguson Road Upgrades
 - b. Excellence in Asset Management: Earthquake Early Warning System and Strategic Response System
 - c. Excellence in Sustainability: Señákw Development Sewer Heat Recovery District Energy System
2. That the MVRD Board receive the report titled “UBCM 2024 Community Excellence Awards Nominations” dated March 25, 2024 and provide alternate direction to staff.
3. That the MVRD Board direct staff to not apply for the UBCM 2024 Community Excellence Awards.

FINANCIAL IMPLICATIONS

There are no financial implications to this report.

CONCLUSION

The UBCM Community Excellence Awards recognize members and projects that demonstrate promising practices and innovation. The recommended projects for the 2024 awards are strong examples of Metro Vancouver’s collaboration and innovation that can be replicated by other jurisdictions. With the support of the MVRD Board, these award applications would help profile outstanding projects and programs delivered by Metro Vancouver and increase awareness of Metro Vancouver and its services.

REFERENCES

[2024 UBCM Community Excellence Awards](#)

67019087

To: Metro Vancouver Regional District (MVRD) Board

From: Heather McNell, Deputy Chief Administrative Officer, Policy and Planning

Date: April 7, 2024 Meeting Date: April 26, 2024

Subject: **Proclamation of Clean Transportation Month 2024**

RECOMMENDATION

That the MVRD Board proclaim June 2024 as “Clean Transportation Month” for the Metro Vancouver region.

EXECUTIVE SUMMARY

In 2022 and 2023, Invest Vancouver sought a proclamation of Clean Transportation Month from the MVRD Board and the Province of BC to highlight emerging clean tech solutions in the region and to proactively create opportunities for investment and industry growth. More companies and organizations are seeing the value of recognizing June as clean transportation month with events such as Hydrogen International Expo and Conference, Bike to Work Week, and Car Free Days all held in the month of June. Given the number of events and prospective attendees, there is an opportunity to once again promote the clean transportation industry to the general public by designating June 2024 as a month to celebrate and highlight clean transportation.

PURPOSE

To seek MVRD Board approval to proclaim June 2024 as “Clean Transportation Month” with the objective to promote and enhance the region’s clean transportation industry.

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.

The report is brought directly to the April 26, 2024 MVRD Board meeting as the next Invest Vancouver Management Board meeting is scheduled for late May, resulting in a too tight of a turnaround for the approval to declare June as Clean Transportation Month. The Invest Vancouver Management Board meets quarterly in 2024.

CONTEXT

In November 2021, Invest Vancouver published a report and findings related to clean transportation (Reference 1). The *Clean Transportation: Findings and actions to strengthen the sector in the Metro Vancouver region* highlighted that the Metro Vancouver region is well-positioned to lead the next global wave of clean transportation innovation, development, and commercialization.

To shed light on this emerging cluster in the region and to proactively create opportunities for investment and industry growth, Invest Vancouver successfully sought proclamation of Clean Transportation Month from the MVRD Board and the Province of BC in 2022 and 2023. The month

of June became Clean Transportation Month, making the sector a focus for both residents and decision-makers, and resulted in a local and national movement.

Invest Vancouver brought together partners to celebrate and learn about the industry strengths that exist in the region and to collectively promote several related events that took place in June 2023, including:

- HUB Spring Go by Bike Week;
- Hy-Fcell Canada 2023 (international hydrogen and fuel cell conference);
- Surrey Board of Trade: The Economic Future of Metro Vancouver - Transportation and Land Use Planning;
- Car Free Day Surrey;
- 2023 Island City, by Bike (City of Richmond biking event);
- Burnaby Board of Trade Clean Energy Summit;
- Future of Transportation, presented by Vancouver Entrepreneurs Forum; and
- Motivate 2023 (one-day conference partnership with CoMotion, TransLink, and Invest Vancouver).

The proclamation of clean transportation month and the promotion of events generated much brand and activity awareness. A created landing page developed for June 2023 that highlights various clean transportation events and activities received 304 page views and over 9,000 views through corresponding social media posts on Invest Vancouver channels (Reference 2). Additionally, the month was mentioned on social media by 15 related organizations, such as InBC, Burnaby Board of Trade, BC Centre of Innovation in Clean Energy, and Greater Vancouver Board of Trade.

JUNE 2024 AS “CLEAN TRANSPORTATION MONTH”

Building on the success of last year’s clean transportation month, Invest Vancouver is planning a collaborative event in partnership with TransLink and the Vancouver Entrepreneurs’ Forum for June 2024 to promote new mobility. While the program for the “New Mobility Forum” is still being planned, the intention is to showcase panels and keynotes that highlight the strengths and specializations of the Metro Vancouver region, emerging trends, policy discussions, and other information of relevance to a policy and investor audience.

In addition, a growing number of events related to clean transportation are planned in the Metro Vancouver region, as outlined in Table 1 below.

Table 1: Clean Transportation-related events planned for June 2024 (as of April 5, 2024)

Event Title	Date	Description (from event organizer)
Hub Bike to School Week	June 3 - 9	Over 40 schools have registered for the free annual celebration that encourages students of all ages to bike, roll, or walk to school.

Hub Bike to Work Week	June 3 - 9	Go by Bike Week is a celebration of cycling, where we encourage everyone in Metro Vancouver to give cycling a try and motivate those who already do to keep riding.
Metro Vancouver Climate Action Dialogues: Transportation Webinar	June 6	Climate Action Dialogues focused on transportation, the largest source of greenhouse gas emissions in the Metro Vancouver region. Metro Vancouver’s Climate 2050 Transportation Roadmap charts the course toward a carbon-neutral, resilient transportation system, with strategies to reduce emissions and protect the network from climate impacts.
Burnaby Board of Trade 2024 Clean Energy Summit	June 11	The 2024 Clean Energy Summit is celebrating Burnaby as a hub for clean energy. The event aims spotlight opportunities and foster collaboration to expedite our shift towards a clean, low-carbon economy, while also focusing on a broad spectrum of topics including energy production, transportation, and more.
Hy-Fcell Canada 2024	June 17 - 19	Hy-Fcell Canada brings together renowned international specialists to discuss solutions for clean energy with hydrogen and fuel cells. The two-day interactive conference program and international exhibition is complemented by a full day of technology tours.
Let’s Keep Moving – Active Transportation Summit 2024	June 18 - 19	The 2024 Active Transportation Summit - co-hosted by BCCC, MOTI and movmi - is a two day conference where planners, engineers, and leaders from local and provincial governments, industry, nonprofits, and academia meet to shape the future of Active Transportation in British Columbia.
ITS Canada 2024 Annual Conference & Expo	June 19 - 21	The 2024 ITS Canada Annual Conference & Expo, supported by the British Columbia Ministry of Transport & Infrastructure, focuses on the theme "Evolution of Collaboration" in the transportation industry. This theme highlights the power of collective efforts to address complex challenges in today's interconnected transportation landscape.
UITP North America Forum	June 23 - 26	The UITP North America Forum is an annual conference aimed on the developments in the urban transit industry. This year’s forum will be multimodal including bus electrification, rail automation and on-demand mobility.

New Mobility Forum	June 27	Event planned by TransLink, Vancouver Entrepreneurs’ Forum, and Metro Vancouver to highlight new mobility in the Metro Vancouver region, including the region’s clean transportation industry.
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These events will attract global leaders, multinational corporations, investors, and learners interested in learning more about and advancing clean transportation in the Metro Vancouver region and beyond. Given the number of events and prospective attendees, there is an opportunity to amplify the collective activity to promote the clean transportation industry in the Metro Vancouver region and the Province by designating June 2024 as a month to celebrate clean transportation, just as in 2022 and 2023. To that end, a proclamation submission to the Province of BC to declare June 2024 as “Clean Transportation Month” has been requested again, and is pending approval.

A third successive regional proclamation of June as clean transportation month will serve to build momentum for the clean transportation industry in the region and encourage a critical mass of leaders to explore and activate clean transportation innovations and solutions every year. A proactive, intentional, and collective effort to energize an industry in which our region has demonstrated key competitive advantages will accelerate growth and cultivate our region’s reputation as an international destination for innovation in the future-forward clean tech sector and as a clean transportation hub to global investors.

ALTERNATIVES

1. That the MVRD Board proclaim June 2024 as “Clean Transportation Month” for the Metro Vancouver region.
2. That the MVRD Board receive for information the report dated April 7, 2024, titled “Proclamation of Clean Transportation Month” and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

Any events associated are within Invest Vancouver’s board approved 2024 budget.

CONCLUSION

Capitalizing on the success of 2022 and 2023 clean transportation month, Invest Vancouver aims to continue the momentum for "Clean Transportation Month" in June 2024. Such a proclamation will help showcase the emerging clean tech solutions being developed in the Metro Vancouver region. A provincial proclamation from the Province of BC and a regional proclamation from the MVRD Board will provide much-needed attention to the industry for both the general public and decision-makers. With Invest Vancouver as a regional convener, the proclamation declaration and coalition of activities will promote the region’s value proposition, foster collaboration and enhance our ecosystem as a way to strengthen our clean tech industry to grow our economy.

References:

1. [Clean Transportation: Findings and Actions to Strengthen the Sector in the Metro Vancouver region](#)
2. [June 2023: Clean Transportation Month](#)

63985070

To: Finance Committee

From: Nick Kassam, General Manager, Procurement & Real Estate Services

Date: March 27, 2024 Meeting Date: April 10, 2024

Subject: Policy Update: Procurement and Real Property Contracting Authority Policies

RECOMMENDATION

That the MVRD/GVWD/GVS&DD/MVHC Boards:

- a) adopt the *Procurement and Asset Disposal Authority Policy*, as presented in the report dated March 27, 2024, titled “Policy Update: Procurement and Real Property Contracting Authority Policies”, effective June 1, 2024;
- b) adopt the *Real Estate Authority Policy*, as presented in the report dated March 27, 2024, titled “Policy Update: Procurement and Real Property Contracting Authority Policies”, effective June 1, 2024; and

That the MVRD Board:

- a) rescind the *Asset Disposal Policy* (No. FN-011), effective May 31, 2024;
- b) rescind the *Procurement and Real Property Contracting Authority Policy* (No. FN-006), effective May 31, 2024.
- c) revise the *Fleet Planning and Acquisition Policy* (No. FN-014), as presented in the report dated March 27, 2024, titled “Policy Update: Procurement and Real Property Contracting Authority Policies”, effective June 1, 2024;
- d) give first, second and third reading to *Metro Vancouver Regional District Officers and Delegation Amendment Bylaw No. 1375, 2024*; and
- e) adopt *Metro Vancouver Regional District Officers and Delegation Amendment Bylaw No. 1375, 2024*.

That the GVWD Board:

- a) rescind the *Procurement and Real Property Contracting Authority Policy* (No. FN-006), effective May 31, 2024.
- b) give first, second and third reading to *Greater Vancouver Water District Officers and Delegation Amendment Bylaw No. 263, 2024*; and
- c) adopt *Greater Vancouver Water District Officers and Delegation Amendment Bylaw No. 263, 2024*.

That the GVS&DD Board:

- a) rescind the *Procurement and Real Property Contracting Authority Policy* (No. FN-006), effective May 31, 2024.
- b) give first, second and third reading to *Greater Vancouver Sewerage and Drainage District Officers and Delegation Amendment Bylaw No. 373, 2024*; and
- c) adopt *Greater Vancouver Sewerage and Drainage District Officers and Delegation Amendment Bylaw No. 373, 2024*.

That the MVHC Board:

- a) resolve that, the Consent Resolution made with effect on September 1, 2014 regarding Procurement and Real Property Contracting Authority, ceases to have any force and effect on May 31, 2024; and
- b) authorizes the Chief Administrative Officer of the Metro Vancouver Regional District to:
 - i. establish policies and procedures for such matters as may be necessary or desirable for the efficient management, administration and operation of the Metro Vancouver Housing Corporation, including the Corporate Policies;
 - ii. negotiate and make, enter into, execute and deliver any contracts, agreements, and other documents and instruments to which the *Procurement and Asset Disposal Authority Policy*, or the *Real Estate Authority Policy*, does not apply; and
 - iii. authorize other appointed officers and employees of the Metro Vancouver Regional District to negotiate and make, enter into, execute and deliver any contracts, agreements, and other documents and instruments to which the *Procurement and Asset Disposal Authority Policy*, or the *Real Estate Authority Policy*, does not apply.

EXECUTIVE SUMMARY

The *Procurement and Real Property Contracting Authority Policy* (No. FN-006) (the “Existing Policy”) outlines the authorization and competition requirements for the procurement of goods, services and construction, as well as the authorization and general requirements for the acquisition, disposition, use or management of real property. The Existing Policy was created in 2014 with a minor update in 2017. It is appropriate and best practice for organizations to regularly review policies and delegated authorities to improve accountability and internal controls, risk mitigation, operational efficiency and overall fairness and transparency related to procurement and real estate activity.

Staff have recently conducted a review of the Existing Policy and are recommending replacing the Existing Policy with two new Board policies (the “Board Policies”) and two new Corporate policies (the “Corporate Policies”, and together with the Board Policies, the “Replacement Policies”). The Replacement Policies have taken into consideration: benchmarks from other public sector organizations; efficiency impacts; internal financial controls and risk management; business needs and changes in the business; financial and regulatory environment; market conditions; and alignment with the Board Strategic Priorities. Staff noted that the proposed changes are aligned with comparable peer public sector organizations (shown in the table on page 3). Specific updates to the Existing Policy, as well as administrative changes to other Board policies and bylaws that reference the Existing Policy, are outlined in the body of the report below.

Staff have enhanced public reporting by publishing procurement contract awards every month on the Metro Vancouver website. As part of quarterly financial performance reporting to the Board, staff will include relevant procurement information, and starting in early 2025, staff will be bringing forward

¹ For MVRD: *Greater Vancouver Regional District Officers and Delegation Bylaw No. 1208, 2014*. For GVWD: *Greater Vancouver Water District Officers and Delegation Bylaw No. 247, 2014*.

For GVS&DD: *Greater Vancouver Sewerage and Drainage District Officers and Delegation Bylaw No. 284, 2014*.

² Consent Resolution made with effect on September 1, 2014 regarding Procurement and Real Property Contracting Authority.

annual procurement and real estate reports with detailed information on the previous year’s activity for both these functions.

For efficient and effective administration of Metro Vancouver, each Board has delegated certain powers, duties, and functions to officers and employees, by bylaw¹ in the case of MVRD, GVWD, and GVS&DD, and by Board resolution² in the case of MVHC. Specific authorities discussed in this report include commitment and contract execution authority for procurement and real estate transactions.

PURPOSE

To seek Board approval to replace the *Procurement and Real Property Contracting Authority Policy* (No. FN-006) with the *Procurement and Asset Disposal Authority Policy* and the *Real Estate Authority Policy*, as attached.

BACKGROUND

Following the creation of the Procurement and Real Estate Services department in 2022, staff undertook a review of the existing policies as part of continuous improvement efforts. The review looked at the procurement and real estate activities across the organization, with an intent to ensure effectiveness and recommend to each Board any changes required to optimize these activities.

The Replacement Policies were written to better align with Board Strategic Priorities by improving oversight, controls, and risk management for financial sustainability while enabling work to support other Board priorities and directions. There are additional initiatives currently underway in the department that are focused on improving work processes, systems, and tools which will also generate operational efficiencies and organizational collaboration on planning and strategy.

In this regard, staff have performed an analysis of the current state, identified critical administrative authorities and policies to be revised, and consulted key senior stakeholders across the organization. When reviewing existing authorities and proposed updates, staff have taken into consideration the organizational risks, public sector benchmarks, financial controls, efficiency impacts and increasing costs of doing business in the markets, while maintaining the appropriate level of oversight by each Board. All procurement and real estate transactions require evidence of the Board(s) approved budget for all capital and operating expenditures.

The following table highlights policy thresholds from comparable public sector organizations:

Organization	Procurement	Real Estate
TransLink	CEO approves contract awards within approved budgets. <i>(Board approves overall budgets and exceptions)</i>	Board approves real property transactions > \$10 million
ICBC	CEO has full authority for contract awards <i>(ICBC Operations)</i>	Board approves real property transactions > \$10 million
Toronto	Council approves contract awards > \$20 million	Council approves real property transactions > \$10 million

BC Hydro	Board approves contract awards > \$50 million	Board approves real property transactions > \$75 million
Transportation Investment Corp (TI)	Board approves contract awards > \$20 million for consulting and > \$40 million for construction	CEO has full authority for real property transactions

REPLACEMENT OF EXISTING POLICY

The main administrative update to the Existing Policy is a separation of the procurement and real estate sections into a separate Board Policy for each function. The primary purpose for the separation is to improve clarity on the application of the policy statements for each function, which under the Existing Policy can be ambiguous.

For further simplicity, administrative and operational efficiency, and in accordance with the Chief Administrative Officer’s delegated authority granted by bylaw (in the case of MVRD, GVWD and GVS&DD) and by Board resolution (in the case of MVHC), of the CAO will establish two new Corporate Policies (one for each function). The Corporate Policies will establish the CAO’s sub-delegation of commitment and contracting authority to certain staff. The creation of the Corporate Policies will optimize administrative efficiency by permitting the CAO to change sub-delegations as required to manage changing operational needs. The creation of the Corporate Policies will not impact the Board’s delegation of authority as set out in Board Policies.

As general housekeeping, there are further details on the Replacement Policies highlighted below to clarify the policies’ goals, definitions, and scope.

Procurement Policy Updates

The following is a summary of the proposed material updates to the Existing Policy as reflected by the proposed *Procurement and Asset Disposal Authority Policy* (Board Policy) and *associated* Corporate Policy.

- Clear definition of authorities and updated financial thresholds for each authority
 - Commitment Authority: the authority to award a contract, including an administrative amendment, contract amendment or change order, as the context requires.
 - Contracting Authority: the authority to execute a contract, including an administrative amendment, contract amendment or change order, as the context requires.

- Contract Awards
 - Existing
 - The Existing Policy provides the following commitment and contracting limits:
 - For contract awards over \$5,000,000, Board approval required.
 - For contract awards over \$2,000,000 and up to \$5,000,000, CAO/Commissioner approval with concurrence required by CFO, department GM and Division Manager of Purchasing and Risk Management.
 - For contract awards up to \$2,000,000, staff approvals at different levels required.

- *Proposed*
 - For contract awards over \$10,000,000, Board approval required.
 - For contract awards up to \$10,000,000, CAO/Commissioner approval required with delegation to staff as determined by the CAO/Commissioner in the associated Corporate Policy.
- Contract Amendments / Change Orders
 - *Existing*
 - Change Orders over \$500,000 require CAO/Commissioner approval with concurrence required by CFO, department GM and Division Manager of Purchasing and Risk Management.
 - Changes Orders up to \$500,000, staff approvals at different levels required.
 - *Proposed*
 - For administrative and operational efficiency, CAO/Commissioner may approve Change Orders and Contract Amendments up to Board approved budget for the capital project or operating program under which the applicable goods, services or construction were procured, and may further sub-delegate to staff as determined by the CAO/Commissioner in the associated Corporate Policy.
 - Change Orders and Contract Amendments are subject to any approval process established by CFO from time to time and confirmation by Director, Procurement that the Change Order or Contract Amendment falls within existing scope of work.
 - CAO/Commissioner may, at their discretion, determine that Board approval is required notwithstanding delegated authority to the CAO/Commissioner or staff.
- Direct Awards and Single-Supplier
 - *Existing*
 - Contract may be awarded without competitive process for value up to \$5,000.
 - Exceptions for emergency situations.
 - *Proposed*
 - Contract may be awarded without competitive process for value up to \$25,000, at discretion of Director of Procurement.
 - Exceptions for emergency situations.
 - In case of single-supplier or other exigent circumstances which preclude an open competitive process, under the purview of the Director of Procurement, a Notice of Intent to Contract is publicly posted for 10 business days for contracts for goods and services over \$75,000 or construction contracts over \$200,000.
- Other Administrative Updates
 - Formal inclusion of Sustainable, Social, and Ethical Procurement practices.
 - Formal inclusion of Co-operative Purchasing protocol allowing for collaboration with member jurisdictions and public sector entities.

Real Estate Policy Updates

The following is a summary of the proposed material updates to the Existing Policy as reflected by the proposed *Real Estate Authority Policy* (Board Policy) and *associated* Corporate Policy.

- Clear definition of authorities and updated financial thresholds for each authority
 - Commitment Authority: the authority to approve a real estate transaction, including a contract amendment, as the context requires.
 - Contracting Authority: the authority to execute a contract, including a contract amendment, as the context requires.
- Transaction Authority Limits
 - *Existing*

The Existing Policy provides the following commitment and contracting limits:

 - For Standard Real Property Transactions (commitment no longer than five years and routine in nature)
 - Over \$2,000,000, Board approval required.
 - Up to \$2,000,000, CAO/Commissioner approval required with concurrence required by the CFO, department GM and Division Manager of Property.
 - For Long Term Real Property Transactions (commitment greater than five years or permanent in nature, including acquisition/disposition of fee simple interest, licenses, leases, etc.)
 - Over \$500,000 and any disposition of a fee simple interest, Board approval required.
 - Up to \$500,000 but excluding any disposition of a fee simple interest, CAO/Commissioner approval with concurrence required by department GM and Property Division Director.
 - *Proposed*
 - Eliminate distinction between Standard Real Property Transactions and Long-Term Real Property Transactions.
 - Transactions over \$10,000,000, Board approval required.
 - Transactions up to \$10,000,000, CAO/Commissioner approval required with delegation to staff as as determined by the CAO/Commissioner in the associated Corporate Policy.
- Other Administrative Updates
 - Only Board having jurisdiction has commitment authority to dispose of fee simple interest in a regional park or a regional trail.
 - CAO/Commissioner may approve the exercise of any lease renewal option, provided that the option and the total value of its exercise were contemplated in the original contract and the exercise does not increase the total value of the transaction in excess of the Board approved budget.

Administrative Updates to Other Board Policies and Bylaws

The following is a summary of the proposed amendments to other Board policies and bylaws resulting from the adoption of the Replacement Policies:

- Rescinding the current *Asset Disposal Policy* (No. FN-011) and consolidating disposition of surplus assets, obsolete assets, and salvage assets into the proposed *Procurement and Asset Disposal Authority Policy*.
- Revising the *Fleet Planning and Acquisition Policy* (No. FN-014) by removing the reference to the “Real Property Contracting Authority and the Procurement and Contracting Employee Procedures” and replacing it with the “*Procurement and Asset Disposal Authority Policy, Delegation of Procurement Authority Policy*, and the *Procurement Policy Guidelines*”.
- Amending the *Greater Vancouver Regional District Officers and Delegation Bylaw No. 1208, 2014* by removing the reference to the “*Procurement and Real Property Contracting Authority Policy*” and replacing it with the “*Procurement and Asset Disposal Authority Policy and Real Estate Authority Policy*”, and updating section references in the bylaw to the *Local Government Act*.
- Amending the *Greater Vancouver Water District Officers and Delegation Bylaw No. 247, 2014* by removing the reference to the “*Procurement and Real Property Contracting Authority Policy*” and replacing it with the “*Procurement and Asset Disposal Authority Policy and Real Estate Authority Policy*”, and updating section references in the bylaw to the *Local Government Act*.
- Amending the *Greater Vancouver Sewerage and Drainage District Officers and Delegation Bylaw No. 284, 2014* by removing the reference to the “*Procurement and Real Property Contracting Authority Policy*” and replacing it with the “*Procurement and Asset Disposal Authority Policy and Real Estate Authority Policy*”, and updating section references in the bylaw to the *Local Government Act*.

ALTERNATIVES

1. That the MVRD/GVWD/GVS&DD/MVHC Boards:
 - a) adopt the *Procurement and Asset Disposal Authority Policy*, as presented in the report dated March 27, 2024, titled “Policy Update: Procurement and Real Property Contracting Authority Policies”, effective June 1, 2024;
 - b) adopt the *Real Estate Authority Policy*, as presented in the report dated March 27, 2024, titled “Policy Update: Procurement and Real Property Contracting Authority Policies”, effective June 1, 2024; and

That the MVRD Board:

- a) rescind the *Asset Disposal Policy* (No. FN-011) effective May 31, 2024;
- b) rescind the *Procurement and Real Property Contracting Authority Policy* (No. FN-006), effective May 31, 2024.
- c) revise the *Fleet Planning and Acquisition Policy* (No. FN-014), as presented in the report dated March 27, 2024, titled “Policy Update: Procurement and Real Property Contracting Authority Policies”, effective June 1, 2024;
- d) give first, second and third reading to *Metro Vancouver Regional District Officers and*

Delegation Amendment Bylaw No. 1375, 2024; and

- e) adopt *Metro Vancouver Regional District Officers and Delegation Amendment Bylaw No. 1375, 2024.*

That the GVWD Board:

- a) rescind the *Procurement and Real Property Contracting Authority Policy* (No. FN-006), effective May 31, 2024.
b) give first, second and third reading to *Greater Vancouver Water District Officers and Delegation Amendment Bylaw No. 263, 2024; and*
c) adopt *Greater Vancouver Water District Officers and Delegation Amendment Bylaw No. 263, 2024.*

That the GVS&DD Board:

- a) rescind the *Procurement and Real Property Contracting Authority Policy* (No. FN-006), effective May 31, 2024.
b) give first, second and third reading to *Greater Vancouver Sewerage and Drainage District Officers and Delegation Amendment Bylaw No. 373, 2024; and*
c) adopt *Greater Vancouver Sewerage and Drainage District Officers and Delegation Amendment Bylaw No. 373, 2024.*

That the MVHC Board:

- a) resolve that, the Consent Resolution made with effect on September 1, 2014 regarding *Procurement and Real Property Contracting Authority*, ceases to have any force and effect on May 31, 2024;
b) authorizes the Chief Administrative Officer of the Metro Vancouver Regional District to:
i. establish policies and procedures for such matters as may be necessary or desirable for the efficient management, administration and operation of the Metro Vancouver Housing Corporation, including the Corporate Policies;
ii. negotiate and make, enter into, execute and deliver any contracts, agreements, and other documents and instruments to which the *Procurement and Asset Disposal Authority Policy*, or the *Real Estate Authority Policy*, does not apply; and
iii. authorize other appointed officers and employees of the Metro Vancouver Regional District to negotiate and make, enter into, execute and deliver any contracts, agreements, and other documents and instruments to which the *Procurement and Asset Disposal Authority Policy*, or the *Real Estate Authority Policy*, does not apply.
2. That the Finance Committee refer the proposed *Procurement and Asset Disposal Authority Policy* and *Real Estate Authority Policy*, as presented in the report dated March 27, 2024, titled "Policy Update: Procurement and Real Property Contracting Authority Policies", back to staff to incorporate feedback from the Finance Committee.

FINANCIAL IMPLICATIONS

There are no financial implications related to the proposed replacement of the Existing Policy with the Replacement Policies. All Procurement and Real Estate transactions require evidence of the Board(s) approved budget for all capital and operating expenditures. Contract commitments and real estate

transactions are only executed once approval is provided by the Board(s) or the appropriate staff with delegated authority.

CONCLUSION

As part of continuous improvement efforts and best practice, staff have undertaken a review of the existing *Procurement and Real Property Contracting Authority Policy* (No. FN-006) and are recommending replacement of the Existing Policy for Board consideration. The Existing Policy was created in 2014 and has remained substantially unchanged except for a minor revision in 2017. The Replacement Policies have been developed after conducting internal and external research and the benefits include better overall oversight related to procurement and real estate activity and alignment with the Board Strategic Priorities. Staff are recommending that the Board(s) approve the recommendation outlined in Alternative #1.

ATTACHMENTS

1. Existing *Procurement and Real Property Contracting Authority Policy* (No. FN-006)
2. Existing *Asset Disposal Policy* (No. FN-011)
3. ~~Consent Resolution of the Directors of Metro Vancouver Housing Corporation effective as of September 1, 2014~~
4. Draft *Procurement and Asset Disposal Authority Policy*
5. Draft *Real Estate Authority Policy*
6. *Metro Vancouver Regional District Officers and Delegation Amendment Bylaw No. 1375, 2024*
7. ~~*Greater Vancouver Water District Officers and Delegation Amendment Bylaw No. 263, 2024*~~
8. ~~*Greater Vancouver Sewerage and Drainage District Officers and Delegation Amendment Bylaw No. 373, 2014*~~
9. Draft revisions to *Fleet Planning and Acquisition Policy* (No. FN-014)

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PROCUREMENT AND REAL PROPERTY CONTRACTING AUTHORITY

Effective Date: September 1, 2014 (Revised July 28, 2017)

Approved By: MVRD/MVHC/GVWD/GVS&DD Boards

Policy No. FN-006

PURPOSE

1.1 This Policy outlines:

- a) The authorization and competition requirements for procuring Goods, Services and Construction (as these terms are defined in this Policy) (“**Procurement Transactions**”); and
- b) The authorization and general requirements for the Acquisition, Disposition, use or management of Real Property (as these terms are defined in this policy) (“**Real Property Transactions**”)

(together, “**Transactions**”),

for the Metro Vancouver Regional District, the Greater Vancouver Water District, the Greater Vancouver Sewerage and Drainage District, and the Metro Vancouver Housing Corporation (collectively, “**Metro Vancouver**”).

DELEGATION OF AUTHORITY

2.1 The following instruments and this Policy provide the delegated authority for staff to enter into Transactions for or on behalf of Metro Vancouver:

Metro Vancouver Entity	Delegation Instrument
Metro Vancouver Regional District	<i>Bylaw 1208, 2014 Officers and Delegation Bylaw</i>
Greater Vancouver Water District	<i>Bylaw 247, 2014 Officers and Delegation Bylaw</i>
Greater Vancouver Sewerage and Drainage District	<i>Bylaw 284, 2014 Officers and Delegation Bylaw</i>
Metro Vancouver Housing Corporation	By Resolution

2.2 Nothing in this Policy delegates authority to non-Metro Vancouver staff to enter into Transactions for or on behalf of Metro Vancouver.

DEFINITIONS

3.1 The following terms used in the Policy are defined as:

- a) “**Acquire**” or “**Acquisition**” means to obtain by any method, accept, receive, purchase, be vested with, lease, take possession, control or occupation of, and agree to do any of those

BOARD POLICY

things, but excludes expropriation, except by agreement under section 3 of the *Expropriation Act*;

- b) **“Board”** means the Board of the Metro Vancouver entity undertaking the Transaction;
- c) **“Change Order”** means a Construction Contract amendment changing the works or services provided under the Construction Contract, including but not limited to specification, schedule, or price;
- d) **“Construction”** means the building, erection, installation, repair, renovation, restoration and demolition of all things including but not limited to: buildings, pipes, roads, reservoirs, tanks, land filling, excavation, landscaping, water and sewerage treatment facilities, pump stations, dams, intake and outfall facilities, dredging, and the related supply of Goods, Services and leased equipment;
- e) **“Construction Contract”** means a Contract for Construction, and includes Contracts for the related supply of Goods, Services and leased equipment;
- f) **“Contract”** means a contract for the supply (by way of sale, conditional sale, lease or otherwise) of Goods, Services or Construction, including a purchase order or other document evidencing the obligation, and any Contract Amendments;
- g) **“Contract Amendment”** means any change to a term, condition or other Contract provision, including a Change Order;
- h) **“Cumulative Value”** means the Original Value and the value of all Contract Amendments, excluding taxes;
- i) **“Dispose”** or **“Disposition”** means to transfer by any method including assign, give, sell, grant, charge, convey, lease, divest, dedicate, release, exchange, alienate or agree to do any of those things;
- j) **“First Nation Entity”** means any business arrangement in which First Nation individuals and/or First Nation communities have an ownership or other interest, and includes a business entity identified by a First Nation community as its designated business partner;
- k) **“First Nation Lands”** means Indian Reserves or Treaty Lands;
- l) **“First Nation Traditional Territory”** means the geographic area identified by a First Nation to be the area of land which they and / or their ancestors traditionally occupied or used;

BOARD POLICY

- m) **“Goods”** means material, supplies, equipment and other property, excluding Real Property, whether or not existing at the time of the Contract;
- n) **“Long Term Real Property Transaction”** means a Real Property Transaction of a permanent or long term nature, including but not limited to:
 - i. the Acquisition or Disposition of a fee simple interest,
 - ii. the Acquisition or Disposition of a permit, licence, lease or similar interest with a term longer than 5 years, and
 - iii. the Disposition of a statutory right of way, easement, covenant or similar interest;
- o) **“Multi-Phase Contract”** means a Construction Contract where consultancy Services are provided in phases, with progression (if any) from the initial to further phases being determined by project requirements;
- p) **“Original Value”** means the contract price or fees for services as at the effective date of the Contract, excluding taxes;
- q) **“Procurement Contracting Authority”** has the meaning set out in sections 5.1 and 6.1;
- r) **“Real Property”** means land with or without improvements affixed to the land, or any interest in land, including any right, title or estate in it of any tenure;
- s) **“Real Property Contract”** means a contract, agreement or instrument to Acquire or Dispose of Real Property or otherwise related to Real Property, including but not limited to any permit, licence, easement, statutory right of way, lease, covenant or any other document required to complete a Real Property Transaction;
- t) **“Services”** means services that are not provided by Metro Vancouver employees; and
- u) **“Standard Real Property Transaction”** means a Real Property Transaction of a routine or standard nature, including but not limited to:
 - i. a residential tenancy agreement,
 - ii. the Acquisition or Disposition of a permit, licence, lease or similar interest with a term no longer than 5 years including renewals,
 - iii. the Acquisition of a statutory right of way, easement, covenant or similar interest, and
- v) an application, instrument or arrangement entered into in anticipation or support of a Real Property Transaction, including but not limited to an application or agreement for rezoning, official community plan amendment, subdivision approval, and a demolition, building or other development permit.

MANDATORY CONDITIONS FOR TRANSACTIONS

4.1 Staff are not authorized to enter into any Transactions unless the following conditions (the “**Mandatory Conditions**”) are met:

- a) The Transaction is within the scope of the Board approved budget (the “**Approved Budget**”);
- b) The Transaction has been authorized by a staff member having authority to initiate the Transaction (“**Spending Authority**”); and
- c) The staff member entering into the Transaction has authority to execute the relevant document (“**Contracting Authority**”). This Policy sets out the levels of Contracting Authority.

PROCUREMENT CONTRACTING AUTHORITY

5.1 Subject to the terms of this Policy, any statutory requirements, and Metro Vancouver bylaws, the following positions have authority (“**Procurement Contracting Authority**”) to execute Contracts for Procurement Transactions up to the identified Cumulative Value limits:

- a) Housing Dispatchers (Metro Vancouver Housing Corporation only): \$10,000;
- b) Dispatchers (Lake City Operation Centre): the greater of \$50,000 and 3 months’ duration;
- c) Purchasing staff with buying authority: \$250,000;
- d) Division Manager of Purchasing and Risk Management:
 - i. \$250,000, and
 - ii. \$500,000 with General Manager approval;
- e) Chief Financial Officer: \$2,000,000 with General Manager and Division Manager of Purchasing and Risk Management approval;
- f) Chief Administrative Officer/Commissioner: \$5,000,000 with Chief Financial Officer, General Manager and Division Manager of Purchasing and Risk Management approval; and
- g) As directed by the Board: over \$5,000,000.

5.2 For Procurement Contracting Authority for Multi-Phase Contracts, the Contract value is the anticipated total value of the Services to be provided over all phases, excluding taxes.

5.3 Splitting Procurement Transactions into multiple increments to circumvent any relevant policy, Spending Authority or Procurement Contracting Authority limit is not permitted.

CHANGE ORDERS FOR CONSTRUCTION CONTRACTS

6.1 The following positions have Procurement Contracting Authority (separate from and additional to the limits set out above) to execute Change Orders up to the identified limits, excluding taxes:

BOARD POLICY

- a) Senior Engineer: \$25,000 per Change Order, cumulative value not to exceed 5% of the Original Value of the Construction Contract;
- b) Senior Engineer: \$100,000 per Change Order with Director approval, cumulative value not to exceed 5% of the Original Value of the Construction Contract;
- c) Director: \$250,000 per Change Order with Division Manager of Purchasing and Risk Management approval, cumulative value not to exceed 10% of the Original Value of the Construction Contract;
- d) General Manager: \$500,000 per Change Order with Division Manager of Purchasing and Risk Management approval, cumulative value not to exceed 10% of the Original Value of the Construction Contract; and
- e) Chief Administrative Officer/Commissioner: over \$500,000 per Change Order with Chief Financial Officer, General Manager and Division Manager of Purchasing and Risk Management approval.

6.2 When calculating the cumulative value of Change Orders, the value is calculated by reference to all Change Orders issued under the relevant Construction Contract.

6.3 Change Orders must meet the Mandatory Conditions set out in section 4, including the requirement that the Change Order is within the Approved Budget.

COMPETITION REQUIREMENTS FOR PROCUREMENT TRANSACTIONS

7.1 Metro Vancouver's primary goal in the procurement process is to attain best value, using processes that are competitive, open, transparent, non-discriminatory and support Metro Vancouver's commitment to sustainability.

7.2 The type of competition required for Metro Vancouver procurement is based on the dollar value and nature of the specific Procurement Transaction, ensuring the cost and time associated with using a competitive process is proportionate to the benefit received. Competition requirements apply to the original procurement process and Contract award.

7.3 Contracts for Goods and Services arranged with the assistance of a third party, such as a broker or other intermediary, must be awarded using a process that is consistent with this Policy.

7.4 For these competition requirements, the value of Multi-Phase Contracts is calculated based on the anticipated total value of the Services to be provided over all phases, excluding taxes.

7.5 Sole Source Exception

A Contract may be sole sourced without a competitive process (a “Sole Source Exception”) when:

- a) The Original Value is \$5,000 or less; or
- b) Goods, Services or Construction are urgently required and delay would be injurious to the public interest; or
- c) Only one party is available and capable of performing the Contract; or
- d) The Contract is within the authority of the Division Manager or Category Manager, Purchasing and Risk Management who has determined a competitive process would not be practical; or
- e) The Contract is within the authority of the Chief Administrative Officer/Commissioner or the Chief Financial Officer, who has determined a competitive process would not be practical; or
- f) The Contract is for archaeological work pursuant to section 7.6(b)(i) and the Chief Administrative Officer/Commissioner and the Chief Financial Officer has determined that a competitive process for such work is not appropriate; or
- g) The Board of Directors has authorized a sole source Contract at their discretion.

The Procurement Contracting Authority may, at its discretion, seek General Manager approval for the Sole Source Exception.

7.6 First Nation Entities Participation

- a) Where a Metro Vancouver project or activity is located on or in proximity to First Nation Lands, the procurement process may include one or more of the following:
 - i. Unbundle large procurement competitions so that First Nation Entities can participate in the procurement process; or
 - ii. Include provisions in the procurement documents that give preference to a First Nation Entity, or a proponent that sub-contracts a portion of the work to a First Nation Entity.
- b) Where a Metro Vancouver project or activity is located within a First Nation’s Traditional Territory and archaeological work is required, the procurement process will seek the First Nation’s input and recommendations for qualified archaeological consultants:
 - i. If only one recommendation is received, Metro Vancouver may unbundle all or a portion of the archaeological work and may sole source, under the provisions of section 7.5, the unbundled portion to the recommended consultant; or
 - ii. If more than one recommendation is received, Metro Vancouver may unbundle all or a portion of the archaeological work and undertake a procurement competition in accordance with this Policy.

7.7 Discretionary Competitive Process

Contracts for Procurement Transactions in the following dollar value ranges:

- a) Goods and Services: Original Value \$5,000 to \$75,000; and
- b) Construction: Original Value \$5,000 to \$200,000,

must be awarded using a process that is appropriate to the value and complexity of the Procurement Transaction. Procurement staff may seek bids on an invitation-only basis. Under this process, procurement staff should seek a minimum of three bids.

7.8 Formal Competitive Process

For Contracts for Procurement Transactions in the following dollar value ranges:

- a) Goods and Services: Original Value \$75,000 or greater; and
- b) Construction: Original Value \$200,000 or greater, procurement staff must endeavour to use a formal, public procurement process that is competitive, open, transparent, non-discriminatory and supports Metro Vancouver's commitment to sustainability.

REAL PROPERTY CONTRACTING AUTHORITY

8.1 Subject to the terms of this Policy, statutory requirements, and Metro Vancouver bylaws, the following positions have authority ("**Real Property Contracting Authority**") to execute Real Property Contracts for Real Property Transactions up to the identified limits, excluding taxes:

a) **Standard Real Property Transactions:**

- i. Designated housing staff (Metro Vancouver Housing Corporation only): residential tenancies;
- ii. Property Division Manager:
 - (1) \$250,000 with Director approval, and
 - (2) \$500,000 with General Manager approval;
- iii. Chief Administrative Officer/Commissioner: \$2,000,000 with Chief Financial Officer, General Manager and Property Division Manager approval; and
- iv. As directed by the Board: over \$2,000,000.

b) **Long Term Real Property Transactions:**

- i. Chief Administrative Officer/Commissioner: \$500,000 with General Manager and Property Division Director approval, excluding any Disposition of a fee simple interest; and
- ii. As directed by the Board: over \$500,000, and any Disposition of a fee simple interest.

ASSET DISPOSAL

Effective Date: April 29, 2016

Approved By: GVRD Board

Policy No. FN-011

PURPOSE

To provide direction regarding the disposal of surplus assets, assets that have reached the end of their economic life and salvage assets owned by Metro Vancouver.

Metro Vancouver's *Asset Disposal Policy* supports the following broad objectives:

- Efficient and effective disposal of assets;
- Highest economic value to Metro Vancouver;
- Non-discriminatory and transparent disposal process; and
- Minimum environmental impacts.

DEFINITIONS

"Assets" are defined as any items of economic value that could be converted to cash;

"Economic life" means the period of time during which assets may be put towards profitable use in a business. Economic life is usually shorter than physical life because assets may become obsolete or too costly to maintain before they are worn out;

"Employee" means an exempt or union employee of Metro Vancouver including an Officer;

"Salvage Assets" are defined as any recovered or reclaimed items of economic value that could be converted to cash. Salvage materials include, scrap metal from steel pipe, stainless steel, insulated wire, copper, brass, aluminium, and tin, which are considered to have economic value to Metro Vancouver; and

"Surplus Assets" are defined as tangible assets that have economic value that could be converted to cash but are no longer needed and cannot be used in any area within Metro Vancouver. These assets can include office furniture and equipment, computers, audio-visual equipment, marine and industrial equipment, lab equipment, construction tools and equipment, and corporate vehicles.

POLICY

This Policy is intended to provide clear direction on the disposition of Metro Vancouver surplus assets, assets that have reached the end of their economic life and salvage assets, but excludes the disposition of electronic equipment covered under the *Electronic Equipment Disposition Policy*. The disposition of assets shall support Metro Vancouver's commitment to sustainability by following a

BOARD POLICY

process that ensures maximum economic value for the Corporation, is transparent and non-discriminatory and considers environmental impacts.

The disposal of assets will be coordinated by the Purchasing Division within the Financial Services Department.

1. Surplus Assets

- a) The General Manager or Senior Director within the Department responsible for the assets shall determine and declare when assets are deemed surplus (refer to the Appendix for type of assets and responsible Department).
- b) The assets must first be offered at no charge to other potential users within Metro Vancouver.
- c) If the assets cannot be used by another user within Metro Vancouver, they are deemed surplus and must be disposed of through the Purchasing Division by way of public auction, trade-in, public tender, negotiated sale or other means that maximizes economic value for Metro Vancouver.
- d) In no event shall Surplus Assets be directly sold to an employee by Metro Vancouver.
- e) In the event of sections (c) and (d) above, proof of authorization must be retained for up to two years from the date of disposal.
- f) In no event shall Surplus Assets be offered to anyone outside Metro Vancouver (including any non-profit organization) unless in accordance with Section 4.
- g) In the event Surplus Assets cannot be sold or traded for use, they shall be recycled in a manner that minimizes environmental impacts.

2. Assets at End of Economic Life

- a) The General Manager or Senior Director within the Department responsible for the assets shall determine and declare when the assets are at the end of their economic life (refer to the Appendix for the type of assets and responsible Department).
- b) Assets that have reached the end of their economic life must be disposed of through the Purchasing Division by way of public auction, trade-in, public tender, negotiated sale or other means that maximizes economic value for Metro Vancouver.
- c) In no event shall assets at the end of their economic life be directly sold to an employee by Metro Vancouver.

BOARD POLICY

- d) In the event of sections (b) and (c) above, proof of authorization must be retained for up to two years from the date of disposal.
- e) In no event shall assets at the end of their economic life be offered to anyone outside Metro Vancouver (including any non-profit organization) unless in accordance with Section 4.
- f) In the event assets at the end of their economic life cannot be sold or traded for use, they shall be recycled in a manner that minimizes environmental impacts.

3. Salvage Assets

- a) The General Manager, Senior Director or designated staff within the Department responsible for the assets shall determine and declare when the assets are considered salvage (refer to the Appendix for the type of assets and responsible Department).
- b) A list of salvage assets shall be documented in the Salvage Asset Tracking Sheet.
- c) A copy of the Salvage Asset Tracking Sheet shall be provided to Financial Services on a monthly basis by email or inter-office mail with supporting documentation, as appropriate. Original copies of the document are to be maintained in the files on site for a year.
- d) The Purchasing Division is responsible for the disposal of salvage assets, which can only be completed through an approved recycling dealer.

4. Donation of Assets

- a) Only surplus assets or assets at the end of their economic life are eligible for donation.
- b) The donation of surplus assets or assets at the end of their economic life must meet the following criteria:
 - i) The donation must provide a clear and positive community benefit to the Metro Vancouver region;
 - ii) The donation must offer specific benefits to Metro Vancouver, or its members;
 - iii) The entity that is receiving the donation must have a mandate with a community objective and purpose that is consistent with Metro Vancouver's vision, mission and roles; and
 - iv) The entity receiving the donation must be a registered charitable organization or not-for-profit entity.
- c) Surplus assets or assets at the end of their economic life that are to be donated must receive prior approval from the Chief Administrative Officer (CAO), with a recommendation from the Chief Financial Officer (CFO), and the Division Manager of Purchasing and Risk Management.

BOARD POLICY

- d) When more than one non-profit organization requests the donation of surplus assets, organizations shall be considered equally using the criteria as outlined in section 4(b) above.
- e) The donation of surplus assets which have an original combined cost that exceeds \$100,000 requires Board approval.
- f) Proof of authorization by the Chief Administrative Officer (CAO) must be retained for up to two years from the date of donation.

5. Proceeds on Asset Disposal

- a) All proceeds in exchange of the disposed assets shall be remitted directly to Metro Vancouver Financial Services Department.
- b) Proceeds shall be in the form of cheque, electronic funds transfer, or if the transaction is less than \$5,000, a credit card may be used.

Related References

This Policy is to be followed in coordination with the following:

- [Real Property Contracting Authority Policy](#)
- [Procurement and Contracting Employee Procedures](#)
- [Spending Authority Policy](#)
- [Electronic Equipment Disposition Policy](#)

APPENDIX**Asset Category and Responsible Department Table**

The following table lists the type of assets and the subsequent Department that is responsible for determining whether assets are surplus, at the end of their economic life or salvage. It is intended to provide guidance and can be amended as required.

Asset	Responsible Department
Furniture and Office Equipment	Corporate Services (Building Operations)
Information Technology (IT) Equipment	Corporate Services (Information Technology)
Fleet and Marine Equipment	Financial Services (Fleet Services)
Safety Equipment	Corporate Services (Safety Security Emergency Management)
Industrial Equipment	User Department (Water, Liquid Waste, Solid Waste, Housing, Regional District)
Construction Tools and Equipment	User Department (Water, Liquid Waste, Solid Waste, Housing, Regional District)
Lab Equipment	User Department (Water, Liquid Waste, Solid Waste, Housing, Regional District)

PROCUREMENT AND ASSET DISPOSAL AUTHORITY POLICY

Effective Date: June 1, 2024

Approved By: MVRD/GVWD/GVS&DD/MVHC Boards

Policy No. FN-031

PURPOSE

1.1 This Policy:

- a) applies to the Metro Vancouver Regional District (“**MVRD**”), the Greater Vancouver Water District (“**GVWD**”), the Greater Vancouver Sewerage and Drainage District (“**GVS&DD**”), and the Metro Vancouver Housing Corporation (“**MVHC**”) in the performance of their respective duties and responsibilities when engaging in the procurement of Goods, Services and Construction;
- b) outlines the requirements for the procurement of Goods, Services and Construction, as well as the Disposition of Surplus Assets, Obsolete Assets, and Salvage Assets, to achieve overall Best Value for Metro Vancouver; and
- c) outlines certain fundamental principles that Metro Vancouver considers applicable to public procurement.

POLICY GOALS

2.1 The goals of this Policy are as follows:

- a) to achieve an open, transparent, non-discriminatory and competitive process for the procurement of Goods, Services and Construction that provides Best Value for Metro Vancouver and applies leading practices, risk mitigation strategies and strong financial controls to the procurement process;
- b) to ensure compliance with Metro Vancouver’s bylaws, its Board and Corporate Policies, the interprovincial, national and international trade agreements that are binding on Metro Vancouver, and all other provincial and federal laws and regulations that apply to the procurement of Goods, Services and Construction;
- c) to achieve a transparent, non-discriminatory, efficient and effective process for the Disposition of Surplus Assets, Obsolete Assets, and Salvage Assets that provides Best Value for Metro Vancouver and minimizes environmental impacts; and
- d) to optimize Best Value by ensuring that Metro Vancouver utilizes the Procurement Division of the Procurement and Real Estate Services Department (“**PRS**”) to conduct all

BOARD POLICY

Calls and to oversee the Disposition of Surplus Assets, Obsolete Assets, and Salvage Assets.

DELEGATION OF AUTHORITY

3.1 The following instruments, this Policy and the *Corporate Procurement Policy* provide the delegated authority for Metro Vancouver staff to enter into Contracts for or on behalf of Metro Vancouver:

Metro Vancouver Entity	Delegation Instrument
MVRD	<i>Officers and Delegation Bylaw No. 1208, 2014</i>
GVWD	<i>Officers and Delegation Bylaw No. 247, 2014</i>
GVS&DD	<i>Officers and Delegation Bylaw No. 284, 2014</i>
MVHC	By Resolution

3.2 Nothing in this Policy delegates authority to non-Metro Vancouver staff to approve, Award, execute or enter into Contracts for or on behalf of Metro Vancouver.

POLICY ADMINISTRATION

4.1 The Procurement Division of PRS, overseen by the Director, Procurement, is the owner and administrator of this Policy. Except where separately authorized by a Department Head, the Corporate Solicitor, the CAO, or the Board, all procurement of Goods, Services and Construction and all Dispositions of Surplus Assets, Obsolete Assets, and Salvage Assets are to be administered by the Procurement Division of PRS.

TRANSACTIONS NOT SUBJECT TO THIS POLICY

5.1 The following Contracts and types of transactions are not covered by this Policy (but may be governed by other Board or Corporate Policies or Metro Vancouver bylaws):

- a) the purchase of regulated tariffed services (e.g. electricity, transmission portion of natural gas, cable, tariff portion of non-wireless telecommunications services);
- b) financial grants from other governmental authorities to Metro Vancouver;
- c) financial grants from Metro Vancouver to non-profit organizations as authorized by the Board;
- d) tax rebates;
- e) the procurement of Goods or Services from other governmental authorities;

BOARD POLICY

- f) Real Estate transactions as governed by the *Real Estate Authority Policy* (No. FN-032) and the *Delegation of Real Estate Authority Policy* (No. FN-033), including the acquisition, disposition, use or management of Real Estate;
- g) sponsorships as governed by the *Sponsorship Policy* (No. FN-008); and
- h) the retention of external legal counsel and related experts (such as expert witnesses) as governed by the *Legal Services Policy* (No. GV-029).

DEFINITIONS AND INTERPRETATION

6.1 Capitalized terms used in this Policy are defined as follows:

“Administrative Amendment” means any change to a Contract that is not a Contract Amendment or a Change Order;

“Approved Budget” means the authorized budget (including any contingency amounts) for the capital project or operating program under which the applicable Goods, Services or Construction will be procured pursuant to this Policy and the *Corporate Procurement Policy*, that is approved for expenditure in accordance with the Board-approved budget;

“Assets” means any items which are considered to have Economic Value to Metro Vancouver, but excluding Real Estate;

“Award” or **“Awarded”** means the decision by Metro Vancouver to enter into a Contract in accordance with this Policy;

“Best Value” means the optimal combination of Technical Value, Economic Value, Environmental Value and Social Value, as determined in accordance with the specific criteria and weighting for each criterion established by Metro Vancouver for the applicable procurement. For Dispositions of Assets, “Best Value” means the optimal combination of Economic Value and Environmental Value;

“Bid” means, in response to a Call, either: (i) a legally binding tender or quotation which upon written acceptance by Metro Vancouver, automatically creates a Contract; (ii) a non-binding quotation or proposal which forms the basis of a negotiated Contract; or (iii) any non-binding pre-qualification submission, expression of interest, or request for information which may form the basis of a subsequent Call;

“Bidder” means any legal entity submitting a Bid in response to a Call;

“Board” means, collectively, the MVRD Board of Directors, the GVWD Board of Directors, the GVS&DD Board of Directors, and the MVHC Board of Directors, or any one of them, as the

BOARD POLICY

context requires. For the procurement of Goods, Services or Construction, “Board” means the Board of Directors of the Metro Vancouver entity undertaking the procurement;

“**Call**” means a request or invitation by Metro Vancouver for a Bid, including but not limited to requests for proposal, requests for expressions of interest, invitations to tender, invitations to quote, and invitations to offer;

“**CAO**” means the person appointed from time to time as the Chief Administrative Officer or Commissioner, as the context requires;

“**CFO**” means the person appointed from time to time as the Chief Financial Officer;

“**Change Order**” means any change to the scope, specifications, schedule or Total Price of a Construction Contract and in a manner consistent with the original intent of the Construction Contract;

“**Commitment Authority**” means the authority to Award a Contract, including an Administrative Amendment, Contract Amendment or Change Order, as the context requires, in accordance with this Policy and the *Corporate Procurement Policy* or as the applicable Board otherwise directs;

“**Construction**” means the building, erection, installation, repair, addition, renovation, protection, restoration, demolition, deconstruction, decommissioning, or removal of all things, including but not limited to buildings, improvements and other facilities, pipes, roads, reservoirs, tanks, land filling, excavation, landscaping, water and sewerage treatment facilities, pump stations, dams, intake and outfall facilities, dredging, and the related supply of Goods, Services and/or leased equipment;

“**Construction Contract**” means a contract for Construction;

“**Contract**” means a Construction Contract or a Contract for Goods and Services, as the context requires. For greater certainty, a Contract includes documents that create or modify, or may create or modify, legal rights and obligations of the parties to the Contract, including but not limited to any: (i) purchase order; (ii) work order; (iii) Change Order; (iv) memorandum of understanding, letter of understanding, letter of intent, or similar; (v) standing offer; (vi) supply arrangement; (vii) notice or other communication to a prospective supplier prior to a Contract, including a notice to award, conditional notice to award, notice or permission to proceed or start work prior to Award or Contract; (viii) assignment or consent to assignment of a Contract; (ix) security for performance of a Contract such as a letter of credit, bond, insurance, deposit, security interest, and other financial instruments; (x) Contract Amendment; or (xi) Administrative Amendment;

BOARD POLICY

“Contract Amendment” means any change to the scope, specifications, schedule or Total Price of a Contract for Goods and Services and in a manner consistent with the original intent of the Contract for Goods and Services;

“Contract for Goods and Services” means a contract for the supply (by way of sale, conditional sale, lease or otherwise) of Goods and/or Services;

“Contracting Authority” means the authority to execute and deliver a Contract, including an Administrative Amendment, Contract Amendment or Change Order, as the context requires, in accordance with this Policy and the *Corporate Procurement Policy* or as the applicable Board otherwise directs;

“Co-operative Procurement” means the procurement of Goods, Services or Construction in cooperation with other governmental authorities;

“Corporate Procurement Policy” means the *Delegation of Procurement Authority Policy* (No. FN-034) as amended or replaced by the CAO from time to time;

“Corporate Solicitor” means the person appointed from time to time as the Corporate Solicitor;

“Department Head” means the following Metro Vancouver officials, as the context requires: (i) a General Manager; (ii) a Deputy CAO; or (iii) a Deputy General Manager;

“Deputy CAO” means the person(s) appointed from time to time as the Deputy Chief Administrative Officer;

“Deputy General Manager” means the person appointed from time to time as the Deputy General Manager of the applicable Metro Vancouver department;

“Direct Award” or **“Direct Awarded”** means the Award of a Contract without issuing a Call;

“Director, Procurement” means the person appointed from time to time as the Director, Procurement;

“Dispose” or **“Disposition”** means to transfer by any method, including to assign, give, sell, grant, charge, convey, lease, divest, dedicate, release, exchange, or alienate, and to agree to do any of those things;

“Economic Life” means the period of time during which Assets may be put towards profitable use in a business, which period is generally shorter than physical life as Assets may become obsolete or too costly to maintain before they are worn out;

BOARD POLICY

“Economic Value” means the financial costs and benefits to Metro Vancouver of Goods, Services and Construction during their acquisition, use and end-of-life phases (i.e. lifecycle costs) including factors such as transportation emissions, training, economic development impacts, energy consumption, disposal and other related costs. For Dispositions of Assets, “Economic Value” means the ability to convert an Asset into cash;

“Environmental Value” means the ability to protect and enhance the climate, ecology and natural resources for future generations through approaches that reduce carbon dependency, enhance energy resilience, conserve energy and resources, and reduce waste and toxins;

“First Nation Entity” means any business arrangement in which First Nation individuals and/or First Nation communities have an ownership or other interest, and includes a business entity identified by a First Nation community as its designated business partner;

“First Nation Lands” means Indian Reserves or Treaty Lands;

“First Nation Traditional Territory” means the geographic area identified by a First Nation to be the area of land which they and/or their ancestors traditionally occupied or used;

“General Manager” means a member of the Metro Vancouver Corporate Planning Committee (CPC);

“General Manager, PRS” means the person appointed from time to time as the General Manager, PRS;

“Goods” means material, supplies, equipment and other tangible or intangible property, whether or not existing at the time of the Contract, but excluding Real Estate;

“GVS&DD” has the meaning set out in Section 1.1(a);

“GVWD” has the meaning set out in Section 1.1(a);

“Mandatory Conditions” has the meaning set out in Section 7.1;

“Maximum Contract Term” means the maximum term of a Contract (including all options to extend or rights of renewal) as prescribed by this Policy;

“Metro Vancouver” means, collectively, MVRD, GVWD, GVS&DD, and MVHC, or any one of them, as the context requires;

BOARD POLICY

“Multi-Phase Contract” means a Construction Contract where Services are provided in phases, with progression (if any) from the initial to further phases being determined by project requirements;

“MVHC” has the meaning set out in Section 1.1(a);

“MVRD” has the meaning set out in Section 1.1(a);

“Obsolete Assets” means tangible Assets which are at the end of their Economic Life and cannot be used by Metro Vancouver;

“PRS” has the meaning set out in Section 2.1(d);

“Real Estate” means land with or without improvements affixed to the land, any interest in land, air, or water (including any right, title or estate in it of any tenure), or any right to occupy or use land, air, or water;

“Revenue-Generating Contract” means any Contract which requires or contemplates revenues derived from the Contract to be paid to Metro Vancouver;

“Salvage Assets” means any recovered or reclaimed Assets, which may include but are not limited to scrap metal from steel pipe, stainless steel, insulated wire, copper, brass, aluminum, and tin;

“Services” means services that are not provided or performed by Metro Vancouver staff;

“Social Value” means the ability to cultivate and sustain vibrant, creative, safe, affordable and caring communities for the wide diversity of individuals and families to live in, work in and visit the Metro Vancouver region and beyond;

“Solicitation” means the process of communicating a Call to prospective Bidders;

“Surplus Assets” means tangible Assets which are no longer needed and cannot be used by Metro Vancouver, which may include but are not limited to office furniture and equipment, computers, audio-visual equipment, marine and industrial equipment, lab equipment, Construction tools and equipment, and corporate vehicles;

“Technical Value” means the ability to meet all business requirements, including but not limited to specifications, delivery model, timelines, personnel, Contract terms and conditions, user expectations, Goods and Services requirements, and transition requirements;

BOARD POLICY

“Total Price” means the total price payable for all Goods, Services and/or Construction under a Contract over the entire term of the Contract, as of the effective date of the Contract, excluding sales or other taxes payable, but which may include, at the discretion of the applicable Metro Vancouver staff member(s) having Commitment Authority, (i) the value of options to purchase additional Goods, Services and/or Construction during the term, and (ii) the value of Goods, Services and/or Construction for any renewed optional Contract term. For Revenue-Generating Contracts, “Total Price” means the anticipated gross revenue to be received by Metro Vancouver over the entire term of the Contract. For Multi-Phase Contracts, “Total Price” means the anticipated total price payable for the Services to be provided over all phases, excluding sales or other taxes payable. For Dispositions of Assets, “Total Price” means the total price originally paid by Metro Vancouver for the Asset; and

“Unsolicited Proposals” means proposals received by Metro Vancouver independently of a Call and which are typically submitted by third parties wishing to sell certain Goods, Services or Construction to Metro Vancouver.

- 6.2** All references in this Policy to an employee, official, officer, or other representative of Metro Vancouver are deemed to include any designate, deputy, or anyone else authorized in writing by such employee, official, officer, or other representative (or by Board resolution) to act in that person’s position. For purposes of this Policy, any supervisor of an employee, official, officer, or other representative of Metro Vancouver is deemed to have the same authority as that person’s position.
- 6.3** Where the title or name of any position, division, or department is changed following the adoption of this Policy as a result of a reorganization of Metro Vancouver’s functions or for any other reason, the CAO will have the authority to amend this Policy to reflect such change, provided that the Board is duly informed within a reasonable time of any such amendment.

MANDATORY CONDITIONS FOR COMPLETING A PROCUREMENT

- 7.1** Metro Vancouver staff are not authorized to procure any Goods, Services or Construction under any Contract, including Contract Amendments and Change Orders, for or on behalf of Metro Vancouver unless the following conditions are satisfied (the **“Mandatory Conditions”**):
- a) Approved Budget is in place for the procurement;
 - b) the procurement has been authorized by the Board or the Metro Vancouver staff member(s) having Commitment Authority and Contracting Authority for the applicable Contract; and
 - c) the procurement is required to support the short-term or long-term plans, priorities or ongoing operations of Metro Vancouver as set out in the Board Strategic Plan.

COMPETITION AND COMPETITIVE BIDDING

- 8.1** Except where expressly authorized by this Policy or the Board having jurisdiction, Metro Vancouver will procure all Goods, Services and Construction through an open, public, competitive Call.
- 8.2** The type of competition required for Metro Vancouver procurement is based on the dollar value and nature of the specific Goods, Services or Construction, ensuring the cost and time associated with using a competitive process is proportionate to the benefit received.
- 8.3** No public Call will be required for:
- a) Contracts for Goods and Services that are expected to have a Total Price of up to \$75,000; and
 - b) Construction Contracts that are expected to have a Total Price of up to \$200,000.

The Director, Procurement will endeavor to obtain a minimum of three (3) Bids for the foregoing Contracts.

- 8.4** The Director, Procurement will procure through a public Call:
- a) Contracts for Goods and Services that are expected to have a Total Price of greater than \$75,000; and
 - b) Construction Contracts that are expected to have a Total Price of greater than \$200,000.

Solicitation for the foregoing Contracts will be by way of posting the Call particulars through an electronic bidding system accessible to the general public. In addition to posting through the electronic means, local, regional, national, or international advertising may be carried out at the discretion of the Director, Procurement.

- 8.5** All Unsolicited Proposals will be under the purview of the Director, Procurement.

COMMITMENT AUTHORITY AND CONTRACTING AUTHORITY

- 9.1** Subject to the terms of this Policy, any statutory requirements, and Metro Vancouver bylaws, the CAO has Commitment Authority and Contracting Authority for:
- a) any Contract having a Total Price of up to \$10,000,000; and
 - b) any subsequent Contract Amendments or Change Orders which do not, when combined with the Total Price of the Contract, exceed the Approved Budget at the time of the Contract Amendment or Change Order.

BOARD POLICY

The CAO has the authority to further sub-delegate all such Commitment Authority and Contracting Authority to designated Metro Vancouver staff members as set out from time to time in the *Corporate Procurement Policy*.

9.2 For any Contract having a Total Price of greater than \$10,000,000:

- a) only the Board having jurisdiction has Commitment Authority;
- b) Contracting Authority will be determined by the applicable Board in its sole discretion; and
- c) subject to the terms of this Policy, any statutory requirements, and Metro Vancouver bylaws, the CAO has Commitment Authority and Contracting Authority for any subsequent Contract Amendments or Change Orders which do not, when combined with the Total Price of the Contract, exceed the Approved Budget at the time of the Contract Amendment or Change Order.

The CAO has the authority to further sub-delegate the Commitment Authority and Contracting Authority under Section 9.2(c) to designated Metro Vancouver staff members as set out from time to time in the *Corporate Procurement Policy*.

9.3 In addition, all Contract Amendments and Change Orders will be subject to:

- a) any Contract Amendment and Change Order approval process established by the CFO from time to time; and
- b) confirmation by the Director, Procurement that the Contract Amendment or Change Order falls within the existing scope of work of the Contract or applicable Call.

9.4 Procuring Goods, Services or Construction through a broker or other intermediary or splitting procurement transactions into multiple increments to circumvent this Policy, the *Corporate Procurement Policy*, or any Commitment Authority or Contracting Authority threshold is not permitted.

9.5 The CAO has Commitment Authority and Contracting Authority for any Administrative Amendment. The CAO has the authority to further sub-delegate such Commitment Authority and Contracting Authority to designated Metro Vancouver staff members as set out from time to time in the *Corporate Procurement Policy*.

GENERAL EXCEPTIONS TO COMPETITIVE BIDDING – PERMITTED DIRECT AWARD

BOARD POLICY

10.1 Notwithstanding Section 8.1, an open, public, competitive Call is not required and a Direct Award is permitted if:

- a) the Total Price of the Contract does not exceed \$25,000;
- b) the Director, Procurement and the applicable Department Head have determined that Goods, Services or Construction are urgently required and reasonably necessary to protect life/health (human, animal or plant) or property and any delay would be injurious to the public interest; provided that, in the event of any disagreement between the Director, Procurement and the applicable Department Head, the CAO will make the final determination;
- c) there is a single-supplier or other exigent circumstances which preclude an open, public, competitive Call and the following conditions are satisfied:
 - i. the Director, Procurement has determined that the contemplated Direct Award will provide Best Value for Metro Vancouver;
 - ii. in the case of a Contract for Goods and Services having a Total Price of greater than \$75,000 or a Construction Contract having a Total Price of greater than \$200,000, the Director, Procurement has publicly posted a Notice of Intent to Contract for ten (10) business days;
 - iii. if applicable, no complaints or concerns have been lodged in response to the Notice of Intent to Contract, or if any complaints or concerns have been communicated, the applicable Department Head and the Director, Procurement have reviewed the same and have authorized the Direct Award to proceed; and
 - iv. the Contract is Awarded and executed in accordance with the Commitment Authority and Contracting Authority requirements set out in this Policy or the *Corporate Procurement Policy*, as applicable;
- d) the Contract is for archaeological work pursuant to Section 11.2;
- e) subject to the Total Price threshold set out in Section 9.1(a), the CAO at their discretion has determined that the Direct Award would be in the public interest and has authorized the same;
- f) the Board at their discretion has determined that the Direct Award would be in the public interest and has authorized the same; or

- g) the Director, Procurement has authorized participation in a Co-operative Procurement process.

FIRST NATION ENTITIES PARTICIPATION

11.1 Where a Metro Vancouver project or activity is located on or in proximity to First Nation Lands, the procurement process may include one or more of the following:

- a) unbundle large procurement competitions so that First Nation Entities can participate in the procurement process; or
- b) include provisions in the procurement documents that give preference to a First Nation Entity, or a Bidder that sub-contracts a portion of the work to a First Nation Entity.

11.2 Where a Metro Vancouver project or activity is located within a First Nation Traditional Territory and archaeological work is required, the procurement process will seek the First Nation's input and recommendations for qualified archaeological consultants:

- a) if only one recommendation is received, Metro Vancouver may unbundle all or a portion of the archaeological work and may Direct Award, under the provisions of Section 10.1, the unbundled portion to the recommended consultant; or
- b) if more than one recommendation is received, Metro Vancouver may unbundle all or a portion of the archaeological work and undertake a procurement competition in accordance with this Policy.

SUSTAINABLE, SOCIAL AND ETHICAL PROCUREMENT

12.1 Sustainable, social and ethical procurement aligns with Metro Vancouver's long term priorities and commitments to sustainability, equity and regional prosperity as set out in the Board Strategic Plan. Metro Vancouver is committed to optimizing social and environmental benefits to the region in accordance with Best Value requirements throughout its procurement processes.

12.2 Metro Vancouver intends to recognize excellence, leadership and innovation in sustainability, environmental stewardship, equity and fair labour practices within the supplier selection process. Metro Vancouver will undertake to do so in accordance with any sustainable, social and/or ethical procurement policies and procedures that are in effect from time to time.

MAXIMUM CONTRACT TERM

13.1 Subject to any statutory requirements, the Director, Procurement in consultation with the applicable Department Head will set the Maximum Contract Term for a Call. For proposed Maximum Contract Terms of ten (10) years or greater, such terms will be subject to the approval of the CAO in addition to compliance with any statutory requirements.

CONTRACT EXTENSIONS

14.1 Contracts may only be extended past the Maximum Contract Term where one of the following conditions are met:

- a) the extension is a permitted Direct Award in accordance with Section 10.1; or
- b) there is (or is about to be) a new Call for the Goods, Services or Construction and the Director, Procurement and applicable Department Head have determined that an extension is required to provide time to complete the new Call. In this case, the applicable Department Head will have Commitment Authority and the Director, Procurement, or the CAO, will have Contracting Authority for the extension, provided that the extension:
 - i. is no longer than twelve (12) months;
 - ii. when combined with the Total Price of the Contact does not exceed \$20,000,000 or the Approved Budget; and
 - iii. is executed by the parties to the Contract before the expiry of the term.

CO-OPERATIVE PROCUREMENT

15.1 The Director, Procurement may participate in Co-operative Procurement.

15.2 The provisions of this Policy apply to the rights and obligations assumed by Metro Vancouver with respect to any Co-operative Procurement process.

CANCELLATION OF CALLS

16.1 The Director, Procurement will be authorized to cancel any Call where:

- a) there is a request by the applicable Department Head and responses are greater than the Approved Budget for the Award in respect of the Call;
- b) in the opinion of the Director, Procurement or the applicable Department Head:
 - i. a change in the scope of work, specifications or other authorizations is required and therefore a new Call should be issued; or
 - ii. the Goods, Services or Construction to be provided pursuant to the Call no longer meet Metro Vancouver's requirements; or
- c) in the opinion of the Director, Procurement the integrity of the Call process has been compromised.

ADMINISTRATION OF CONTRACTS

17.1 Following the exercise by the Procurement Division of PRS of its primary authority over a Call or a contemplated Direct Award, as applicable, and where a Contract results from the Call or contemplated Direct Award, the applicable Department Head will have the primary responsibility for the proper administration and enforcement of the Contract, subject to the *Legal Services Policy* (No. GV-029) and subject to the requirements for any Administrative Amendments, Contract Amendments and Change Orders as set out in this Policy and the *Corporate Procurement Policy*.

DISPOSITION OF ASSETS

18.1 The Disposition of Assets will be coordinated by the Procurement Division of PRS following a process that is transparent and non-discriminatory and which ensures Best Value for Metro Vancouver.

18.2 The Disposition of Surplus Assets will be carried out in accordance with the following:

- a) the Department Head responsible for the applicable Assets will determine and declare when such Assets are deemed to be Surplus Assets (refer to the Appendix for the type of Assets and responsible Department);
- b) the Surplus Assets must first be offered at no charge to other potential users within Metro Vancouver;
- c) if the Surplus Assets cannot be used by another user within Metro Vancouver, they will be Disposed of through the Procurement Division of PRS by way of public auction, trade-in, public tender, negotiated sale or other means that achieves Best Value for Metro Vancouver;
- d) in no event will Surplus Assets be directly sold to Metro Vancouver staff, provided that Metro Vancouver staff will be permitted to participate in any public auction process for such Surplus Assets;
- e) in no event will Surplus Assets be offered at no charge to any person outside of Metro Vancouver (including any non-profit organization) unless in accordance with Section 18.5;
- f) in the event Surplus Assets cannot be sold or traded for use, they will be recycled in a manner that minimizes environmental impacts; and
- g) proof of authorization for the Disposition of Surplus Assets must be retained for up to seven (7) years from the date of Disposition.

18.3 The Disposition of Obsolete Assets will be carried out in accordance with the following:

BOARD POLICY

- a) the Department Head responsible for the applicable Assets will determine and declare when such Assets are deemed to be Obsolete Assets (refer to the Appendix for the type of Assets and responsible Department);
- b) Obsolete Assets will be Disposed of through the Procurement Division of PRS by way of public auction, trade-in, public tender, negotiated sale or other means that achieves Best Value for Metro Vancouver;
- c) in no event will Obsolete Assets be directly sold to Metro Vancouver staff, provided that Metro Vancouver staff will be permitted to participate in any public auction process for such Obsolete Assets;
- d) in no event will Obsolete Assets be offered at no charge to any person outside of Metro Vancouver (including any non-profit organization) unless in accordance with Section 18.5;
- e) in the event Obsolete Assets cannot be sold or traded for use, they will be recycled in a manner that minimizes environmental impacts; and
- f) proof of authorization for the Disposition of Obsolete Assets must be retained for up to seven (7) years from the date of Disposition.

18.4 The Disposition of Salvage Assets will be carried out in accordance with the following:

- a) the Department Head responsible for the applicable Assets will determine and declare when such Assets are deemed to be Salvage Assets (refer to the Appendix for the type of Assets and responsible department);
- b) a list of Salvage Assets will be documented in a Salvage Asset Tracking Sheet;
- c) a copy of the Salvage Asset Tracking Sheet will be provided to the Financial Services Department on a monthly basis by email or inter-office mail with supporting documentation, as appropriate. Original copies of the document are to be maintained in the files on site for seven (7) years; and
- d) the Procurement Division of PRS will be responsible for the Disposition of Salvage Assets, which may only be completed through an approved recycling dealer.

18.5 The donation of Assets will be carried out in accordance with the following:

- a) only Surplus Assets or Obsolete Assets are eligible for donation;

- b) the donation must meet the following criteria:
 - i. it must provide a clear and positive community benefit to the Metro Vancouver region;
 - ii. it must offer specific benefits to Metro Vancouver or its members;
 - iii. the entity that is receiving the donation must have a mandate with a community objective and purpose that is consistent with Metro Vancouver's vision, mission and roles; and
 - iv. the entity receiving the donation must be a registered charitable organization or non-profit organization;
- c) Surplus Assets or Obsolete Assets that are to be donated must receive prior approval from the CAO, with a recommendation from the CFO, and the Director, Procurement;
- d) when more than one (1) registered charitable organization or non-profit organization requests the donation of Surplus Assets or Obsolete Assets, organizations will be considered equally using the criteria outlined in Section 18.5(b);
- e) the donation of Surplus Assets or Obsolete Assets which individually or in the aggregate have a Total Price of greater than \$100,000 requires Board approval; and
- f) proof of authorization for the donation of Surplus Assets or Obsolete Assets must be retained for up to seven (7) years from the date of donation.

18.6 All proceeds in exchange of the Disposed Assets will be remitted directly to the Financial Services Department. Proceeds must be in the form of cheque, electronic funds transfer, or if the transaction is less than \$5,000, a credit card may be used.

APPENDIX**Asset Category and Responsible Department Table**

The following table lists the type of Assets and subsequent department that is responsible for determining whether Assets are Surplus Assets, Obsolete Assets or Salvage Assets. It is intended to provide guidance and can be amended as required.

Asset	Responsible Department
Furniture and Office Equipment	Procurement and Real Estate Services (Facilities)
Information Technology (IT) Equipment	Corporate Services (Information Technology)
Fleet and Marine Equipment	Corporate Services (Fleet Services)
Safety Equipment	Corporate Services (Safety Security Emergency Management)
Industrial Equipment	User Department (Water, Liquid Waste, Solid Waste, Housing, Regional District)
Construction Tools and Equipment	User Department (Water, Liquid Waste, Solid Waste, Housing, Regional District)
Lab Equipment	User Department (Water, Liquid Waste, Solid Waste, Housing, Regional District)

REAL ESTATE AUTHORITY POLICY

Effective Date: June 1, 2024

Approved By: MVRD/GVWD/GVS&DD/MVHC Boards

Policy No. FN-032

PURPOSE

1.1 This Policy:

- a) applies to the Metro Vancouver Regional District (“**MVRD**”), the Greater Vancouver Water District (“**GVWD**”), the Greater Vancouver Sewerage and Drainage District (“**GVS&DD**”), and the Metro Vancouver Housing Corporation (“**MVHC**”) in the performance of their respective duties and responsibilities when entering into Real Estate Transactions; and
- b) outlines the authorization and general requirements for entering into Real Estate Transactions for or on behalf of Metro Vancouver.

DELEGATION OF AUTHORITY

2.1 The following instruments, this Policy and the *Corporate Real Estate Policy* provide the delegated authority for Metro Vancouver staff to enter into Real Estate Transactions for or on behalf of Metro Vancouver:

Metro Vancouver Entity	Delegation Instrument
MVRD	<i>Officers and Delegation Bylaw No. 1208, 2014</i>
GVWD	<i>Officers and Delegation Bylaw No. 247, 2014</i>
GVS&DD	<i>Officers and Delegation Bylaw No. 284, 2014</i>
MVHC	By Resolution

2.2 Nothing in this Policy delegates authority to non-Metro Vancouver staff to enter into Real Estate Transactions for or on behalf of Metro Vancouver.

POLICY ADMINISTRATION

3.1 The Real Estate Services Division of the Procurement and Real Estate Services Department (“**PRS**”), overseen by the Director, Real Estate Services, is the owner and administrator of this Policy. Except where separately authorized by a Department Head, the Corporate Solicitor, the CAO, or the Board, all Real Estate Transactions are to be administered by the Real Estate Services Division of PRS.

DEFINITIONS AND INTERPRETATION

4.1 Capitalized terms used in this Policy are defined as follows:

BOARD POLICY

“Acquire” or **“Acquisition”** means to obtain Real Estate by any method, including to accept, receive, purchase, be vested with, lease, licence, or take possession, control or occupation of Real Estate, or to agree to do any of those things, but excludes expropriation, except by agreement under section 3 of the *Expropriation Act*;

“Approved Budget” means the authorized budget (including any contingency amounts) for the capital project or operating program under which the Real Estate Transaction will be completed pursuant to this Policy and the *Corporate Real Estate Policy*, that is approved for expenditure in accordance with the Board-approved budget;

“Board” means, collectively, the MVRD Board of Directors, the GVWD Board of Directors, the GVS&DD Board of Directors, and the MVHC Board of Directors, or any one of them, as the context requires. For Real Estate Transactions, “Board” means the Board of Directors of the Metro Vancouver entity entering into the Real Estate Transaction;

“CAO” means the person appointed from time to time as the Chief Administrative Officer or Commissioner, as the context requires;

“Commitment Authority” means the authority to approve a Real Estate Transaction, including a Contract Amendment, in accordance with this Policy and the *Corporate Real Estate Policy* or as the applicable Board otherwise directs;

“Contract” means a contract, agreement or instrument to Acquire or Dispose of Real Estate, to use or manage Real Estate, or otherwise related to Real Estate, including but not limited to any permit, licence or lease (or any extension thereof), option to purchase, option to lease, broker agency agreement, confidentiality agreement, easement, statutory right of way, covenant or modification thereof, or any other document required to complete a Real Estate Transaction, and any Contract Amendment(s) thereto;

“Contract Amendment” means any change to a term, condition or other provision of a duly executed Contract;

“Contracting Authority” means the authority to execute and deliver a Contract, including a Contract Amendment, in accordance with this Policy and the *Corporate Real Estate Policy* or as the applicable Board otherwise directs;

“Corporate Real Estate Policy” means the *Delegation of Real Estate Authority Policy* (No. FN-033) as amended or replaced by the CAO from time to time;

“Corporate Solicitor” means the person appointed from time to time as the Corporate Solicitor;

BOARD POLICY

“**Department Head**” means the following Metro Vancouver officials, as the context requires: (i) a General Manager; (ii) a Deputy CAO; or (iii) a Deputy General Manager;

“**Deputy CAO**” means the person(s) appointed from time to time as the Deputy Chief Administrative Officer;

“**Deputy General Manager**” means the person appointed from time to time as the Deputy General Manager of the applicable Metro Vancouver department;

“**Director, Real Estate Services**” means the person appointed from time to time as the Director, Real Estate Services;

“**Dispose**” or “**Disposition**” means to transfer Real Estate (in whole or in part) by any method, including to assign, give, sell, grant, charge, convey, lease, licence, divest, dedicate, release, exchange, or alienate Real Estate, and to agree to do any of those things;

“**General Manager**” means a member of the Metro Vancouver Corporate Planning Committee (CPC);

“**General Manager, PRS**” means the person appointed from time to time as the General Manager, PRS;

“**GVS&DD**” has the meaning set out in Section 1.1(a);

“**GVWD**” has the meaning set out in Section 1.1(a);

“**Mandatory Conditions**” has the meaning set out in Section 5.1;

“**Metro Vancouver**” means, collectively, MVRD, GVWD, GVS&DD, and MVHC, or any one of them, as the context requires;

“**MVHC**” has the meaning set out in Section 1.1(a);

“**MVRD**” has the meaning set out in Section 1.1(a);

“**PRS**” has the meaning set out in Section 3.1;

“**Real Estate**” means land with or without improvements affixed to the land, any interest in land, air, or water (including any right, title or estate in it of any tenure), or any right to occupy or use land, air, or water;

“Real Estate Transaction” means the Acquisition, Disposition, use or management of Real Estate, as documented by a Contract, including but not limited to:

- i. the Acquisition or Disposition of a fee simple interest, including in the case of a Road Dedication;
- ii. the Acquisition or Disposition of a lease or similar interest;
- iii. a residential tenancy agreement;
- iv. the Acquisition or Disposition of a licence;
- v. the Acquisition of a statutory right of way, easement, covenant, permit, highway use permit, railway line crossing agreement, railway works permit, consent or similar interest;
- vi. the Disposition of a statutory right of way, easement, covenant, permit, pipeline crossing, consent or similar interest; and
- vii. an application, instrument, or arrangement entered into for, or in anticipation or support of, the Acquisition, Disposition, use or management of Real Estate, including but not limited to an application or agreement for rezoning, official community plan amendment, subdivision approval, a demolition, building or other development permit, use of a public road or highway, use of a railway line, and use of a right of way held by other parties;

“Regional Park” means a park dedicated by Metro Vancouver under the *Local Government Act*;

“Regional Trail” means a trail dedicated by Metro Vancouver under the *Local Government Act*; and

“Road Dedication” means the execution by an owner or a charge holder of a subdivision, reference or explanatory plan showing the dedication of land as road or highway to the public, including an application to deposit any such plan at the Land Title Office.

- 4.2** All references in this Policy to an employee, official, officer, or other representative of Metro Vancouver are deemed to include any designate, deputy, or anyone else authorized in writing by such employee, official, officer, or other representative (or by Board resolution) to act in that person’s position. For purposes of this Policy, any supervisor of an employee, official,

BOARD POLICY

officer, or other representative of Metro Vancouver is deemed to have the same authority as that person's position.

- 4.3** Where the title or name of any position, division, or department is changed following the adoption of this Policy as a result of a reorganization of Metro Vancouver's functions or for any other reason, the CAO will have the authority to amend this Policy to reflect such change, provided that the Board is duly informed within a reasonable time of any such amendment.

MANDATORY CONDITIONS FOR ENTERING INTO A REAL ESTATE TRANSACTION

5.1 Metro Vancouver staff are not authorized to enter into any Real Estate Transaction (other than a Disposition) for or on behalf of Metro Vancouver unless the following conditions are satisfied (the "**Mandatory Conditions**"):

- a) Approved Budget is in place for the Real Estate Transaction;
- b) the Real Estate Transaction has been authorized by the Board or the Metro Vancouver staff member(s) having Commitment Authority and Contracting Authority for the applicable Contract; and
- c) the Real Estate Transaction is required to support the short-term or long-term plans, priorities or ongoing operations of Metro Vancouver as set out in the Board Strategic Plan.

5.2 Metro Vancouver staff are not authorized to complete a Disposition for or on behalf of Metro Vancouver unless the following Mandatory Conditions are satisfied:

- a) the Disposition has been authorized by the Board or the Metro Vancouver staff member(s) having Commitment Authority and Contracting Authority for the applicable Contract; and
- b) the Disposition is required to support the short-term or long-term plans, priorities or ongoing operations of Metro Vancouver as set out in the Board Strategic Plan.

COMMITMENT AUTHORITY AND CONTRACTING AUTHORITY

6.1 Subject to the terms of this Policy, any statutory requirements, and Metro Vancouver bylaws, the CAO has Commitment Authority and Contracting Authority for:

- a) any Real Estate Transaction having a total value of up to \$10,000,000; and
- b) in the case of a lease, the exercise of any lease renewal option, provided that:
 - i. the lease renewal option and the total value (or mechanism to calculate the total value) of its exercise were contemplated in the original Contract; and

BOARD POLICY

- ii. the total value of exercising the lease renewal option does not exceed the Approved Budget at the time of exercise.

The CAO has the authority to further sub-delegate all such Commitment Authority and Contracting Authority to designated Metro Vancouver staff members as set out from time to time in the *Corporate Real Estate Policy*.

6.2 For any Real Estate Transaction having a total value of greater than \$10,000,000:

- a) only the Board having jurisdiction has Commitment Authority;
- b) Contracting Authority will be determined by the applicable Board in its sole discretion; and
- c) subject to the terms of this Policy, any statutory requirements, and Metro Vancouver bylaws, in the case of a lease, the CAO has Commitment Authority and Contracting Authority for the exercise of any lease renewal option, provided that:
 - i. the lease renewal option and the total value (or mechanism to calculate the total value) of its exercise were contemplated in the original Contract; and
 - ii. the total value of exercising the lease renewal option does not exceed the Approved Budget at the time of exercise.

The CAO has the authority to further sub-delegate the Commitment Authority and Contracting Authority under Section 6.2(c) to designated Metro Vancouver staff members as set out from time to time in the *Corporate Real Estate Policy*.

6.3 Notwithstanding anything to the contrary in this Policy, but in each case subject to the *Local Government Act*, only the Board having jurisdiction has Commitment Authority for the Disposition of a fee simple interest in a Regional Park or Regional Trail.

6.4 The Director, Real Estate Services, and Real Estate Services staff designated from time to time by the Director, Real Estate Services, have the authority to execute non-binding Real Estate instruments provided they are expressly subject to the approval, as applicable, of the Board, the CAO or the Metro Vancouver staff member(s) with Commitment Authority for the anticipated Contract as set out in Section 6.1 or Section 6.2 or in the *Corporate Real Estate Policy*.

6.5 Contract Amendments must meet the Mandatory Conditions set out in Section 5.1 or Section 5.2, as applicable.

METRO VANCOUVER REGIONAL DISTRICT
BYLAW NO. 1375, 2024
A bylaw to amend "Greater Vancouver Regional District Officers and Delegation
Bylaw No. 1208, 2014"

The Board of the Metro Vancouver Regional District enacts as follows:

Citation

1. The official citation of this bylaw is "Metro Vancouver Regional District Officers and Delegation Amendment Bylaw No. 1375, 2024".

Effective Date

2. This bylaw will come into effect on June 1, 2024.

Amendment of Bylaw

3. "Greater Vancouver Regional District Officers and Delegation Bylaw No. 1208, 2014" is amended as follows:

(a) Recital A is deleted and replaced with the following:

- A. The *Local Government Act*, R.S.B.C. 2015, Chapter 1 requires and authorizes a board by bylaw to establish officer positions and by bylaw or resolution to assign powers, duties and functions to officer positions; and

(b) In Section 1.1 the definition for "Act" is deleted and replaced with the following:

"Act" means the *Local Government Act*, R.S.B.C. 2015, Chapter 1;

(c) In Section 3.1(a) the number "197" is deleted and replaced with the number "235".

(d) Section 3.1(b) is deleted and replaced with the following:

- (b) the power under section 233(1) (Officers and employees for regional district) of the Act to appoint employees and establish their terms and conditions of employment;

(e) In Section 3.2 the number "199" is deleted and replaced with the number "237".

(f) In Section 3.3 the number "198" is replaced with the number "236".

(g) Section 4.1 is deleted and replaced with the following:

4.1 The Board delegates to the Regional District's officers and employees the powers, duties and functions of the Board under section 263(1)(a), (b) and (d) of the Act to enter into transactions relating to the Regional District's activities, works or services, subject to the limitations on that delegated authority set out in this bylaw and the *Procurement and Asset Disposal Authority Policy* and the *Real Estate Authority Policy* adopted by the Board and as may be amended from time to time.

Read a first, second, and third time this _____ day of _____, _____.

Adopted this _____ day of _____, _____.

George V. Harvie, Chair

Dorothy Shermer, Corporate Officer

FLEET PLANNING AND ACQUISITION POLICY

Effective Date: September 23, 2016 (revised June 1, 2024)

Approved By: MVRD Board

Policy No. FN-014

PURPOSE

To provide direction and guidance on planning and acquiring Metro Vancouver's fleet assets.

Metro Vancouver's *Fleet Planning and Acquisition Policy* supports the following broad objectives:

- Fleet assets meet operational service requirements
- Fleet planning and acquisition aims to achieve continuous improvement in reducing fleet greenhouse gas emissions (GHGs)
- Fleet management is financially responsible

DEFINITIONS

"Fleet Assets" means all vehicles and mobile equipment;

"Life Cycle Costs" means all costs associated with owning and operating fleet assets, including costs of initial capital, fuel, GHG emissions (using an internal price on carbon where applicable), maintenance, and depreciation, using net present value;

"Mobile Equipment" means all equipment that is engine, motor or non-motor powered with attached or towed equipment including rolling machinery in excess of \$2000 capital cost or if driven by Metro Vancouver employees, licenced or unlicensed, owned or leased by Metro Vancouver. Examples of mobile equipment include but are not limited to trailers, boats, movers, loaders, graders, excavators, backhoes, forklifts, tractors, chippers, and mobile generators / pumps; and

"Vehicle" means passenger vehicles including sedans, vans, pick-up trucks, sport utility vehicles (SUVs) or similar, licensed or unlicensed, owned or leased by Metro Vancouver.

POLICY

The *Fleet Planning and Acquisition Policy* aligns with the Board Strategic Plan's livability and sustainability objectives by encouraging Metro Vancouver to mitigate the environmental impact of its corporate fleet through transitioning to low emission technologies, where possible, while maintaining excellent standards in the delivery of regional services.

Metro Vancouver will ensure that fleet planning and acquisition will meet operational service requirements while minimizing fleet greenhouse gas emissions and taking into account life cycle costs.

Fleet planning, acquisition, monitoring, and reporting will be managed by Fleet Services within the Financial Services Department, in coordination with user groups, Air Quality and Climate Change Division, and the Energy Management Group.

1. Fleet Planning

Metro Vancouver's Fleet Services, along with the user groups and the Air Quality and Climate Change Division, will undertake a comprehensive *Fleet Planning Process* for all new and replacement fleet assets that will aim to optimize the size of the overall fleet, ensure fleet assets are chosen to meet typical operational requirements and consider low emission technologies where operationally feasible.

Right-Sizing

- a) Fleet services will conduct annual fleet utilization assessments in accordance with *Fleet Utilization Procedures* to optimize the size of Metro Vancouver's fleet while meeting operational needs. The assessments will include a process for identifying under-utilized assets so they can be reallocated or removed from the fleet.
- b) Fleet Services, in coordination with user groups, will conduct replacement assessments on current fleet assets to determine when assets are to be replaced, using the applicable *Fleet Assessment Procedures*. Each fleet asset will have assessment plans which considers age, kilometers, maintenance and repair costs, asset condition and utilization to determine replacement decisions.
 - i) Vehicles will be considered for replacement after eight years and/or when used over 200,000 km;
 - ii) Mobile Equipment will be considered for replacement on a case-by-case basis based on consultation between Fleet Services and the user group.
- c) Requests for new fleet assets require the user group to complete and submit a *Fleet Asset Business Case Form* to Fleet Services. The business case must justify the additional fleet asset and demonstrate the operational need it is addressing. All requests are subject to verification and audit by Fleet Services.
- d) Fleet Services, in coordination with the user group, will ensure that new and replacement fleet assets are an appropriate size to carry out typical operational requirements.

Low Emission Technologies

- a) Fleet Services, in coordination with the Air Quality and Climate Change Division, will develop and annually update a *Low Emission Vehicle Standard*. For each applicable vehicle category, the *Low Emission Vehicle Standard* will create a hierarchy of most-preferred to least-preferred technologies based on GHG emissions. The right-sizing process will identify the applicable vehicle category and typical operational requirements and the *Life Cycle Costing*

BOARD POLICY

Tool will determine which technology from the *Low Emission Vehicle Standard* will be selected for tendering.

- b) Recognizing that the technologies used in fleet assets are rapidly changing, Fleet Services in coordination with the Air Quality and Climate Change Division, will identify and evaluate new technologies, including supporting infrastructure, which may provide fuel savings and GHG reductions. As part of the *Fleet Planning Process*, studies of such technologies may be proposed and pursued under the Sustainability Innovation Fund process.

2. Acquisition

Using the *Life Cycle Costing Tool* and the *Low Emission Vehicle Standard*, Fleet Services, in coordination with the Air Quality and Climate Change Division, will purchase vehicles that provide the greatest reduction in greenhouse gas emissions where operationally feasible, based on the Life Cycle Analysis Costing Tool and the applicable Low Emission Vehicle Standard.

For mobile equipment, Fleet Services will purchase, on a case-by-case basis, the lowest emitting mobile equipment asset available that is operationally feasible and financially responsible.

Fleet Services will coordinate with the user group to ensure all fleet asset purchases meet operational requirements.

All Fleet purchases must be in accordance with Metro Vancouver's *Procurement and Asset Disposal Authority Policy*, *Delegation of Procurement Authority Policy*, and the Procurement Policy Guidelines.

3. Monitoring and Reporting

- a) Fleet Services will establish a baseline inventory of Metro Vancouver fleet assets and report annually on the financial and GHG emissions reduction performance of the fleet. The baseline inventory will include, but is not limited to, the following information:
 - Number of fleet assets by category
 - Monthly kilometers driven by vehicle/ monthly hours for mobile equipment
 - Fuel consumption by fleet asset
 - Fuel cost by fleet asset
 - Estimated GHG emissions by fleet asset
 - Maintenance cost by fleet asset
 - Fuel type by fleet asset

Related Documents:

Fleet Asset Business Case Form

COMMITTEE INFORMATION ITEMS AND DELEGATION SUMMARIES

Metro Vancouver Regional District

Board Meeting Date – Friday, April 26, 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 Parks Committee – April 3, 2024

Delegations:

No delegations presented

Information Items:

E2 Pacific Spirit Regional Park - Wreck Beach Update

Climate Action Committee – April 4, 2024

Delegation Summaries:

C1 Joanne McBrinn, Fraser River Community Alliance
Subject: Air quality and human health impacts re: Iona Barge Berth.
Executive Summary provided

C2 Mariko Michasiw, B2E Program Manager, Zero Emissions Innovation Centre (ZEIC)
Subject: Manager's Report - Retrofit Canada Conference
Executive Summary provided

Information Items:

E2 Regional Multi-Hazard Mapping Project
E3 Best Practices in Communicating Climate

Regional Planning Committee – April 5, 2024

Delegation Summaries:

No delegations presented

Information Items:

E6 Regional Affordable Housing Strategy Update (Housing 2050: A Roadmap to Implement *Metro 2050's* Housing Goal) – Scope of Work
E7 Regional Hazard, Risk, and Vulnerability Analysis Options Assessment – Scope of Work
E8 Economic Value of Industrial Lands Study Update – Scope of Work

Finance Committee – April 10, 2024

Delegation Summaries:

No delegations presented

Information Items:

- E1 2023 Metro Vancouver Regional District Final Audit Findings Report for the Year Ended December 31, 2023

Indigenous Relations Committee – April 12, 2024

Delegation Summaries:

No delegations presented

Information Items:

- E3 Technical Working Groups with Local First Nations
- E4 Quarterly Update Report on Reconciliation Activities