

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

REGULAR BOARD MEETING

Friday, April 30, 2021

9:00 A.M.

28th Floor Boardroom, 4730 Kingsway, Burnaby, British Columbia

[Membership and Votes](#)

A G E N D A¹

A. ADOPTION OF THE AGENDA

1. April 30, 2021 Regular Meeting Agenda

That the MVRD Board adopt the agenda for its regular meeting scheduled for April 30, 2021 as circulated.

B. ADOPTION OF THE MINUTES

1. March 26, 2021 Regular Meeting Minutes

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

2. April 8, 2021 Special Joint Meeting Minutes

That the MVRD Board adopt the minutes for the special joint meeting of the MVRD, MVHC, GVWD, and the GVS&DD Board of Directors held April 8, 2021 as circulated.

C. DELEGATIONS

D. INVITED PRESENTATIONS

E. CONSENT AGENDA

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

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

1. REGIONAL PARKS COMMITTEE REPORTS

1.1 Delta Nature Reserve and Delta South Surrey Greenway – Public Engagement and Management Plan

That the MVRD Board authorize staff to proceed with the engagement process as presented in the report dated March 16, 2021, titled “Delta Nature Reserve and Delta South Surrey Greenway – Public Engagement and Management Plan”.

2. REGIONAL PLANNING COMMITTEE REPORTS

2.1 Metro 2050 Draft Policy Language – Goal 3: Protect the Environment and Respond to Climate Change Impacts and the Implementation Section

That the MVRD Board receive for information the report dated March 26, 2021, titled “Metro 2050 Draft Policy Language – Goal 3: Protect the Environment and Respond to Climate Change Impacts and the Implementation Section”.

2.2 Metro 2050 Projections Update

That the MVRD Board receive for information the report dated March 17, 2021, titled “Metro 2050 Projections Update”.

2.3 Metro Vancouver 2020 Regional Industrial Lands Inventory

That the MVRD Board:

- a) receive for information the report dated March 25, 2021, titled “Metro Vancouver 2020 Regional Industrial Lands Inventory”; and
- b) direct staff to distribute the report titled “Metro Vancouver 2020 Regional Industrial Lands Inventory”, to member jurisdictions, the Province, the Port of Vancouver, TransLink, the Urban Development Institute, NAIOP, Vancouver Airport Authority, Agricultural Land Commission, and Squamish Lillooet and Fraser Valley Regional Districts to support ongoing efforts to protect the region’s essential industrial land base for industrial activities.

3. PERFORMANCE AND AUDIT COMMITTEE REPORTS

3.1 Audited 2020 Financial Statements

That the MVRD Board approve the Audited 2020 Consolidated Financial Statements for the Metro Vancouver Regional District.

3.2 2020 Financial Results Year-End

That the MVRD Board receive for information the report dated March 26, 2021, titled “2020 Financial Results Year-End”.

4. FINANCE AND INTERGOVERNMENT COMMITTEE REPORTS

4.1 National Zero Waste Council Annual Update

That the MVRD Board receive for information the report dated March 10, 2021 titled “National Zero Waste Council Annual Update.”

4.2 Union of BC Municipalities 2021 Community Excellence Awards Nominations

That the MVRD Board support the following entries for the Union of BC Municipalities 2021 Community Excellence Awards:

- a) Excellence in Governance: Metro Vancouver's Increased Engagement During a Time of "Social Isolation"; and
- b) Excellence in Sustainability: Lulu Island Renewable Natural Gas Facility.

5. CLIMATE ACTION COMMITTEE REPORTS

5.1 Draft Climate 2050 Transportation Roadmap

That the MVRD Board authorize staff to proceed with engagement on the draft *Climate 2050 Transportation Roadmap*, as presented in the report dated March 24, 2021, titled "Draft *Climate 2050 Transportation Roadmap*".

5.2 Best Management Practices for Invasive Species: Hedge Bindweed and American Bullfrog

That the MVRD Board:

- a) receive for information the report dated March 22, 2021, titled "Best Management Practices for Invasive Species: Hedge Bindweed and American Bullfrog"; and
- b) direct staff to forward the Best Management Practices and suite of seventeen invasive species fact sheets to member jurisdictions for information.

5.3 Help Cities Lead Campaign

That the MVRD Board write letters expressing its support for the Help Cities Lead Campaign, to the following Provincial Ministers:

- i. Minister of Environment and Climate Change Strategy;
- ii. Minister of Municipal Affairs;
- iii. Minister of Energy, Mines and Low Carbon Innovation;
- iv. Minister of Finance; and
- v. Attorney General and Minister responsible for Housing.

F. ITEMS REMOVED FROM THE CONSENT AGENDA

G. REPORTS NOT INCLUDED IN CONSENT AGENDA

1. REGIONAL PARKS COMMITTEE REPORTS

1.1 MVRD Regional Parks Regulation Amending Bylaw No. 1321, 2021 – Amends Bylaw 1177, 2012

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

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

That the MVRD Board:

- a) give first, second and third reading to *Metro Vancouver Regional District Regional Parks Regulation Amending Bylaw No. 1321, 2021*; and

- b) pass and finally adopt *Metro Vancouver Regional District Regional Parks Regulation Amending Bylaw No. 1321, 2021*.

1.2 Metro Vancouver Regional District Mosquito Control Service Amending Bylaw No. 1320, 2021 – Amends Bylaw 1164, 2012

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

That the MVRD Board:

- a) give first, second and third reading to *Metro Vancouver Regional District Mosquito Control Service Amending Bylaw No. 1320, 2021*;
- b) direct staff to seek consent of at least 2/3 of the participating member municipalities to amend the service by adding the City of Richmond to the Metro Vancouver Nuisance Mosquito Control Program, and following that, forward the *Metro Vancouver Regional District Mosquito Control Service Amending Bylaw No. 1320, 2021* to the Inspector of Municipalities for approval.

H. MOTIONS FOR WHICH NOTICE HAS BEEN GIVEN

I. OTHER BUSINESS

1. MVRD Board Committee Information Items and Delegation Summaries

J. BUSINESS ARISING FROM DELEGATIONS

K. RESOLUTION TO CLOSE MEETING

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

That the MVRD Board close its regular meeting scheduled for April 30, 2021 pursuant to the *Community Charter* provisions, Section 90 (1) (c) and (e) as follows:

- “90 (1) A part of a board meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:
- (c) labour relations or other employee relations;
 - (e) the acquisition, disposition or expropriation of land or improvements, if the board or committee considers that disclosure could reasonably be expected to harm the interests of the regional district.”

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

M. ADJOURNMENT/CONCLUSION

That the MVRD Board adjourn/conclude its regular meeting of April 30, 2021.

**METRO VANCOUVER REGIONAL DISTRICT
BOARD OF DIRECTORS**

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

MEMBERS PRESENT:

Burnaby, Chair, Director Sav Dhaliwal
North Vancouver City, Vice Chair Director
Linda Buchanan*

Anmore, Director John McEwen*

Belcarra, Director Jamie Ross*

Bowen Island, Director David Hocking*

Burnaby, Director Pietro Calendino*

Burnaby, Director Mike Hurley*

Coquitlam, Director Craig Hodge* (arrived at
9:05 a.m.)

Coquitlam, Director Richard Stewart* (arrived at
9:04 a.m.)

Delta, Director George Harvie*

Delta, Director Dylan Kruger*

Electoral Area A, Director Jen McCutcheon*

Langley City, Director Gayle Martin*

Langley Township, Director Jack Froese*

Langley Township, Director Kim Richter*

Lions Bay, Director Ron McLaughlin*

Maple Ridge, Director Mike Morden*

New Westminster, Director Jonathan Coté*

North Vancouver District, Director Lisa Muri*

Pitt Meadows, Director Bill Dingwall* (arrived at
9:03 a.m.)

Port Coquitlam, Director Brad West*

Port Moody, Director Rob Vagramov (arrived at
9:10 a.m.)

Richmond, Director Malcolm Brodie*

Richmond, Director Harold Steves*

Surrey, Director Linda Annis*

Surrey, Director Doug Elford*

Surrey, Director Laurie Guerra*

Surrey, Alternate Director Brenda Locke* for
Mandeep Nagra

Surrey, Director Doug McCallum*

Surrey, Director Allison Patton*

Tsawwassen, Director Ken Baird*

Vancouver, Director Christine Boyle*

Vancouver, Director Adriane Carr*

Vancouver, Director Melissa De Genova*

Vancouver, Director Lisa Dominato* (arrived at
9:23 a.m.)

Vancouver, Alternate Director Pete Fry* for
Kennedy Stewart

Vancouver, Director Colleen Hardwick*

Vancouver, Director Michael Wiebe*

West Vancouver, Director Mary-Ann Booth*

White Rock, Director Darryl Walker*

MEMBERS ABSENT:

None

STAFF PRESENT:

Jerry W. Dobrovolsky, Chief Administrative Officer

Eva Haan, Legislative Services Coordinator, Board and Information Services

Chris Plagnol, Corporate Officer

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

A. ADOPTION OF THE AGENDA

1. March 26, 2021 Regular Meeting Agenda

It was MOVED and SECONDED

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

CARRIED

B. ADOPTION OF THE MINUTES

1. February 26, 2021 Regular Meeting Minutes

It was MOVED and SECONDED

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

CARRIED

C. DELEGATIONS

No items presented.

D. INVITED PRESENTATIONS

No items presented.

E. CONSENT AGENDA

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

- 2.1 *Metro 2050* Draft Policy Language - Goals 1 and 2
- 2.2 Social Equity and Regional Growth Study

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

It was MOVED and SECONDED

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

- 1.1 Draft Clean Air Plan
- 1.2 Draft Climate 2050 Buildings Roadmap
- 2.3 *Metro 2050* Phase 1 Engagement Report
- 3.1 Vancouver Police Department's Mental Health Program
- 4.1 Regional Parks Plan Update
- 5.1 Allocation of COVID-19 Safe Restart Grant

CARRIED

The items and recommendations referred to above are as follows:

1.1 Draft Clean Air Plan

Report dated February 10, 2021, from John Lindner, Air Quality Planner, and Derek Jennejohn, Lead Senior Engineer, Parks and Environment, seeking MVRD Board authorization to proceed with engagement on the draft *Clean Air Plan*.

Recommendation:

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

Adopted on Consent

1.2 Draft Climate 2050 Buildings Roadmap

Report dated February 10, 2021, from Erik Blair, Air Quality Planner, and Jason Emmert, Senior Planner, Parks and Environment, seeking MVRD Board authorization to proceed with engagement on the draft *Climate 2050 Buildings Roadmap*.

Recommendation:

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

Adopted on Consent

2.3 Metro 2050 Phase 1 Engagement Report

Report dated February 22, 2021, from Erin Rennie, Senior Planner, Regional Planning and Housing Services, and Lucy Duso, Policy Coordinator, External Relations, providing an update to the MVRD Board on the implementation of the *Metro 2050 Engagement Plan*, highlighting engagement activities and input received to date.

Recommendation:

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

Adopted on Consent

3.1 Vancouver Police Department’s Mental Health Program

Report dated March 11, 2021 from the Mayors Committee requesting that the MVRD Board write a letter to the Province and the Special Committee on Reforming the Police Act requesting increased regional access to mental health services to partner and support police in all Metro Vancouver communities.

Recommendation:

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

Adopted on Consent

4.1 Regional Parks Plan Update

Report dated February 11, 2021 from Jamie Vala, Division Manager, Planning and Resource Management, Regional Parks, providing the MVRD Board with background on the preparation of the *Regional Parks Plan* update, and seeking authorization to proceed with phase 1 of the project focused on research and early engagement.

Recommendation:

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

Adopted on Consent

5.1 Allocation of COVID-19 Safe Restart Grant

Report dated February 23, 2021 from Joe Sass, Director, Financial Planning and Operations, Financial Services, seeking approval from the MVRD Board for the allocation of the COVID-19 Safe Restart Grant funding provided by the Province of BC.

Recommendation:

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

Adopted on Consent

F. ITEMS REMOVED FROM THE CONSENT AGENDA

9:04 a.m. Director Stewart arrived at the meeting.

9:05 a.m. Director Hodge arrived at the meeting.

2.1 Metro 2050 Draft Policy Language - Goals 1 and 2

Report dated February 19, 2021 from Erin Rennie, Senior Planner, Regional Planning and Housing Services, providing the MVRD Board with the opportunity to review and comment on the draft content of Goal 1 and Goal 2 of *Metro 2050*, the updated regional growth strategy.

Members were provided a presentation on the draft policy language for Goal 1 and Goal 2 in the update to *Metro 2050*, highlighting the scope of the update, policy review summaries, stakeholder and public engagement activities, timeline,

policy advice from the Intergovernment Advisory Committee, and key changes to the update.

9:10 a.m. Director Vagramov arrived at the meeting.

Members offered comments about understanding the implications of the draft policies, having regional planning staff present to municipal councils, the role of the Urban Containment Boundary, the value of protecting agriculture land, and decision-making related to trade-oriented land overlays.

9:23 a.m. Director Dominato arrived at the meeting.

Presentation material titled “Metro 2050 Update – Goals 1 and 2 Draft Policies” is retained with the March 26, 2021 agenda.

It was MOVED and SECONDED

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

CARRIED

2.2 Social Equity and Regional Growth Study

Report dated February 19, 2021 from Erin Rennie, Senior Planner, Regional Planning and Housing Services, conveying the results of the “Social Equity and Regional Growth Study: Considerations for integrating social equity into regional planning and Metro 2050” to the MVRD Board, and providing a summary of opportunities for integrating the study’s findings into *Metro 2050* and other future regional planning work.

Main Motion

It was MOVED and SECONDED

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

Members requested the opportunity for member jurisdictions to review the *Social Equity and Regional Growth Study* and provide comments back to Metro Vancouver.

Amendment to the Main Motion

It was MOVED and SECONDED

That the MVRD Board amend the Main Motion, at the end of the motion, by adding the following phrase: “and direct staff to send this report to member jurisdictions for review and comment back to Metro Vancouver.”

CARRIED

Question on the Main Motion

Question was then called on the Main Motion and it was

CARRIED

The Main Motion as amended now reads as follows:

That the MVRD Board receive for information the report dated February 19, 2021, titled "Social Equity and Regional Growth Study" and direct staff to send this report to member jurisdictions for review and comment back to Metro Vancouver.

G. REPORTS NOT INCLUDED IN CONSENT AGENDA

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

Report dated February 10, 2021 from Jamie Vala, Division Manager, Planning and Resource Management, Regional Parks, seeking MVRD Board approval of *Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No 1319, 2021* for the dedication of land acquired in 2020 as Regional Park.

It was MOVED and SECONDED

That the MVRD Board give first, second and third reading to *Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021*.

CARRIED

It was MOVED and SECONDED

That the MVRD Board pass and finally adopt *Metro Vancouver Regional District Dedication of Land as Regional Park Bylaw No. 1319, 2021*.

CARRIED

2.1 Indemnification Authorization Bylaw Updates - MVRD Amending Bylaw 1318

Report dated March 1, 2021, from Jerry W. Dobrovolny, CAO/Commissioner, and Chris Plagnol, Corporate Officer, seeking MVRD Board approval of an amending bylaw to indemnify Board members, officers, employees and volunteers of the Metro Vancouver Regional District.

Parts a) and c) of the motion were before the Board at this point.

It was MOVED and SECONDED

That the MVRD Board:

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

CARRIED

Part b) of the motion was before the Board at this point.

It was MOVED and SECONDED

That the MVRD Board:

- b) pass and finally adopt *Metro Vancouver Regional District Indemnification Authorization Amending Bylaw No. 1318, 2021.*

CARRIED

H. MOTIONS FOR WHICH NOTICE HAS BEEN GIVEN

No items presented.

I. OTHER BUSINESS

1. MVRD Board Committee Information Items and Delegation Summaries

It was MOVED and SECONDED

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

CARRIED

J. BUSINESS ARISING FROM DELEGATIONS

No items presented.

K. RESOLUTION TO CLOSE MEETING

It was MOVED and SECONDED

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

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

CARRIED

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

No items presented.

M. ADJOURNMENT/CONCLUSION

It was MOVED and SECONDED

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

CARRIED

(Time: 9:45 a.m.)

CERTIFIED CORRECT

Chris Plagnol, Corporate Officer

Sav Dhaliwal, Chair

**SPECIAL JOINT MEETING
MVRD, MVHC, GVWD, and GVS&DD BOARDS**

Minutes of the Special Joint Meeting of the Metro Vancouver Regional District (MVRD), Metro Vancouver Housing Corporation (MVHC), the Greater Vancouver Water District (GVWD), and the Greater Vancouver Sewerage and Drainage District (GVS&DD) Board of Directors held at 1:03 p.m. on Thursday, April 8, 2021 in the 28th Floor Boardroom, 4730 Kingsway, Burnaby, British Columbia, to participate in a workshop on preparations for the 2022 budget.

MEMBERS PRESENT:

Burnaby, Chair, Director Sav Dhaliwal
North Vancouver City, Vice Chair Director
Linda Buchanan*
Anmore, Director John McEwen*
Belcarra, Director Jamie Ross*
Bowen Island, Director David Hocking*
Burnaby, Director Pietro Calendino*
Burnaby, Director Mike Hurley*
Coquitlam, Director Craig Hodge*
Coquitlam, Director Richard Stewart*
Delta, Director George Harvie*
Delta, Director Dylan Kruger*
Electoral Area A, Director Jen McCutcheon*
Langley City, Director Gayle Martin*
Langley Township, Director Jack Froese*
Langley Township, Director Kim Richter*
Lions Bay, Director Ron McLaughlin*
Maple Ridge, Director Mike Morden* (arrived
at 1:07 p.m.)
New Westminster, Director Jonathan Coté*
North Vancouver District, Director Lisa Muri*
Pitt Meadows, Director Bill Dingwall*
Port Coquitlam, Director Brad West*

Port Moody, Director Rob Vagramov*
Richmond, Director Malcolm Brodie*
Richmond, Director Harold Steves*
Surrey, Director Linda Annis*
Surrey, Director Doug Elford*
Surrey, Director Laurie Guerra*
Surrey, Director Doug McCallum*
Surrey, Director Mandeep Nagra*
Surrey, Director Allison Patton*
Tsawwassen, Director Ken Baird*
Vancouver, Director Christine Boyle*
Vancouver, Director Adriane Carr*
Vancouver, Director Melissa De Genova* (arrived
at 1:05 p.m.)
Vancouver, Director Lisa Dominato* (arrived
at 1:44 p.m.)
Vancouver, Director Colleen Hardwick*
Vancouver, Alternate Director Pete Fry* for
Kennedy Stewart
Vancouver, Director Michael Wiebe*
West Vancouver, Director Mary-Ann Booth*
White Rock, Director Darryl Walker*

MEMBERS ABSENT:

None

STAFF PRESENT:

Jerry W. Dobrovolsky, Chief Administrative Officer
Lauren Cichon, Legislative Services Coordinator, Board and Information Services
Chris Plagnol, Corporate Officer

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

1. ADOPTION OF THE AGENDA

It was MOVED and SECONDED

That the MVRD, MVHC, GVWD, and GVS&DD Boards adopt the agenda for its joint meeting scheduled for April 8, 2021, as circulated.

CARRIED

2. PRESENTATION AND DISCUSSION

2.1 Board Budget Workshop

Jerry W. Dobrovolny, Chief Administrative Officer/Commissioner, introduced the 2022 Metro Vancouver Districts and Housing Corporation Budget Workshop, highlighting the process, timeline, and the context for the 2022 budget.

1:05 p.m. Director De Genova arrived to the meeting.

1:07 p.m. Director Morden arrived to the meeting.

2021 – 2025 Financial Plan

Dean Rear, Chief Financial Officer/General Manager, Financial Services, provided members with an overview of the financial planning environment and the budget deliverables including the ongoing improvements to the financial policies, financial reporting, project governance and continuous improvements at the department level.

The Board was provided information on the financial context in which Metro Vancouver operates including:

- state of the economy and the financial risks associated with the ongoing pandemic
- 2021 -2025 Operating Financial Plan
- 2021 -2025 Capital Financial Plan
- impact of services on the average household (the household impact)
- comparison of benchmarks of utility costs across North America for water, solid waste and liquid waste services

1:44 p.m. Director Dominato arrived to the meeting.

Members were provided a video presentation regarding the Metro Vancouver Budget Process highlighting infrastructure investments, and processes. Video presentation material is not retained with the agenda.

Members were informed of the following financial Toolbox measures that will be evaluated to manage the budgetary impacts:

- demand side management
- increase contract risk tolerance
- capital plan deferrals

- use of reserves
- increase debt amortization term
- reduce pay-as-you-go.

Discussion ensued on the 2022 budget information, and members offered the following comments:

- provincial and federal funding to offset costs for capital projects
- planning updates for integrated water management initiatives including funding for such projects as green infrastructure, wet weather flow incentives, and inflow and infiltration management
- impact of potentially postponing capital projects, such as water capital projects that would result in more restrictive lawn watering regulations by municipalities in drought years
- overall cumulative cost per household with respect to the North Shore Wastewater Treatment Plant including the 30-year amortization period and whether it applies to the entire project or only the North Shore portion
- consideration to reviewing the debt servicing measures set out in the *Financial Management Policy*
- research on population growth and its effect on housing demand, and in light of reduction in immigration due to the novel coronavirus (COVID-19) pandemic
- evaluating the scope of capital projects to align with needs of the region

With respect to 2022 financial planning, members were informed of the following relief measures being evaluated:

- leveraging supported tools to create a short-term action plan (2 years) and fully evaluating the thirty-year amortization for the North Shore Wastewater Treatment Plant
- optimizing capital plan timing and identifying deferment opportunities
- evaluating effects of more restrictive lawn metering regulations
- exploring demand side management options for liquid waste

Presentation material titled “Board Budget Workshop 2022 Financial Planning Cycle” is retained with the April 8, 2021 Metro Vancouver Joint Board Special Meeting agenda.

3. ADJOURNMENT OR CONCLUSION

The Chair declared the meeting adjourned at 3:05 p.m.

CERTIFIED CORRECT

Chris Plagnol, Corporate Officer

Sav Dhaliwal, Chair

To: Regional Parks Committee

From: Steve Schaffrick, Division Manager, Central Area, Regional Parks

Date: March 16, 2021 Meeting Date: April 7, 2021

Subject: **Delta Nature Reserve and Delta South Surrey Greenway – Public Engagement and Management Plan**

RECOMMENDATION

That the MVRD Board authorize staff to proceed with the engagement process as presented in the report dated March 16, 2021, titled “Delta Nature Reserve and Delta South Surrey Greenway – Public Engagement and Management Plan”.

EXECUTIVE SUMMARY

This report seeks approval to proceed with the engagement process for the development of a management plan for the Delta Nature Reserve and Delta South Surrey Greenway. In 2020, Regional Parks received fifty percent ownership and assumed operational responsibilities of the Delta Nature Reserve from the City of Delta.

The Delta Nature Reserve, along with lands in the Burns Bog Ecological Conservancy Area east of Highway 91, presents opportunities for ecosystem enhancement and expanded parks visitor facilities. The envisioned extension of the Delta South Surrey Greenway runs along the eastern boundary of these park lands. Planning for the park lands and greenway together will ensure a cohesive and rationalized management plan to guide park development, resource management and decision making.

If approved, the management plan process will start with a first phase of public, First Nations, and stakeholder engagement to inform the management plan.

PURPOSE

To provide the Regional Parks Committee and MVRD Board with background information that contributes to the preparation of a management plan for the Delta Nature Reserve (DNR), Burns Bog Ecological Conservancy Area (BBECA) lands east of Highway 91 and the Delta South Surrey Greenway (DSSG), and to receive authorization to begin phase 1 engagement for the plan.

BACKGROUND

The *Metro Vancouver Board Strategic Plan 2019 to 2022* directs the Regional Parks Service to develop individual park plans that provide public access to parks, and protect important ecosystems and habitats. When the City of Delta transferred a 50% ownership of the DNR to Metro Vancouver in 2020, staff committed to bring forward a subsequent report seeking MVRD Board authorization to initiate public and stakeholder engagement toward the management plan. This work was also identified on the *2021 Regional Parks Committee Work Plan*.

DELTA NATURE RESERVE AND DELTA SOUTH SURREY GREENWAY

Metro Vancouver began operating the DNR as part of the BBECA in November 2020. The DNR currently provides approximately 2 kilometres of boardwalks through bog and mature forest ecosystems. At the moment, the DNR is the only publicly accessible part of Burns Bog. The planning process will also consider opportunities for park staging and amenities, along with habitat enhancement in the additional lands within the BBECA east of Highway 91.

The *Regional Greenways 2050* plan identified routing of the DSSG along the eastern boundary of the BBECA, as part of a route between Mud Bay Park in Surrey and the Fraser River. The first greenway section, from Mud Bay Park to 64th Avenue / Kittson Parkway, was established and opened to the public in 2010. The next phase of the greenway is an envisioned extension from 64th Avenue to the Alex Fraser Bridge. This section is currently a service road for the Greater Vancouver Sewerage and Drainage District's South Surrey Interceptor (wastewater main) and is used as a de facto public trail. Attachment 1 provides a location map, and Attachment 2 provides a background summary of the park lands and greenway.

PARK MANAGEMENT PLAN

Management of the DNR and the BBECA is guided by the 2007 *Burns Bog Ecological Conservancy Area Management Plan*. The plan is primarily focused on protecting and restoring the ecological health of the bog lands. The covenants on title for lands in the DNR and the BBECA reference the Management Plan. As such, the DNR and DSSG Management Plan will be an addendum to the BBECA Management Plan.

The DNR and DSSG management plan will provide guidance for public access, park development, habitat enhancement and programming. Attachment 3 illustrates the management plan process.

Management Plan Approvals

As a 50% co-owner, the City of Delta will be participating in the management plan process. Plans for public access within the BBECA lands east of Highway 91 and outside of the DNR will require approvals from the Government of Canada and the Province of B.C., as per the terms of the parcels' covenants.

Project Area Flooding

The non-sanctioned public access to the DNR is frequently flooded between late fall and early spring by adjacent waterways. The majority of the flooding is as a result of the poor condition of the non-sanctioned trail, and the siltation of Cougar Creek. Addressing flooding will be a key issue for ecosystem management and public access within the planning process.

Delta South Surrey Greenway Tenure

The tenure along the DSSG is complex and incomplete. A number of agencies including the City of Delta and Ministry of Transportation and Infrastructure are landowners in this corridor. As part of the planning process, staff will review options for route alignment and tenure instruments.

South Surrey Interceptor Proximity

The South Surrey Interceptor (wastewater main) follows the same route as the DSSG. Geotechnical study will be required for park development to ensure integrity of the South Surrey Interceptor. This

proximal alignment also presents an opportunity to work with Liquid Waste Services because of potential shared access for the greenway and an upgraded service road.

ENGAGEMENT PROCESS

Metro Vancouver is committed to engaging with the public, First Nations, and stakeholders that have the potential to be impacted by the park and greenway management plan, and approaches engagement in a manner that incorporates feedback.

Scope of the Engagement

Two phases of engagement are proposed for the management plan process. Phase one will seek to understand values, issues and opportunities to inform the development of a draft management plan. Phase two of engagement will seek feedback on that draft management plan. Metro Vancouver will seek input from the City of Delta on public engagement opportunities in their community.

A summary of phase one engagement and a draft management plan will be brought to the Regional Parks Committee and the MVRD Board for consideration before initiating phase two engagement.

Metro Vancouver continues to adjust procedures to meet public health protection measures as part of COVID-19 pandemic response. Methods and tools (Attachment 4) proposed to obtain feedback have been adjusted to align with current public health protection measures.

City of Delta

Staff will provide periodic updates to seek input from the City of Delta Council and staff throughout the management plan process. Metro Vancouver has had an initial meeting with the City of Delta's key staff who will provide local information.

First Nations

All the lands in the management plan area are within the shared territory of nineteen First Nations: Cowichan Tribes, Halalt First Nation, Katzie First Nation, Kwantlen First Nation, Kwikwetlem First Nation, Lake Cowichan First Nation, Lyackson First Nation, Musqueam Indian Band, Penelakut Tribe, Seabird Island Band, Semiahmoo First Nation, Shxw'ow'hamel First Nation, Skawahlook First Nation, Soowahlie First Nation, Stó:lō Nation, Stó:lō Tribal Council, Stz'uminus First Nation, Tsawwassen First Nation and Tsleil-Waututh Nation. Staff will reach out to each First Nation to understand how they would like to be engaged in the process.

Stakeholders

Local municipalities, other government agencies, and non-profit organizations will be engaged to provide input to the management plan. Key stakeholders in development of the management plan include the Burns Bog Preservation Society and the Cougar Creek Streamkeepers. The Society was established a number of decades ago and currently runs education programs and events in the DNR. The Society also constructed approximately three kilometers of boardwalk in the DNR over the past several decades. The Streamkeepers are a volunteer group that works to protect and enhance stream health adjacent to the DNR and BBCEA.

ALTERNATIVES

1. That the MVRD Board authorize staff to proceed with the engagement process as presented in the report dated March 16, 2021, titled “Delta Nature Reserve and Delta South Surrey Greenway – Public Engagement and Management Plan”.
2. That the MVRD Board receive for information the report dated March 16, 2021, titled “Delta Nature Reserve and Delta South Surrey Greenway – Public Engagement and Management Plan” and provide staff with alternate direction.

FINANCIAL IMPLICATIONS

If the Board Alternative 1, it is expected that \$40,000 will be expended on plan development, engagement support and technical studies. These funds have been budgeted for in the 2021 Regional Parks Operating Budget. This management plan will establish a long-range vision for the greenway and park lands, including incremental improvements to be phased in over near and long terms, subject to regular work planning and budget approval processes. As the management planning process unfolds, we anticipate pre-construction reports will be required including geo-technical and Cultural Heritage studies to help determine where appropriate development could occur.

CONCLUSION

Metro Vancouver staff has completed pre-planning work in order to begin a management plan for the DNR and the DSSG.

If authorized, an engagement process will obtain feedback from the public, First Nations and stakeholders. Information gathered in the engagement process will inform the development of a draft management plan, which will be brought to the Regional Parks Committee and Board for consideration. This management plan will guide decision making for public access and education as well as resource management, trail and facility development, and operations.

Staff recommend Alternative 1.

Attachments (44253714)

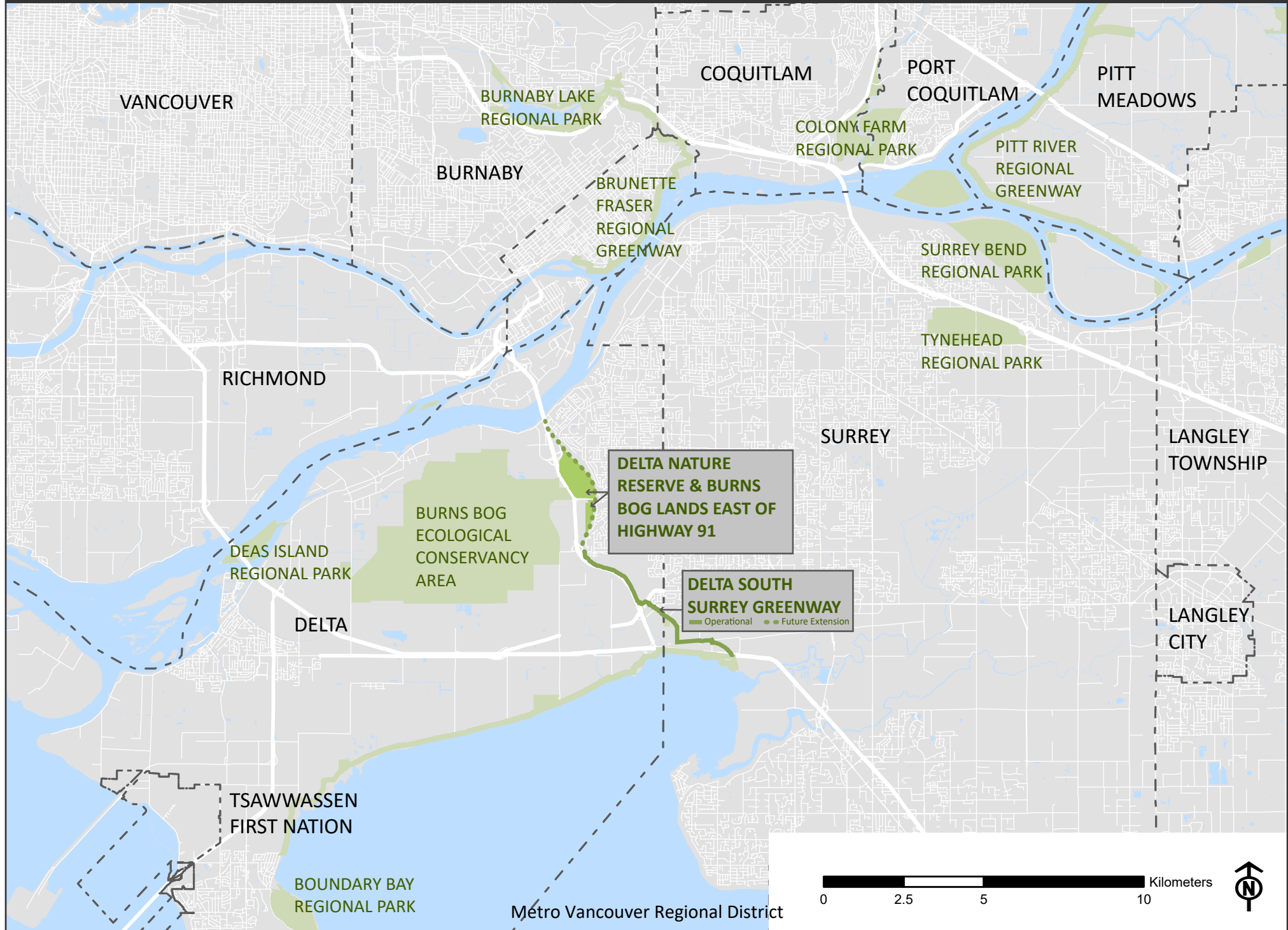
1. Delta Nature Reserve and the Delta South Surrey Greenway – Location Map
2. “Delta Nature Reserve and Delta South Surrey Greenway: Background Report”, dated March 2021 (44111860)
3. Regional Park Management Plan – Process Diagram
4. Phase 1 Engagement Methods and Timing

References

[Burns Bog Ecological Conservancy Area Management Plan](#)

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LOCATION MAP: DELTA NATURE RESERVE, BURNS BOG LANDS EAST OF HIGHWAY 91, AND DELTA SOUTH SURREY GREENWAY





Boardwalk in the Delta Nature Reserve

Delta Nature Reserve + Delta South Surrey Greenway Background Report

March 2021



EXECUTIVE SUMMARY

This report provides a background to inform the upcoming park planning process for the Delta Nature Reserve, the Delta South Surrey Greenway, and portions of the Burns Bog Ecological Conservancy Area east of Highway 91. These areas require a management plan to guide habitat conservation and enhancement, public access, park development, programming, and services over the long-term.

The background report outlines ecological and site analysis considerations. The ecological portion includes hydrology, ecosystems, conservation value, wildlife, and fish. The site analysis portion includes community context, neighbouring parks and protected areas, as well as park and greenway access, visitation, and existing facilities.

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1.0 INTRODUCTION



Figure 1: Project Area

Burns Bog is a 3,000 hectare raised bog located in the City of Delta (Hebda, 2000). The Delta Nature Reserve (DNR) protects the northeast corner of the bog and was the first section of the bog to be conserved.

Metro Vancouver was transferred fifty percent ownership of the DNR from the City of Delta in July 2020. The management responsibilities are shared between the City of Delta and Metro Vancouver, and are detailed in the Local Government Operations Agreement. In general terms, Metro Vancouver is responsible for overall park management and maintenance, and the City of Delta is responsible for monitoring and managing hydrology and for wild fire management. This management structure is identical to the other lands that comprise the Burns Bog Ecological Conservancy Area (BBECA).

The BBECA was established in 2004 and protects the majority of the bog. Nearby BBECA lands that are east of Highway 91 present opportunities for habitat protection and enhancement as well as opportunities to connect park visitors to nature. Included in the BBECA lands east of Highway 91 is a large previously developed area that presents opportunities for visitor facilities. Planning for these lands together with the DNR will ensure coordinated resource management and a cohesive visitor experience.

Running along the eastern edge of the DNR and BBECA, the Delta South Surrey Greenway (DSSG) is envisioned in the *Regional Greenways 2050* plan as a multi-use trail and greenway corridor. In 2010 the first phase of the DSSG, from Mud Bay Park to 64th Avenue, was opened for public use. The envisioned extension of the DSSG is from 64th north to the Alex Fraser Bridge, and potentially to the Fraser River. The DNR and the other lands east of Highway 91 will be connected by the DSSG.

Planning work for the DNR, the DSSG, and lands in the BBECA east of Highway 91 will be completed as an addendum to the 2007 BBECA Management Plan. The BBECA Management Plan outlines policy direction and actions to protect and enhance ecological integrity of the bog lands. It was prepared in collaboration by the Government of Canada, the Province of BC, the City of Delta, and Metro Vancouver. The plan states that public access and education for the bog lands will be provided at the DNR and DSSG. This addendum to the 2007 BBECA Management Plan will guide decision making for public access and education as well as resource management, trail and facility development, and park operations at the DNR, DSSG, and BBECA lands east of Highway 91.

This background report provides an overview of the DNR, DSSG, and BBECA lands east of Highway 91. It is intended to inform the addendum to the BBECA Management Plan.

2.0 CULTURAL HERITAGE

For thousands of years, First Nations have gathered berries and plants, and have hunted in Burns Bog (History of Burns Bog, n.d.) (Metro Vancouver, 2007). Plants gathered within the bog included cranberries, blueberries, Labrador tea, salal, and sphagnum moss (Hebda, 2000). Hunting within the bog included deer, moose, bear, and waterfowl (Metro Vancouver, 2007).

The lands addressed in this report—the DNR, DSSG, and lands in BBECA east of Highway 91—are within the shared territory of nineteen First Nations. Seven of these First Nations are located within the Metro Vancouver Region: Katzie First Nation, Kwantlen First Nation, Kwikwetlem First Nation, Musqueam Indian Band, Semiahmoo First Nation, Tsawwassen First Nation, and Tsleil-Waututh Nation. The additional twelve First Nations are located on Vancouver Island and the Fraser Valley: Cowichan Tribes, Halalt First Nation, Lake Cowichan First Nation, Lyackson First Nation, Penelakut Tribe, Seabird Island Band, Shxw'ow'hamel First Nation, Skawahlook First Nation, Soowahlie First Nation, Stó:lō Nation, Stó:lō Tribal Council, and Stz'uminus First Nation.

The seven local First Nations were partners in developing the səwq̓'eqsən Place of Learning and Recognition Area, at the south footing of the Alex Fraser Bridge. This area is the location of an ancestral village and cemetery, also known as the St. Mungo Cannery archaeological site. The Place of Learning and Recognition Area provides art and interpretive information displays, as well as a series of lookouts along a scenic trail.

3.0 PARK MANAGEMENT

DNR is co-owned by the City of Delta and Metro Vancouver. Metro Vancouver is responsible for overall management, including ongoing operation, maintenance and capital improvements while the City of Delta is responsible for the drainage system and fire management of the DNR and BBECA.

As part of overall site management, Metro Vancouver is responsible for coordination of all projects in consultation with the City of Delta, including an annual work plan review. Metro Vancouver's role in site security includes signage, fencing, patrols, and enforcement to protect the park lands and wildlife. Metro Vancouver informs the public about the park lands, including changes to trails and access, as well as to provide public education. Metro Vancouver also coordinates the BBECA scientific advisory panel, maintains spatial databases on the park lands, and facilitates scientific research and monitoring programs.

The DSSG is operated by Metro Vancouver through a series of agreements with various land owners. Metro Vancouver's role along the DSSG is limited to the trail corridor and includes trail maintenance and surfacing, signage, waste removal and patrols.

3.1. Burns Bog Management Plan

Existing management of the DNR and the BBECA is guided by the *2007 Burns Bog Ecological Conservancy Area Management Plan*.

The mission for the Burns Bog lands is:

“To restore the raised bog ecosystem and maintain its integrity in accordance with the best scientific principles and stewardship practices of the time, in collaboration with the community, offering opportunities for education/interpretation, sustainable recreation and scientific research.”

The plan lays out ecological, social, and fiscal management objectives for the lands, as well as actions to monitor, protect, and restore the lands. The plan directs that public access and education for the bog lands be focused at the DNR and DSSG, that the remainder of the lands in the BBECA be maintained with no public access, and that a bog education program be developed to be delivered at the DNR and DSSG.

3.2. Conservation Covenants

Conservation covenants protect the DNR and lands in the BBECA east of Highway 91. These covenants limit public access to appropriate areas of the lands as outlined by the BBECA management plan and as determined by City of Delta and Metro Vancouver for the DNR, and in the case of the BBECA, by the City of Delta, Metro Vancouver, the Province of B.C., and Government of Canada. The covenants list the 2000 Burns Bog Ecosystem Review as the baseline for assessing habitat protection and enhancement measures, and restrict actions that could negatively affect the bog lands, including public access. In order to allow public access to the BBECA lands east of Highway 91, the 2007 Management Plan will require an amendment, and the covenants may require amendments as well. Amendments to both the Management Plan and the covenants require approval from the City of Delta, Metro Vancouver, the Province of B.C., and the Government of Canada.

The DNR covenant states that no new buildings, structures, paths, or walkways are allowed on the lands except as consented to by the City of Delta and Metro Vancouver. The covenant specifically allows public access to the DNR for recreation and education purposes, and permits the DSSG to be operated and maintained along the eastern boundary of the DNR.

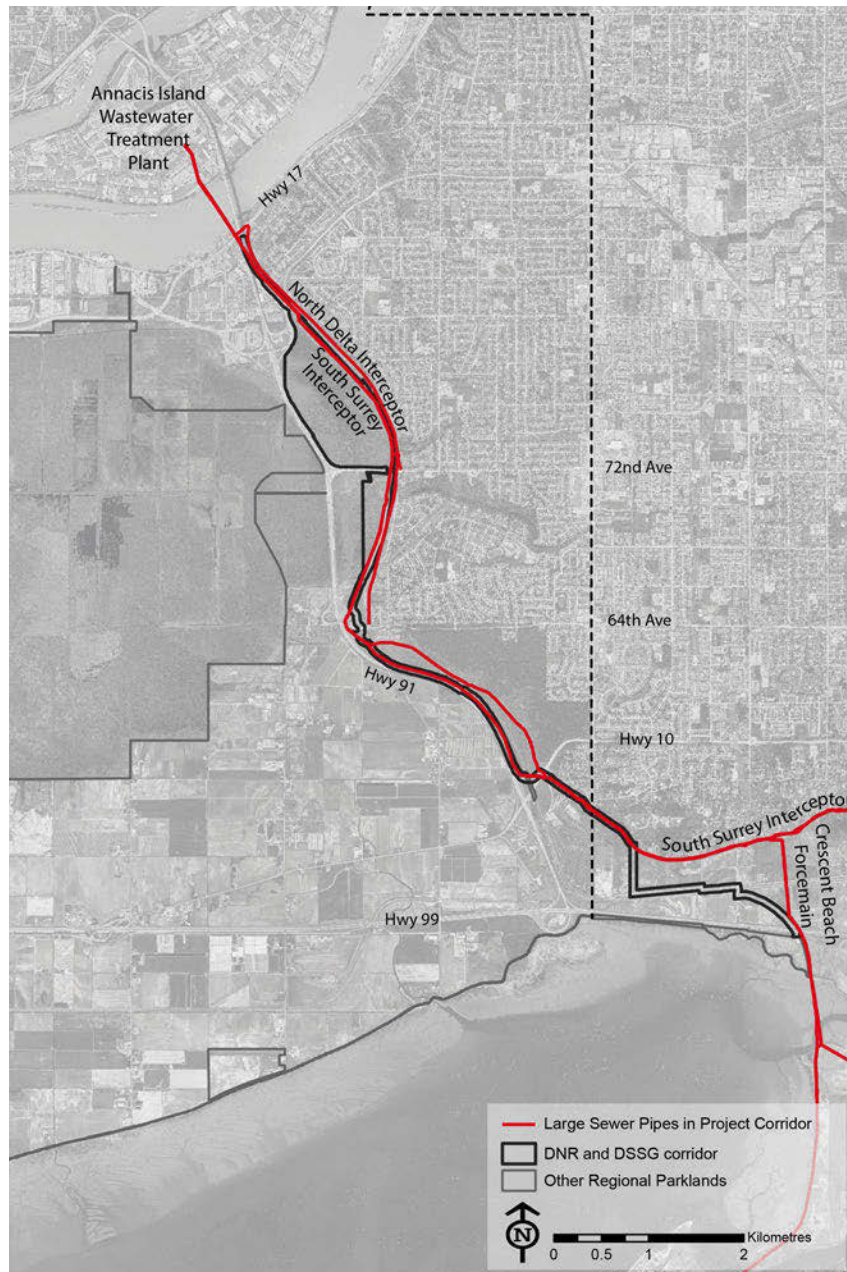
3.3. RAMSAR Designation

The BBECA lands are part of the Fraser River Delta Ramsar Site, a wetland complex recognized as having international importance. The Convention on Wetlands is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The convention was adopted in the Iranian city of Ramsar in 1971.

This Ramsar site was initially established in 1982 as the Alaksen Ramsar Site to protect 586 hectares. In 2012, Burns Bog along with four provincial wildlife management areas (Sturgeon Bank, South Arm Marshes, Boundary Bay and Serpentine) were added to the Ramsar Site, expanding the Ramsar Site to

20,682 hectares and resulting in a renaming to become the Fraser River Delta Ramsar Site. As part of this designation, it is expected that the site's ecological character and essential functions and values be maintained for future generations.

3.4. DSSG Coordination with Liquid Waste Services



The existing DSSG and future envisioned extension follow the service road for the South Surrey Interceptor, a large sewer pipe that directs liquid waste from South Surrey and Langley to the Annacis Island Wastewater Treatment Plan. As such, coordination of planning and maintenance is required along the corridor to ensure park development doesn't impact the integrity of the existing pipe.

Figure 2: Large Sewer Pipes in the DSSG corridor

3.5. Zoning

The DNR is located in the City of Delta. The DNR lands are in a P-A1 Split Zone.

The DSSG is mostly within the City of Delta, with its southernmost section in the City of Surrey. The Delta portion of the DSSG is within a variety of zoning including A1 Agriculture, RS1, I3 Extraction Industrial, Medium Impact Industrial Comprehensive Development, and P Public use.

The City of Delta Zoning Bylaw allows parks and public open space use in any zone (Zoning Bylaw Item 6.1.1.d), where “parks and public open space means any area of public land which is used or intended to be used by the public for recreation purposes, and may include community gardens and outdoor recreation facilities.”

The DSSG portion located in the City of Surrey is zoned as A-1 agriculture. In this zone, the City of Surrey permits conservation and nature study as well as fish, game, and wildlife enhancement, among other uses, provided that less than 10% of the lot is covered by buildings and structures. The City of Surrey Bylaw also permits municipal playgrounds and recreation areas in all zones (Zoning bylaw item A.1.a).

Rezoning of park and greenway lands is not anticipated as a requirement.

Regional Land Designation

The DNR and lands in the BBECA east of Highway 91 are regionally designated as conservation and recreation. Where the future DSSG is within or adjacent to the DNR and lands in the BBECA east of Highway 91, it is also designated as conservation and recreation. South of this point, the DSSG is almost entirely within lands designated as agricultural. The exceptions are a parcel of City of Surrey land designated as conservation and recreation, and a portion of the trail southeast of Highway 10 that designated as general urban.

Delta Official Community Plan

The DNR and lands in the BBECA east of Highway 91 are designated as Environmentally Sensitive Area in the City of Delta’s Official Community Plan. The existing portions of the DSSG have no designation where they are adjacent to Highway 91, and run on lands designated as Parks and Recreation Areas to the south of Highway 10. The future extension of the DSSG is either within the Single Family Residential Designation or the Environmentally Sensitive Area Designation depending on final route alignment.

Surrey Official Community Plan

Within the City of Surrey, the DSSG is largely within lands designated as Agricultural in the City’s Official Community Plan. It also passes through a parcel with the City’s Conservation and Recreation Designation, and area designated as Suburban.

3.6. Agricultural Land Reserve

The DNR is within the Agricultural Land Reserve (ALR); portions of the DSSG are also within the ALR (see figure 3). Conservation, passive recreation, and open land parks are a permitted use in the ALR. Many of the permitted non-farm uses are subject to conditions, thresholds, or other requirements. As part of the planning process, the Agricultural Land Commission, who oversee the ALR, will be consulted in respect to obtaining any permits or approvals.

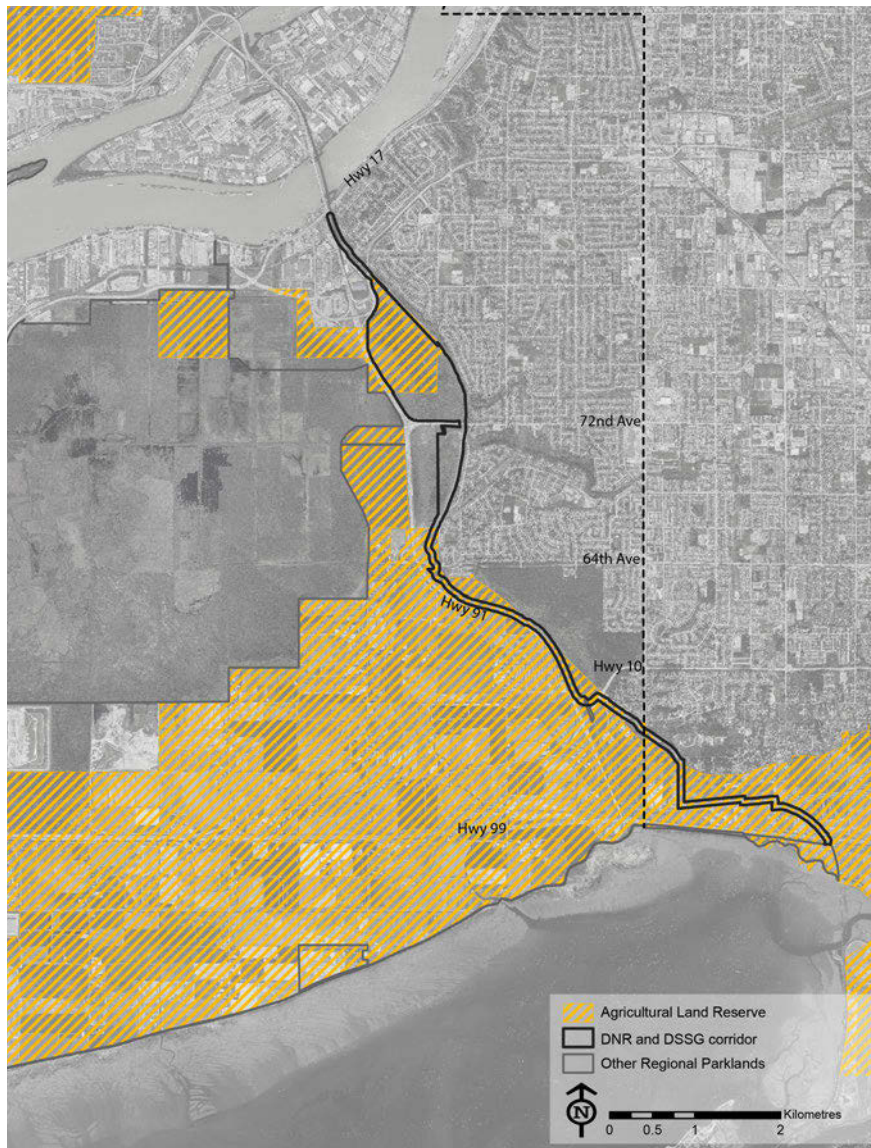


Figure 3: Lands in the Agricultural Land Reserve

4.0 BIOPHYSICAL SUMMARY

4.1. Topography

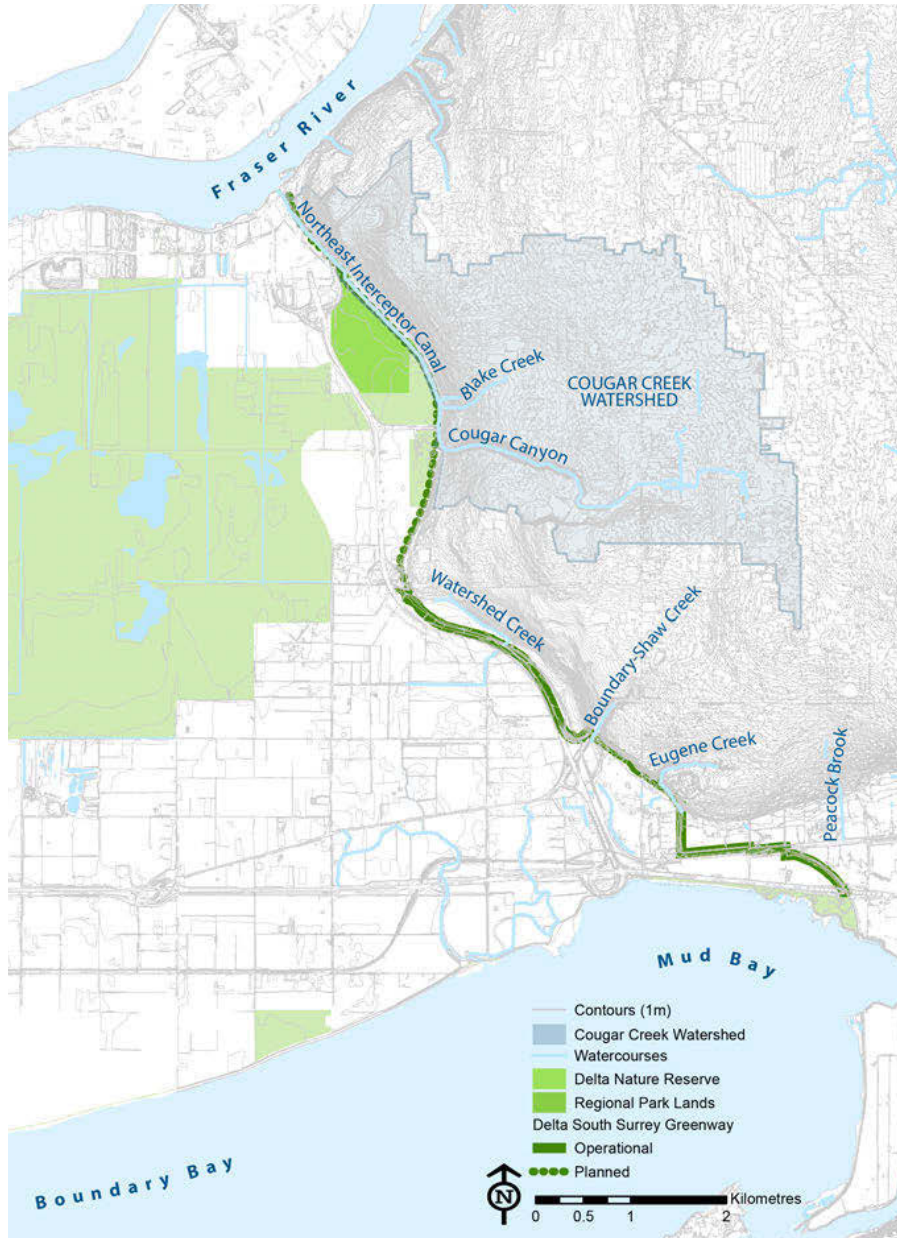


Figure 4: Topography and Hydrology

The DNR and BBECA lands east of Highway 91 are located on the lowlands of the Fraser River Delta at the base of the North Delta/Surrey uplands, about 10 to 20 metres below residential dwellings on the uplands. The DSSG follows the base of the uplands almost the whole length of its route, departing the uplands at its most southern portion. The slope of the upland areas adjacent to the park land and greenway is greater than 20% in some locations of the corridor with records of up to three landslides before 1956 (Eisbacher, 1981) (Turner, 1998).

The DNR is a fairly flat area with gentle slopes and elevations ranging from about 1.5 to 4 metres. The adjacent BBECA lands east of Highway 91 have similarly gentle slopes with a range of about 1.5 to 6 metres, and areas as high as 7.5 metres just south of 72nd Avenue. There are also a handful of small mounds rising up to about 10 metres. The envisioned route of the DSSG north of

64th Avenue ranges from about 2m to 6m in elevation with gentle slopes and a high point up to 11 m around 64th Avenue. South of 64th Avenue, the DSSG elevation ranges from about 1 to 9 metres with gentle slopes, except where it rises abruptly to an overpass at a height of about 12 metres to cross above a railway line. The trail drops to an elevation of about 1 metre at its southernmost portion (City of Delta, n.d.) (City of Surrey, n.d.).

4.2. Burns Bog Hydrology

Burns Bog is a 5000-year-old raised peat bog. Raised peat bogs are wetlands where the water table is at or near the ground surface for most of the year, and yearly rain water is higher than water loss through evaporation and plant transpiration (Hebda, 2000). Burns Bog is almost entirely dependent on precipitation as incoming water to sustain the bog (Metro Vancouver, 2007). Raised bogs are nutrient-poor, very acidic and always wet environments and are home to a range of plant species tolerant of and adapted to these conditions.

Peatland vegetation communities are a defining characteristic of Burns Bog. In recent years the diversity of vegetation community types has increased across the bog as the greater ecosystem has responded to human caused changes to the water table. The most pristine areas of the bog contain sphagnum moss communities combined with a variety of ericaceous shrub species and scattered stunted lodgepole pine (Hebda, 2000). These ecosystems result in peat-forming processes that are important in maintaining ecosystem integrity. As sphagnum mosses and peatland plants decay, they turn into peat, becoming part of the top layer of the bog that regulates water storage. These eventually become part of the lower bog layer which keeps water from leaving the bog (Metro Vancouver, 2007). These two layers encapsulate the perched water mound within the core area of Burns Bog, which gives the bog it's domed shape (Hebda, 2000).

Balance of water inflow and outflow along with water storage are essential to maintain a bog's viability. When parts of the bog become drier through ditching and other changes in hydrology, those areas become more favorable for shrubs and trees. As shrubs and trees grow, they lead to further increases in water loss from the bog lands through evapotranspiration, as well as the loss of sphagnum mosses due to canopy cover and conditions that favour other species (Hebda, 2000). Without sphagnum mosses and other peatland plant communities, peat cannot form and the bog cannot regenerate (Hebda, 2000). The lodgepole pine and hardhack ecosystems within the DNR have developed on areas that were unforested bog prior to human disturbance (Hebda, 2000). Changes in water chemistry and mineral levels can also lead to changes in vegetation by creating conditions favorable for non-bog plants, such as cattail, willow, alder and common rush (Hebda, 2000). Where the water table in the bog has been lowered significantly, lower lying peat dries out and subsides while releasing stored carbon to the atmosphere.

The DNR and BECA lands east of Highway 91 are adjacent to the Burns Bog water mound, and support the bog's hydrological cycle through water storage and buffering the water mound area from less acidic, mineral-rich waters (Hebda, 2000) (Metro Vancouver, 2007).

4.3. DNR and DSSG Hydrology

The uplands above the DNR and DSSG contributed to the original development of the bog by directing limited water flows into the lowlands (Hebda, 2000). Water flows were much lower when the uplands contained forests that absorbed water and released it slowly to the atmosphere or small creeks.

Water storage capacity in these watersheds have been compromised through the effect of development and storm water flows now frequently overwhelm the ability of the DNR to buffer the raised bog communities from the effects of mineral rich waters.

These waters are within the Cougar Creek Watershed, where water now flows from the uplands into Cougar Canyon and the Northeast Interceptor Canal. The Canal is subject to tidal influences of the Fraser River (Dillon Consulting Limited, 2009).

The northern section of the DSSG runs parallel to the Northeast Interceptor Canal. Further south, portions of the DSSG are parallel to Watershed and Eugene Creeks.

4.4. Northeast Interceptor Canal Flooding

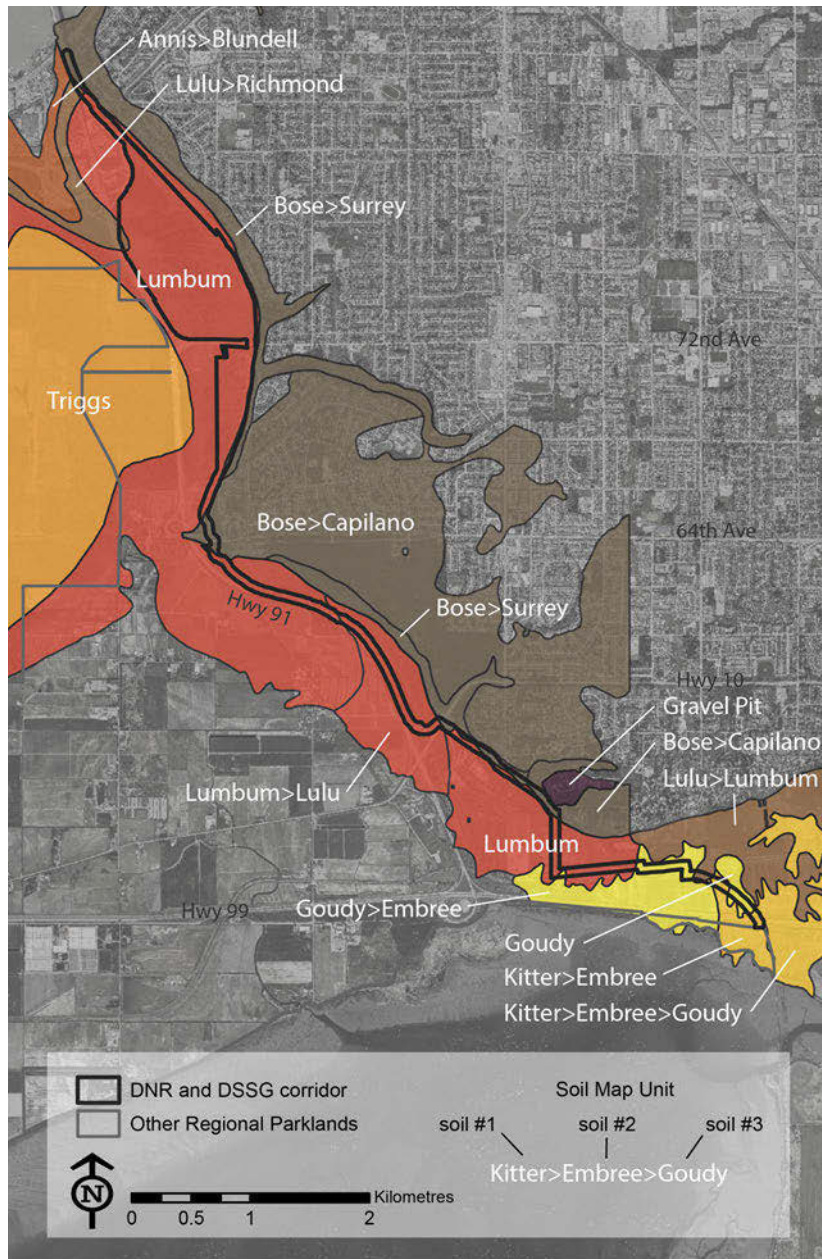
The Cougar Creek Watershed collects water within City of Surrey and City of Delta neighbourhoods before entering the Fraser River. The watershed is fed by numerous storm water outfalls from adjacent neighbourhoods. In the canyon area of Cougar Canyon, the creek flows quickly and is prone to erosion (Dillon Consulting Limited, 2009).

During heavy rain events, the Northeast Interceptor often floods the DSSG and portions of the DNR. These floods occur frequently between late fall to early spring. This results in additional water flow and minerals entering the DNR, which can be detrimental to bog vegetation as explained in section 4.2 of this report. When water levels are high, waters flows under Highway 91 through road culverts into Burns Bog west of Highway 91 (Hebda, 2000). Bogs are sensitive to water flow levels, mineral inputs, and chemical composition of incoming waters. These inputs need to be managed to protect the health of bog ecosystems.

This flooding also makes the DNR and portions of the future DSSG north of 72nd avenue inaccessible, reducing opportunities to access the parklands.

4.5. Soils

The soils in the DNR, BBECA lands east of Highway 91, and the DSSG are mostly post ice-age soils less than 10,000 years old (Turner, 1998). Up the hill from the park and greenway, the soils include ice-age sediments of till, gravel, and sand as well as older, steepland sediments (Turner, 1998).



The soils covering the DNR and BBECA lands east of Highway 91 are primarily classified as Lumbum, a very poorly drained organic soil. A small area of the DNR is classified as Lulu. Both Lulu and Lumbum soils in the Burns Bog area primarily developed from Sphagnum moss (Hebda, 2000). The DSSG weaves through a variety of mineral soils, but is primarily located on Lumbum soils as well (Luttmerding, 1981). Lumbum and Lulu soils are both wetland soils with the water table at or near the surface. Lumbum and Lulu soils are very acidic with a pH less than 5.6 (Agriculture and Agri-Food Canada, n.d.).

Figure 5: Soil Types

	Soil Name	Soil Material	Drainage
Organic Soils	GOUDY	Up to 53 cm of organic material over silt loam.	Very poorly drained
	LUMBUM	Entirely organic material; largely developed from sphagnum peat; moderately pervious.	Very poorly drained
	LULU	Up to 87 cm of organic deposits over silty clay; moderately pervious.	Poorly drained
	RICHMOND	63 to 80cm of organic material over silty clay loam; moderately pervious.	Very poorly drained
Mineral Soils	BOSE	22 - 60 cm of Gravelly sandy loam over gravelly sand, followed by loam and clay loam layers; marine material; slow perviousness.	Moderately well drained
	CAPILANO	Thin up to 8cm layer of organic soil, over 27 to 42 cm of coarse sand, over very gravelly sand; fluvial material; rapidly pervious.	Well drained
	EMBREE	0 - 25 cm of silt loam over an organic mucky layer of 25 – 75 cm, over another layer of silt loam; fluvial material; moderately pervious.	Poorly drained, moderately pervious
	KITTER	Silt Loam; fluvial material	Poorly drained
	SURREY	Sandy Loam with up to an 8cm top layer of organic material; slow perviousness.	Moderately well drained

4.6. Vegetation

Although twenty-four different plant community types were identified within Burns Bog during the Ecosystem Review conducted in 2000, not all are found east of Highway 91. For the most part, this area is dominated by mature mixed coniferous forest containing Western Red Cedar, Sitka Spruce, Western Hemlock and a mix of various deciduous tree species. A small area of Lodgepole Pine-Sphagnum woodland can be found near the north end of the DNR. Small birch stands also exist in the area as does a section of Pine-salal forest. The understory of these forests varies across the site with some containing a dense shrub layer, while others are quite bare. Several smaller wet pockets of vegetation comprising swamp ecosystems can be found within the DNR.

Sections of the last remaining intact lagg areas within the ecosystem complex can be found along the interface with eastern side of Highway 91. Lagg areas are important transition zones between upland forests and raised bog areas and are typically dominated by hardhack, red-osier dogwood and other wetland shrub species. These lagg areas buffer the peatland areas from the effect of nutrient-rich waters originating from upland areas.

The site of the decommissioned peat plant is in places covered by dense deciduous trees including birch, alder and cottonwood.

4.7. Ecosystems

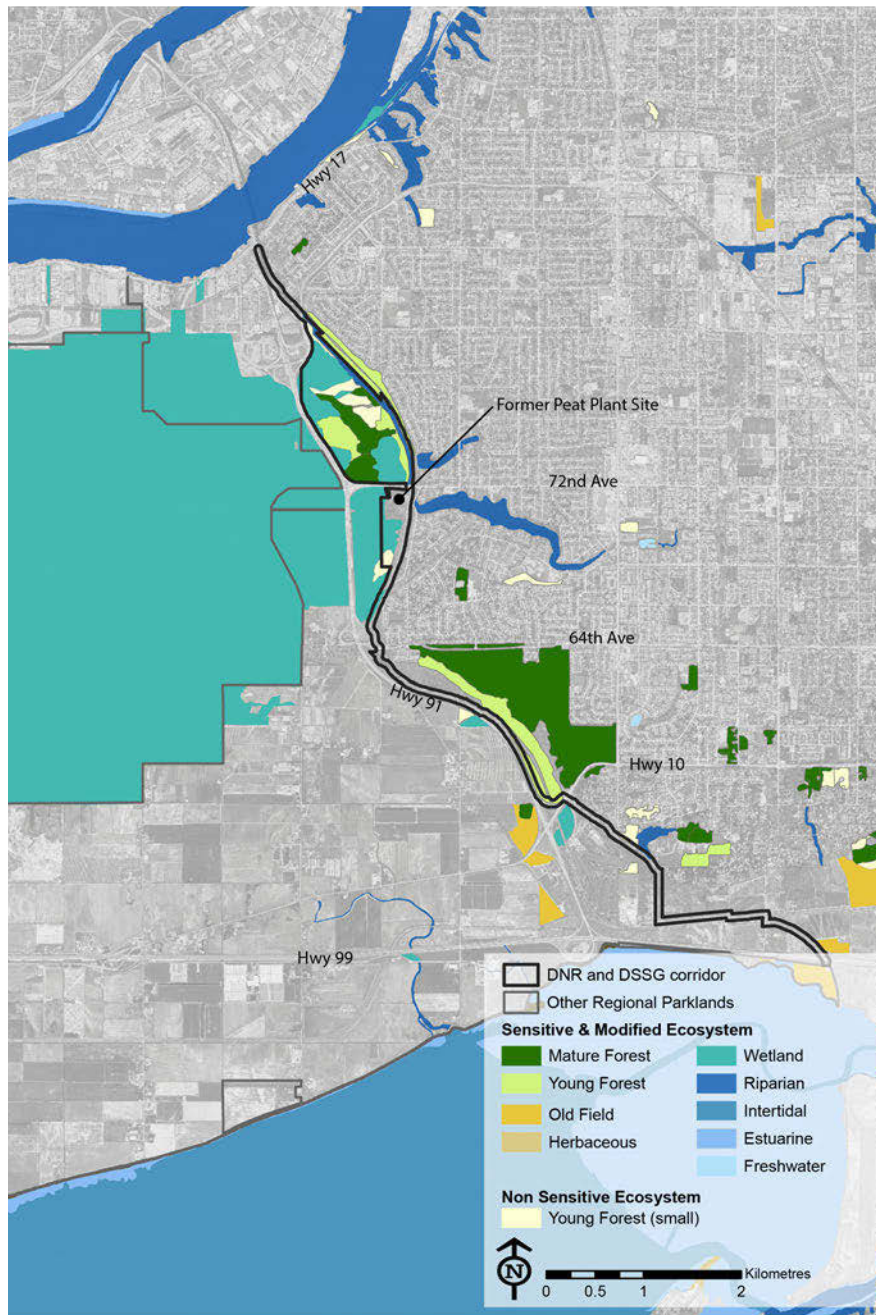


Figure 6: Ecosystems

The DNR and BBECA lands east of Highway 91 contain 78% sensitive and modified ecosystems, including young forest, mature forest, wetlands, and riparian. Sensitive ecosystems are rare, ecologically fragile, and/or at-risk ecosystems, while modified ecosystems are ecosystems with ecological and biological value that have been modified by previous development.

Small young forest patches that don't meet the criteria for sensitive or modified ecosystems make up another 13% of the project area. The remaining 9% of the project area consists of previously developed lands. Most of these lands were part of a former peat plant.

Sensitive ecosystem classification for this project area is based on terrestrial ecosystem mapping that was largely completed in 2000. This data will be updated in 2021, resulting in a better understanding of the current state of these ecosystems.

4.8. Conservation Value Mapping

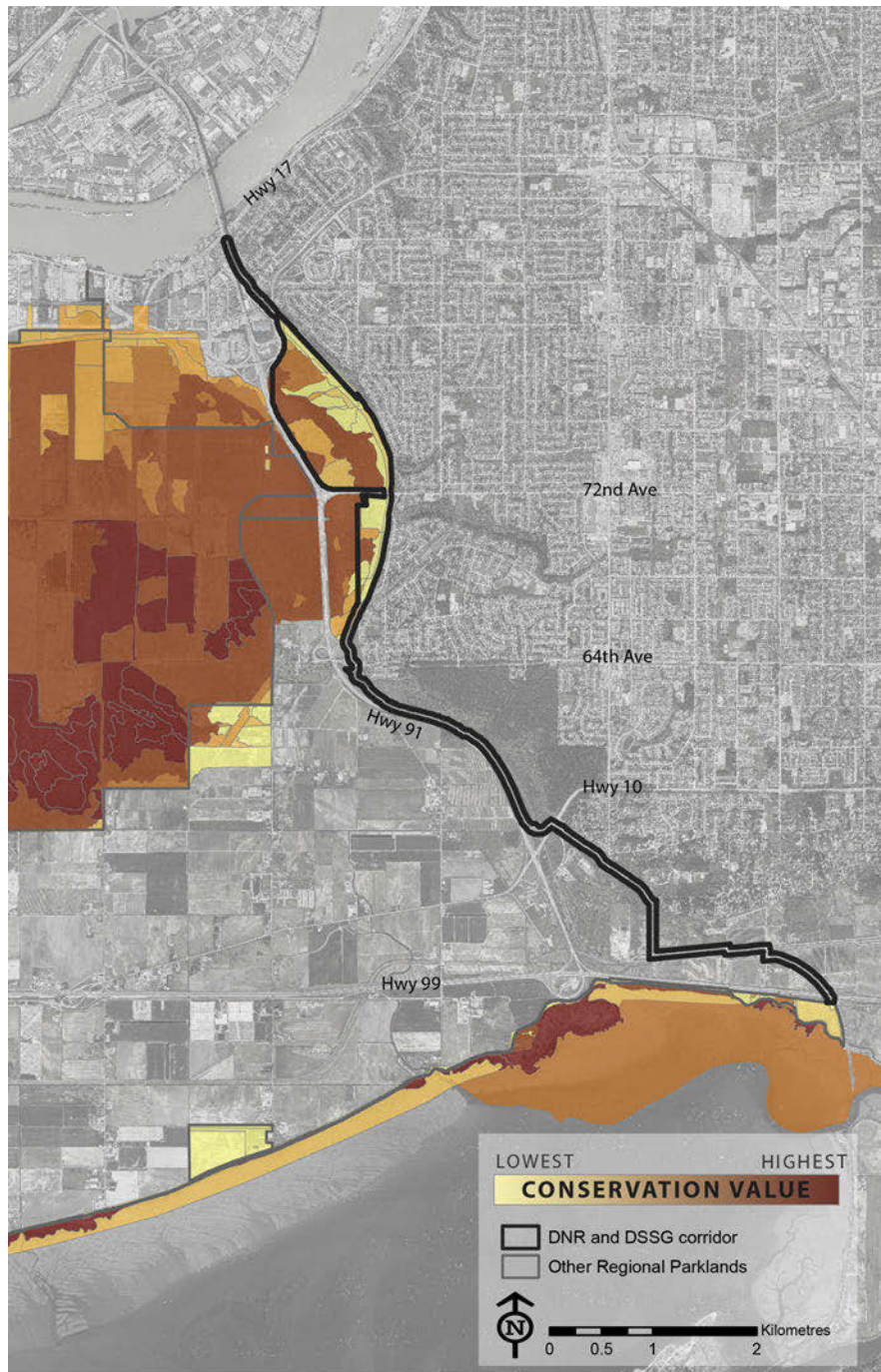


Figure 7: Conservation Value Mapping

Metro Vancouver has undertaken conservation value mapping to quantify conservation values of the area's ecosystems. Conservation value mapping (figure 6) is an analysis that incorporates ecosystem information, such as at-risk, fragile, or ecologically important ecosystems, incorporating species information, context, and condition and ranks the conservation value of different patches. This analysis shows that the wetlands as well as a large mature forest area have the highest conservation value within the park lands (see lands within the black outline on figure 7). The highest conservation value lands are north of 72nd Avenue with a small wetland area south of 72nd Avenue. Habitat restoration and enhancement can increase the conservation value of some of these disturbed ecosystems, while other areas provide the opportunity for park access and connecting to nature.

4.9. Wildlife

The large size of the Burns Bog, as well as the diversity of habitats within the bog, make it home to an abundance and diversity of wildlife including 175 bird species, 41 mammal species, 11 amphibian species, six reptile species, and approximately 4,000 invertebrate species (Metro Vancouver, 2007). The DNR and BBECA lands east of Highway 91 also contain bog and bog forest. These areas have a high potential for wildlife diversity and provide connectivity between bog and upland habitats (Hebda, 2000). In the DNR alone, over 91 species of birds have been documented in the last 10 years (Cornell Lab of Ornithology, n.d.).

4.10. Fish

While not within the park lands or greenway, the Northeast Interceptor Canal, also known as lower Cougar Creek, runs adjacent to the DSSG from 72nd Avenue north to the Fraser River. The watershed is the City of Delta's most productive salmonid habitat, with both spawning and rearing areas (Dillon Consulting Limited, 2009). The canal provides spawning habitat between its junctions with Blake Creek and Cougar Canyon. Blake Creek and Cougar Canyon provide the highest quality spawning areas within the watershed (Dillon Consulting Limited, 2009).

The B.C. Ministry of Environment's Fish Inventory lists the following species in the Cougar Creek watershed: chinook salmon, chum salmon, coho salmon, cutthroat trout, peamouth chub, sculpin, and threespine stickleback (B.C. Ministry of Environment and Climate Change Strategy, n.d.). Cougar Creek Streamkeepers release 150,000 chum fry and 1,000 coho smolts into the watershed annually (Cougar Creek Streamkeepers, n.d.).

Further south in the project area, Eugene Creek is a fish bearing stream with salmonid habitat adjacent to the DSSG (City of Surrey).

4.11. Ecosystems and Species at Risk

The DNR and BBECA lands east of Highway 91 contain three provincially red-listed ecosystems (western redcedar - Douglas Fir / Oregon beaked-moss, grand fir / three-leaved foamflower, and lodgepole pine / peat-mosses) as well as one provincially blue-listed ecosystem (western redcedar / sword fern – skunk cabbage). Red listed ecosystems are ecosystems at risk of being lost, and blue listed ecosystems are those of special concern. Within Metro Vancouver Regional Parks, the western redcedar – Douglas-fir / Oregon beaked-moss as well as the grand fir / three-leaved foamflower ecosystems only occur within the BBECA. Additionally, the grand fir / three-leaved foamflower ecosystem is both provincially and globally at risk (Meidinger, 2020). The lodgepole pine / peat moss ecosystem requires specific moisture conditions and is sensitive to changes in water chemistry and hydrology (Meidinger, 2020). The 2021 update to terrestrial ecosystem mapping for the DNR and the BBECA lands east of Highway 91 will confirm ecosystems within the park lands and could identify other red or blue listed ecosystems.

The DNR and BBECA lands are considered to provide moderately-high suitable habitat for red and blue listed small mammals (Southern Red-backed Vole and Trowbridge's Shrew) as well as red and blue listed

birds (Hutton's Vireo and Barn Owl) (Gebauer, 2000). The DNR and BBECA lands are also home to red-legged frogs, a provincially blue-listed species (Hebda, 2000).

4.12. Invasive Species

Invasive species are non-native plants and animals that threaten the ecological integrity of natural areas. They can threaten ecological integrity of natural ecosystems by outcompeting native species, thereby reducing available space for those species, as well as by creating monocultures that reduce overall biodiversity. Some invasive plants can change nutrient regimes and/or alter hydrological processes, resulting in an ecosystem transforming into a different ecosystem.

The B.C. Invasive Alien Plant Program has identified species in the table below as being found at the DNR, BBECA lands east of Highway 91 and along the DSSG. Detailed mapping of invasive plant species is underway by Regional Parks staff as part of the park and greenway management planning process.

Invasive Plant species at DNR and BBECA East of Highway 91 (Ministry of Forests, Lands, and Natural Resource Operations, n.d.)

1	<i>Arctium spp</i>	Burdock species
2	<i>Calystegia sepium</i>	Hedge false bindweed
3	<i>Convolvulus arvensis</i>	Field bindweed
4	<i>Daphne laureola</i>	Daphne / spurge laurel
5	<i>Euphorbia esula</i>	Leafy spurge
6	<i>Fallopia japonica</i>	Japanese knotweed
7	<i>Geranium robertianum</i>	Herb robert
8	<i>Hedera helix</i>	English ivy
9	<i>Ilex aquifolium</i>	English holly
10	<i>Impatiens glandulifera</i>	Policeman's helmet / himalayan balsam
11	<i>Lamium galeobdolon</i>	Yellow archangel
12	<i>Prunus laurocerasus</i>	Cherry laurel
13	<i>Rubus armeniacus</i>	Himalayan blackberry
14	<i>Rubus laciniatus</i>	Cutleaf blackberry
15	<i>Rumex crispus</i>	Curled dock
16	<i>Senecio jacobaea</i>	Tansy ragwort
17	<i>Solanum spp</i>	Nightshade
18	<i>Tanacetum vulgare</i>	Common tansy

5.0 SITE ANALYSIS SUMMARY

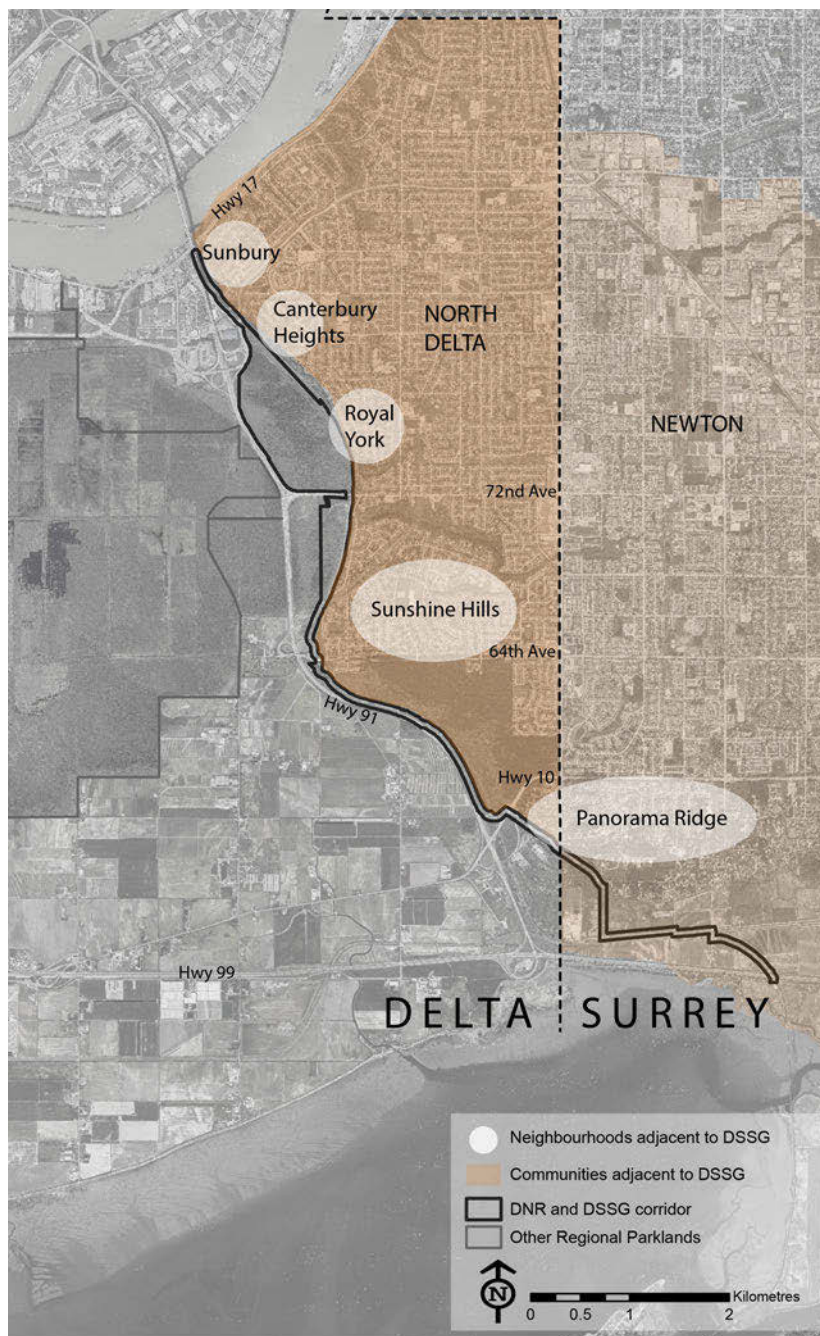


Figure 8: Nearby Communities

(City of Delta). About a third of North Delta's population is immigrants (City of Delta).

5.1. Community Context

The 2016 Census counted 2.46 million residents in Metro Vancouver (Metro Vancouver, 2017). The regional population is predicted to increase by one million residents by 2041 (Metro Vancouver, 2020).

The 2016 census shows City of Delta's 2016 population at 102,238 residents and the City of Surrey's at 517,887, with the City of Surrey experiencing over a third of all population growth in the region from 2006 to 2016 (Metro Vancouver, 2017). As the fastest growing municipality in the region, estimates show that the City of Surrey will be home to a quarter of the regional population by 2046 (City of Surrey, n.d.). The top non-official language spoken at home in both municipalities is Punjabi, spoken by 8.1% of households in the City of Delta and by 15.1% of households in the City of Surrey (Provincial Health Services Authority).

North Delta, the closest urban area to the parklands, is also the most populated area within the City of Delta, with about 60,000 residents, a large portion of whom are families (City of Delta, 2015). It is a community experiencing a modest growth rate of 4.5%

As the region and surrounding communities continue to grow, park visitation and demand is increasing. The COVID-19 pandemic led to larger increases in park visitation than in any previous year since park visits have been monitored. In 2020, overall park use increased by 38% to over 16 million visits to Regional Parks. This led to many parks being at capacity during peak times (i.e. full parking lots early and throughout the day, overflowing parking onto city streets, busy trails and day use areas, etc.), highlighting the need for more parks and more park facilities in the region, along with the need to ensure park ecosystems are protected from impacts of increased park use.

5.2. Delta South Surrey Greenway Visitation

DSSG receives on average 80,000 visits per year. By comparison to other regional greenways, DSSG is busier than the Seymour River Greenway which receives only half the visitation of the DSSG and less busy than the Pitt River Greenway which receives over three times the visitation of the DSSG. While DSSG is used year round, park use peaks in late spring and early summer months. During the COVID-19 pandemic, greenway use was 20% higher in 2020 than in 2019, receiving 87,000 visits. Traffic control was also required in 2020 to manage the parking at Mud Bay Park on peak visitation days. Mud Bay Park, managed by the City of Surrey, is one of the starting points for the DSSG.

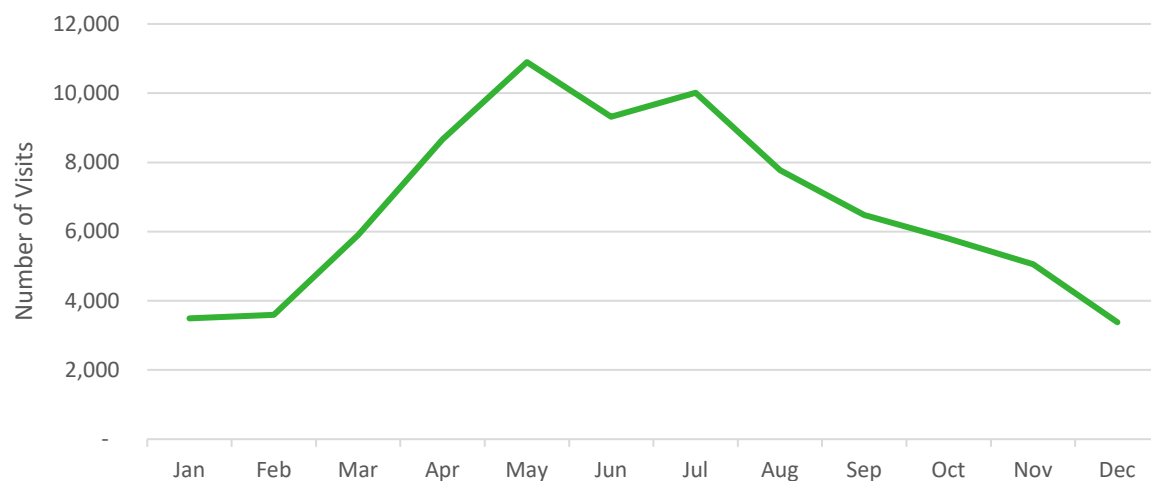


Figure 9: 2016 to 2020 Average Monthly Visitor Use at DSSG

5.3. Connection to Adjacent Lands

The planning process for DNR and DSSG should consider opportunities to connect neighbouring protected areas, parks, and greenways along the DSSG corridor. Neighbouring protected areas and parks adjacent to the DSSG include the səwq̓'eqsən Place of Learning and Recognition Area on the Fraser River; City of Delta Parks (Blake Drive Park Reserve, Cougar Canyon Environmental Reserve, Westview Park, and Watershed Park); and City of Surrey Parks (Deltaview Park, Joe Brown Park, and Mud Bay Park).

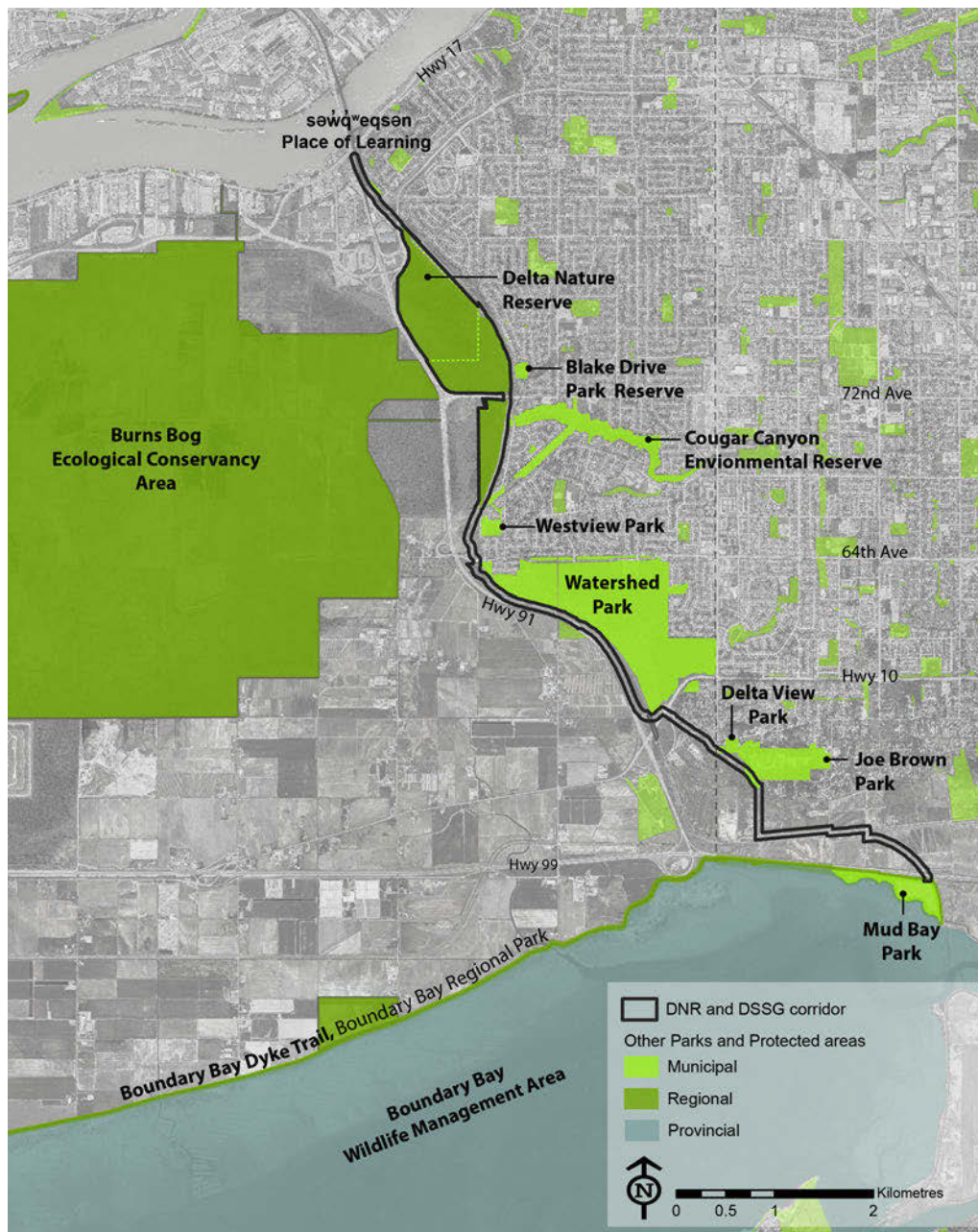
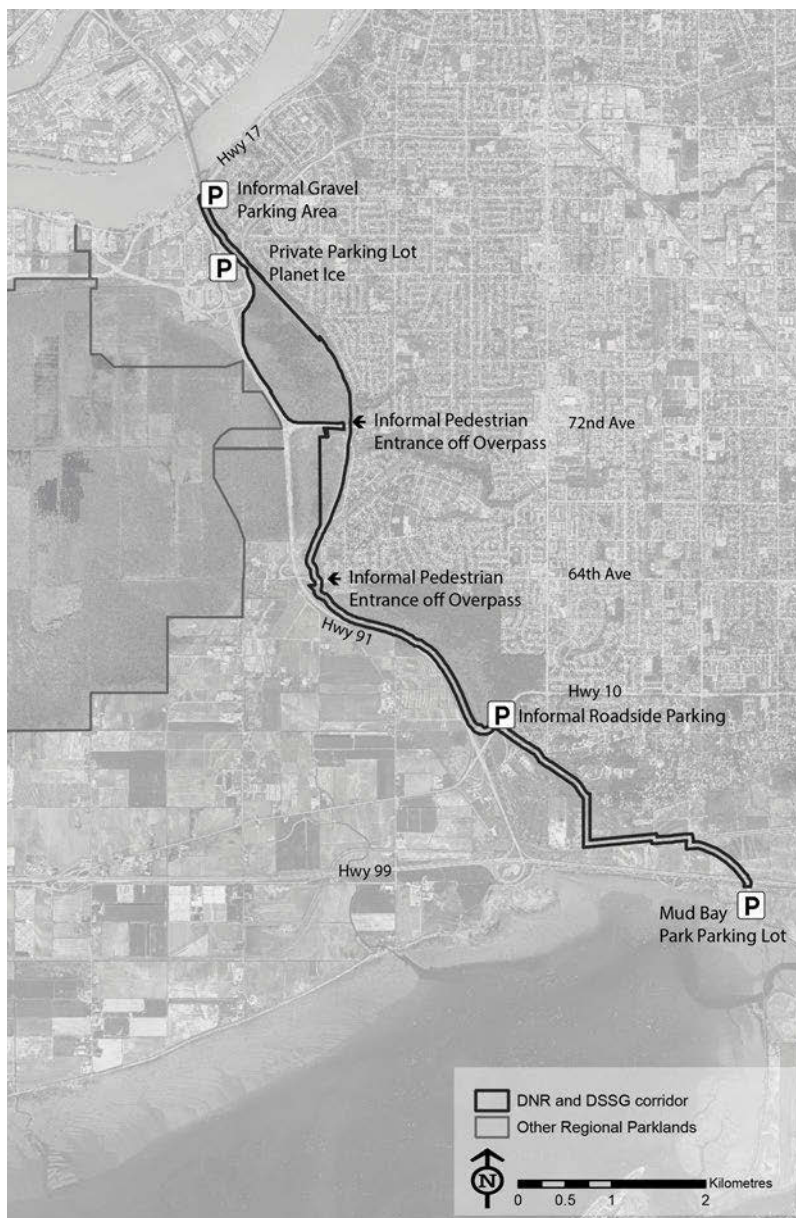


Figure 10: Adjacent Parks and Protected Areas

5.4. Access

Parking at Mud Bay Park is the only publicly maintained parking lot along the DSSG. Three additional parking areas that provide informal access to the DSSG and DNR: a gravel lot under the Alex Fraser Bridge, a private parking lot at Planet Ice, and roadside parking under a Highway 10 overpass that also provides access to Watershed Park, a City of Delta Park.

In addition to access from these parking areas, pedestrian access to the DSSG is currently possible from the 64th and 72nd Avenue overpasses. These overpasses connect the DSSG with neighbourhoods in North Delta.



A number of informal trails have been built to connect visitors to the DSSG and DNR from adjacent neighbourhoods. These trails are outside of the regional park lands. The trails include boardwalks, unsanctioned bridges over the Northeast Interceptor Canal, and unauthorized rail crossings. This rail corridor has been used by passenger as well as freight trains.

Figure 11: Access Points

5.5. Archaeology

The DNR, DSSG, and lands in the BBECA east of Highway 91 are within the shared territories of many First Nations, as listed in Section 2.0. While there are no recorded archaeological sites within these lands, there is potential for archaeological sites to be found given past occupation of these lands and the presence of several archaeological sites located nearby. Archaeological work will be required as part of park planning and site design, and will be done in communication with local First Nations.

5.6. Existing Amenities

Boardwalk and Educational Signage

The DNR is a park site featuring about 2 kilometres of boardwalks – a trail loop, with a connector trail and a viewpoint of a partial sunken tractor. Volunteers built these boardwalks, which were later managed by City of Delta. In Fall 2020, management of the DNR became a Metro Vancouver responsibility.

The boardwalks feature benches, educational signage, and pullout areas for groups. Many boardwalk sections have significant decay and have reached the end of their lifespans. Metro Vancouver spent approximately \$100,000 in December 2020 to replace 145 boards and to add no-slip treatment. The extent of the repairs is only to ensure public safety until a full replacement can be achieved. A new section of boardwalk was built by the Ministry of Transportation and Infrastructure as part of the highway expansion in 2020. Park planning will review boardwalk layout in order to consider park ecosystems, education programs, and visitor experience.

Park Partners

The Burns Bog Conservation Society (BBCS) was established in 1988 to work towards protection of Burns Bog. Currently the BBCS provides education and stewardship, inviting school groups and the public to join them in the DNR to learn about Burns Bog. In the summer months, the BBCS provides children's day camps at the DNR. The BBCS uses a fenced area with a trailer in the DNR to facilitate education programs and site tours, along with their annual Earth Day Pilgrimage and Jog for the Bog events (Burns Bog Conservation Society, n.d.).

The Cougar Creek Streamkeepers (CCS) is a volunteer group that works to protect and enhance stream health of Cougar Creek and the Northeast Interceptor Canal. CCS conducts stream monitoring, improves instream and streamside habitat, releases salmon, builds rain gardens, removes invasive species, and collects litter in the stream corridor. The CCS works with other community groups and the public to complete its projects and maintain a network of rain gardens in the Cougar Creek watershed area (Cougar Creek Streamkeepers.ca, n.d.).

Operational Greenway

The majority of the operational portion of DSSG has gravel surfacing, with a short paved greenway section along a shared roadway. The envisioned extension of the DSSG from 64th north to the DNR is currently a service road with varied surfacing. Short sections are paved, while the remainder is gravel or natural surface. There are points of erosion and ruts along this service road. The gravel sections have varying sizes of gravel, which can be a hazard for cyclists and walkers, and is a barrier to universal accessibility.

Washrooms

There is a scarcity of washroom facilities along the DSSG, with the only washroom being a pit toilet at Mud Bay Park. There are also washroom facilities uphill from the DSSG at nearby municipal parks along the corridor.

5.7. DSSG Property Interests

Tenure is incomplete for the DSSG north of 64th Avenue. For the greenway component of this project, route alignment, connectivity, and tenure options will be considered. The maps in this document show the conceptual corridor for the DSSG, including areas where tenure is required.

5.8. DSSG Corridor Landscapes

The extension of the DSSG north from 64th Avenue will connect the DNR and BBECA to the operational portion of the DSSG, creating a connection from Mud Bay Park on Boundary Bay to the Alex Fraser Bridge, and potentially to the Fraser River. The landscape along the greenway corridor varies, giving park visitors opportunities to experience different types of ecosystems. Mud Bay Park provides expansive views of Boundary Bay. From here, the DSSG meanders north through an agricultural area of fields with forest patches to a railway overpass. On the other side of the railway overpass, the DSSG is bordered by forest to the east and the South Surrey Interceptor and Highway 91 to the west. Just south of 64th Avenue, the DSSG enters forests and bog forest landscapes which it follows to the Alex Fraser Bridge. Cougar Creek runs alongside the DSSG from just south of 72nd, north to the Alex Fraser Bridge.



1 Fraser River



2 Delta Nature Reserve



3 Service Road + Canal Adjacent to DNR



4 Former Peat Plant Industrial Site



5 South Surrey Interceptor Service road



6 Adjacent to Highway 91



7 Railway Overpass



8 Agricultural Area



9 Mud Bay

Figure 12: DSSG Corridor Landscapes

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MANAGEMENT PLAN DEVELOPMENT PROCESS



Phase 1 Engagement Methods and Timing

Phase 1 engagement will focus primarily on engaging with First Nations, the City of Delta and stakeholders with less focus on engaging the public. Public engagement in phase 1 will include a website with a feedback form and in-park engagement opportunities. Public engagement in phase 2 will be more robust, providing more opportunities for engaging with the public and receiving input and feedback.

In order to engage with the public, First Nations and identified stakeholders, the following engagement methods are being proposed for phase 1 engagement:

Method	Purpose	Timing
Metro Vancouver Website	Provide up to date information about the project and engagement process, including a project video	Ongoing beginning Spring 2021
Letter to First Nations	Provide notification that engagement is beginning, provide information on opportunities to engage.	Spring 2021
Targeted Meetings	Provide opportunities for meetings with City of Delta, City of Surrey, First Nations, partners, and stakeholders to share process, identify issues, and solicit feedback. Given current restrictions, meetings will be virtual.	Spring 2021
On-site public engagement	An opportunity for in-park physically distanced engagement at a few locations within the project area and adjacent parks; engagement will share process, identify issues, and solicit feedback.	Summer 2021
Online Feedback Form	An opportunity for stakeholders and the public to provide input.	Summer 2021

To: Regional Planning Committee

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

Date: March 26, 2021 Meeting Date: April 9, 2021

Subject: ***Metro 2050* Draft Policy Language – Goal 3: Protect the Environment and Respond to Climate Change Impacts and the Implementation Section**

RECOMMENDATION

That the MVRD Board receive for information the report dated March 26, 2021, titled “*Metro 2050* Draft Policy Language – Goal 3: Protect the Environment and Respond to Climate Change Impacts and the Implementation Section”.

EXECUTIVE SUMMARY

Metro Vancouver staff, working with the *Metro 2050* Intergovernmental Advisory Committee, have developed draft content for *Metro 2050*’s Goal 3: Protect the Environment and Respond to Climate Change Impacts (Goal 3) and the Implementation Section. The content was prepared based on the MVRD Board endorsed policy recommendations for the Environment, Climate Change, and Implementation Policy Reviews.

The proposed changes to Goal 3 include:

- the addition of a Sensitive Ecosystem Inventory map with associated policies;
- a collective vision for ecosystems with aspirational regional targets for land protection (50%) and tree canopy cover (40%);
- new policies and tools to support the protection of important ecosystems, urban forest and invasive species management, and consideration of ecosystem services;
- better connection of local policies to the regional greenhouse gas emissions reduction targets;
- policies that seek to protect existing communities from natural hazard risks, and encourage new growth in lower risk areas; and
- policies to integrate emergency management, utility planning, and climate change adaptation principles when preparing land use and transportation plans.

The proposed changes to the Implementation section include:

- replacing the requirement for a regional Public Hearing for Type 2 amendments with alternative forms of public engagement; and
- policies to guide the implementation of new directions identified in the five Goals sections of *Metro 2050*.

PURPOSE

To provide the Regional Planning Committee and MVRD Board with the opportunity to review and comment on the draft content of Goal 3 and the Implementation section of *Metro 2050*, the updated regional growth strategy.

BACKGROUND

Between September 2020 and April 2021 the Regional Planning Committee and MVRD Board endorsed or received the recommended policy directions of all 11 *Metro 2040* Policy Reviews. The draft strategies contained in Goal 3 have been prepared based on the directions associated with the Environment and Climate and Natural Hazards policy reviews (Reference 1). Metro Vancouver staff have been working through the strategies of Goal 3 with the members of the *Metro 2050* Intergovernmental Advisory Committee, and they are now ready for the Regional Planning Committee and MVRD Board review.

***METRO 2050* INTERGOVERNMENTAL ADVISORY COMMITTEE**

The *Metro 2050* Intergovernmental Advisory Committee (IAC) is a staff advisory committee comprising planning directors from Metro Vancouver member jurisdictions, adjacent regional districts, TransLink, the Ministry of Municipal Affairs, First Nations from within the region, the Vancouver Airport Authority, the Port of Vancouver, the Agricultural Land Commission, and select post-secondary institutions. Establishing an IAC is a legislative requirement under the *Local Government Act* when creating or updating a regional growth strategy, and is intended to advise on its content and implementation.

The *Metro 2050* IAC held its first meeting early in 2020, and has been meeting monthly starting in January of this year to work through draft policy language goal by goal. Staff acknowledge and appreciate the constructive dialogue, comments and input from the many partner agencies and organizations that have been involved to date, to help make *Metro 2050* an accurate reflection of the regional federation's shared vision to manage growth coming to the region.

The content of Goal 3 has been reviewed by the IAC, but at the time of writing of this report, the comment period had not yet ended. Therefore, while the Goal 3 draft content attached to this report does not include IAC comments (Attachments 1 – 7), IAC members' comments will be considered and integrated into the draft content in the coming weeks. The Implementation section has been reviewed by the IAC and their comments have been incorporated (Attachment 9).

***METRO 2050* GENERAL CHANGES**

A 'marked up' version of *Metro 2040* has been prepared for ease of communicating the proposed policy changes (Attachments 1 to 7, and 9). The column on the right-hand side of the attachments explains the rationale for any proposed wording changes and, where applicable, the previous policy action reference number from *Metro 2040* is noted. New policies are highlighted as red text. Where appropriate, staff have proposed minor 'housekeeping' changes to text throughout to provide additional clarity, consistency, or update terminology as needed. Some general changes that are being applied to the overall content include:

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

DRAFT METRO 2050 - GOAL 3

Although *Metro 2050* is an update and not a new regional growth strategy, staff are recommending fairly significant changes to Goal 3 to reflect the pressing need to respond to the climate crisis and to ensure that ecosystems remain healthy so that current and future generations continue to benefit from the essential services nature provides, such as carbon storage, fresh water, clean air, food, mental and physical health. These changes stem from input and feedback from member jurisdictions and other stakeholders. Definitions of Key Terms used in Goal 3 are provided in Attachment 8 to support the review.

The draft version of Goal 3 includes new and enhanced policy language that support the protection of important ecosystems, reduce greenhouse gas emissions, and increase the resilience of communities to climate change and natural hazards. The draft of Goal 3 also includes:

- clarification of the intended uses within the Conservation and Recreation regional land use designation and tracking of ecosystem losses and gains in Natural Resource Areas (Strategy 3.1);
- a collective vision for ecosystems with aspirational land protection (50%) and tree canopy cover targets (40%);
- the addition of a Sensitive Ecosystem Inventory map with associated policies;
- supportive policies to connect a regional green infrastructure network, consider ecosystem services, and manage urban forests and invasive species (Strategy 3.2);
- updated policies for the provincial and federal governments and their agencies and member jurisdictions based on best practices in the buildings and energy sector;
- strengthened policy language to better connect member jurisdiction land use and transportation policies to the regional greenhouse gas emissions reduction targets;
- an expanded scope for Metro Vancouver policies to work with other stakeholders on climate change and natural hazards resilience challenges, and new advocacy actions to the provincial and federal governments and their agencies;
- clarified policies for member jurisdictions to distinguish between protecting existing communities from natural hazard risks and encouraging new growth in lower risk areas;
- supportive policies to integrate emergency management, utility planning, and climate change adaptation principles when preparing land use and transportation plans; and
- identifying major climate change impacts and natural hazards affecting the Metro Vancouver region.

DRAFT METRO 2050 - IMPLEMENTATION

The Implementation Section of the regional growth strategy includes the procedures for administering the strategy, including strategies pertaining to developing Regional Context Statements, making amendments to the regional growth strategy, and provisions for municipal flexibility. They also describe the roles and relationships between different entities such as TransLink. Proposed changes to the Implementation Section (Attachment 9) are largely administrative and reflect recent discussions and decisions at the Regional Planning Committee and MVRD Board regarding the *Metro 2040* Implementation Policy Review recommendations (Reference 1). The key changes proposed in the draft Implementation section include:

- replacing the requirement for a regional Public Hearing for Type 2 amendments with alternative forms of meaningful public engagement;
- updating references to *Local Government Act* sections throughout;
- clarifying the requirements for Electoral Area A, which are different than other member jurisdictions;
- adding references to a new Trade-Oriented lands overlay;
- adding a new section further defining the roles and responsibilities of TransLink, based on the *South Coast British Columbia Transportation Authority Act*;
- providing additional clarity regarding Regional Context Statements, Special Study Areas, implementation guidelines, and regional sewerage area extension provisions; and
- adding a new glossary of key terms used throughout *Metro 2050*.

It is noted that one of the recommendations of the *Metro 2040* Industrial and Mixed Employment policy review proposed altering the amendment type for a regional land use designation change for Industrial lands from a Type 2 instead of a Type 3. This proposal was considered by MVRD Board at its meeting on February 26, 2021, and the Board determined not to pursue this amendment. As a result, it is not included in the draft Implementation section attached to this report.

NEXT STEPS

Staff anticipate receiving comments and revisions on the draft Goal 3 content from the *Metro 2050* Intergovernmental Advisory Committee in the coming weeks. In May 2021, staff will be presenting a staff report on Goals 4 and 5 to the Regional Planning Committee and MVRD Board for review.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

There are no financial implications to this report; it was undertaken as part of Regional Planning's regular work program and Board-approved 2021 Regional Planning budget.

CONCLUSION

Metro Vancouver staff, with the support of the *Metro 2050* Intergovernmental Advisory Committee, are currently drafting new and amended content for *Metro 2050*, by goal area, based on the MVRD Board endorsed policy review recommendations. On March 5, 2021 the Regional Planning Committee

received the draft content for Goals 1 and 2, and the draft policy content for Goal 3 and the Implementation Section are now being presented for discussion. The draft strategies of *Metro 2050* build on the successes of *Metro 2040*, using the existing policy content as a ‘base’ to make improvements and enhancements to further the integration of land use and transportation, protect important lands, and support the effective implementation of the shared regional vision.

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

Attachments (44627734)

1. *Metro 2050* Draft Goal 3, Designations and Overlays
2. *Metro 2050* Draft Goal 3, Protect the Environment and Respond to Climate Change and Natural Hazards
3. *Metro 2050* Draft Goal 3, Strategy 3.1
4. *Metro 2050* Draft Goal 3, Strategy 3.2
5. *Metro 2050* Map 10 – Sensitive Ecosystem Inventory
6. *Metro 2050* Draft Goal 3, Strategy 3.3
7. *Metro 2050* Draft Goal 3, Strategy 3.4
8. *Metro 2050* Draft Goal 3, Key Terms
9. *Metro 2050* Draft Implementation Section

References

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

44346165

Section D Regional Land Use Designations and Overlays (GOAL 3 CONTENT ONLY) (Metro 2040 p9/10)

Proposed Metro 2050 Text	Rationale for Change
Non-Urban Land Use Designations	
<p>Conservation and Recreation</p> <p>Conservation and Recreation areas are intended to protect significant ecological and recreation assets, including: drinking water supply areas, environmental conservation areas, wildlife management areas and ecological reserves, forests, wetlands, riparian areas, major parks and outdoor recreation areas (e.g. ski hills and other tourist recreation areas).</p>	<p>Minor revisions to ensure consistency with uses listed under revised policy 3.1.9 b), as per Environment Policy Review Recommendation #1 (to clarify uses in the Conservation and Recreation regional land use designation). Changed 'drinking watersheds' to 'drinking water supply areas' as requested by Metro Vancouver Water Services staff.</p>
Regional Overlays	
<p>Natural Resource Areas Overlay</p> <p>Natural Resource Areas are intended to illustrate existing approved natural resource uses within the Conservation and Recreation regional land use designation that are not entirely consistent with the intent of the designation, but continue to reflect its long term intent. These uses include a landfill; quarries; lands with active forest tenure managed licenses; and wastewater and drinking water treatment facilities.</p>	<p>Environment Policy Review Recommendation #1 was to clarify the Conservation and Recreation regional land use designation, including recognition of existing, provincially-approved natural resource extraction. The Natural Resource Areas overlay will assist with tracking and reporting ecosystem losses/gains within the Conservation and Recreation designation and would be updated by Metro Vancouver every six years in alignment with other regional ecological health datasets (e.g. land cover, Sensitive Ecosystem Inventory, canopy cover). Map 8 (Conservation and Recreation Areas) will be revised to show the Natural Resource Areas overlay.</p>

44627734

Goal: 3 Protect the Environment and Respond to Climate Change and Natural Hazards

PREAMBLE (p33)

Proposed Metro 2050 Text	Rationale for Change
Metro Vancouver has a spectacular natural environment. Many of Metro Vancouver's ecosystems have global significance, providing both internationally-important fish habitat and key feeding and resting points for migratory birds along the Pacific Flyway. The region's forests, fields, coastal and intertidal areas, wetlands, and watercourses together are integral pieces of a habitat network for birds, fish, and other wildlife. Indigenous peoples, whose territories fall within this region, have stewarded these lands, waters, and the ecosystems they support since time immemorial.	Minor changes. New wording to reflect ancestral and present day stewardship by Indigenous peoples.
Although nature is critically important in its own right, these diverse mountain, coastal, and river areas also provide the region's residents with essential ecosystem services such as fresh water, clean air, pollination, indigenous food and medicines, flood control, cooling, carbon storage, and opportunities for tourism, recreation, cultural and spiritual enrichment, and mental respite. Climate change, development, invasive species, and other human-induced pressures are causing ecosystem change and loss in many areas, which reduces nature's capacity to provide these life-sustaining services. If planned, designed, and built in harmony with nature, communities will be healthier and more resilient over the long term.	Significantly reworded to include: - ecosystem services, including indigenous food, physical and mental health, and climate benefits from the natural environment, and - a reality check statement about ecosystem change and loss.
The key tenets of the regional growth strategy, such as the ongoing focus on urban containment, and land use patterns that support sustainable transportation options and carbon storage opportunities in natural areas , are critical for the region to address climate change. This section contains a strategy and associated policies that support the regional commitment to reach carbon neutrality by the year 2050. By then, climate change is expected to have cause warmer temperatures, a reduced snowpack, increasing sea levels, and more intense and frequent drought and rainfall events. An additional strategy aims to improve resilience to these climate change impacts, since many of the region's natural hazards will be worsened by a changing climate.	Updated to delineate more clearly between Strategy 3.3 (GHG emissions reduction) and 3.4 (resilience to climate change and natural hazards), and to emphasize the interconnections between climate change and natural hazards.
Strategies to achieve this goal are: 3.1 Protect Conservation and Recreation lands 3.2 Protect, restore, and connect ecosystems 3.3 Encourage land use, infrastructure, and settlement patterns that reduce energy consumption and greenhouse gas emissions, create carbon storage opportunities , and improve air quality 3.4 Encourage land use, infrastructure, and settlement patterns that improve the ability to withstand climate change impacts and minimize natural hazard risks	Slight rewording of Strategy 3.2 to focus on ecosystems (compared to 'natural features and their connectivity'). The addition of "settlement patterns" to the title of Strategy 3.3 and 3.4 emphasizes the carbon storage benefits that are preserved in the region's natural areas when growth and development occurs in infill areas, as well as the influence of land use and growth management on resilience outcomes.

Goal: 3		
Strategy 3.1		
#	Proposed Metro 2050 Text	Rationale for Change
3	Protect the Environment and Respond to Climate Change and Natural Hazards	Added 'Natural Hazards' to raise the profile of new policies under 3.4.
3.1	Protect Conservation and Recreation lands	
	Strategy Rationale: The Conservation and Recreation regional land use designation is intended to help protect significant ecological and recreation assets throughout the region. Protecting these assets from development will ensure that these lands remain productive, resilient, and adaptable, providing vital ecosystem services that support both humans and wildlife, while also safeguarding communities from climate change and natural hazard impacts.	Each Strategy includes a new rationale.
	Metro Vancouver will:	
3.1.1	Direct the Greater Vancouver Sewerage and Drainage District (GVS&DD) to not allow connections to regional sewerage services to lands with a Conservation and Recreation regional land use designation. Notwithstanding this general rule, in the exceptional circumstances specified below, the MVRD Board will advise the GVS&DD Board that it may consider such a connection for existing development or for new development where, in the MVRD Board's opinion, that new development is consistent with the underlying Conservation and Recreation regional land use designation and where the MVRD Board determines either: a) that the connection to regional sewerage services the only reasonable means of preventing or alleviating a public health or environmental contamination risk; or b) that the connection to regional sewerage services would have no significant impact on the strategy to protect lands with a Conservation and Recreation regional land use designation.	Minor updates to organization name.
3.1.2	Implement the Metro Vancouver <i>Regional Parks Plan</i> and the <i>Regional Parks Land Acquisition 2050 Strategy</i> and work collaboratively with member jurisdictions to identify, secure and enhance habitat and park lands, and buffer park and conservation areas from activities in adjacent areas.	Update to plan titles.
3.1.3	For the Greater Vancouver Water District and the GVS&DD, avoid ecosystem fragmentation and loss on lands with a Conservation and Recreation regional land use designation when developing and operating infrastructure, but where unavoidable, mitigate the impacts, including ecosystem restoration and striving for no net ecosystem loss.	New policy for the GVWD and GVS&DD consistent with <i>Metro 2040</i> Action 3.1.5 for the Province, utility companies, and TransLink. This policy would apply to new major infrastructure projects within the Con/Rec designation.
3.1.4	Monitor ecosystem gains and losses on lands with a Conservation and Recreation regional land use designation and the Natural Resource Areas therein, as identified on the Conservation and Recreation Areas Map (Map 8).	New proposed policy. Environment Policy Review Recommendation #1 was to clarify appropriate uses within the Con/Rec designation, including recognition of existing

		provincially or federally-approved natural resource extraction (timber harvesting, gravel mining, a landfill, and water and wastewater treatment plants), which would be tracked through a new Natural Resource Areas overlay (defined in Section D).
3.1.5	Advocate to the Province and its agencies, utility companies, and TransLink to avoid ecosystem fragmentation on lands within a Conservation and Recreation regional land use designation when developing and operating utility and transportation infrastructure, but where unavoidable, to mitigate the impacts, including ecosystem restoration and striving for no net ecosystem loss.	Edits to <i>Metro 2040</i> Policy 3.1.5. All actions for non-signatories will change to advocacy actions for Metro Vancouver. Strengthened language since Metro Vancouver is now advocating.
3.1.6	Advocate to the Province and its agencies to actively manage provincially-owned land within a Conservation and Recreation regional land use designation, and effectively buffer these lands from activities in adjacent areas , with the intent of enhancing ecosystem integrity and public recreational opportunities.	Edits to <i>Metro 2040</i> Policy 3.1.6 to increase consistency, add buffering, and replace ‘natural assets’ with ‘ecosystem integrity’ (which includes function and biodiversity).
3.1.7	Advocate to the Federal Government, the Province, and their agencies to: a) recognize the Conservation and Recreation regional land use designation and ensure that their activities within or adjacent to these areas are consistent with the intent of the land use designation; b) consult and collaborate with all levels of government, First Nations , and others in the planning of lands with a Conservation and Recreation regional land use designation, including during the review of future natural resource extraction projects.	Edits to <i>Metro 2040</i> Policy 3.1.7 to include First Nations, and improve understanding and tracking for the Natural Resource Areas overlay.
3.1.8	Accept Regional Context Statements that protect land within the Conservation and Recreation regional land use designation, that meet or work towards Action 3.1.9.	Minor wording changes.
	Member jurisdictions will: Adopt Regional Context Statements that:	
3.1.9	a) identify Conservation and Recreation areas and their boundaries on a map generally consistent with the Regional Land Use Designations map (Map 2);	No change.
	b) include policies that support the protection of lands within a Conservation and Recreation land use designation, generally consistent with limiting the permitted uses on these lands to the following: i) drinking water supply areas; ii) environmental conservation areas; iii) wildlife management areas and ecological reserves; iv) forests; v) wetlands (e.g. freshwater lakes, ponds, bogs, fens, estuarine, marine, freshwater, and intertidal ecosystems); vi) riparian areas (i.e. the areas and vegetation that surrounds wetlands, lakes, streams, and rivers); vii) major parks and outdoor recreation areas; viii) uses within those areas that are appropriately located, scaled, and consistent with the intent of the	Environment Policy Review Recommendation #1 called for the clarification of the definition of appropriate uses and activities within the Con/Rec designation. These edits ensure consistency with the definition of Con/Rec on <i>Metro 2040</i> Page 10. Metro Vancouver Water Services staff requested replacement of ‘public service infrastructure, including the supply of high quality drinking water’ with the term ‘drinking water supply areas’. Public water infrastructure would be included in the Natural Resource Areas

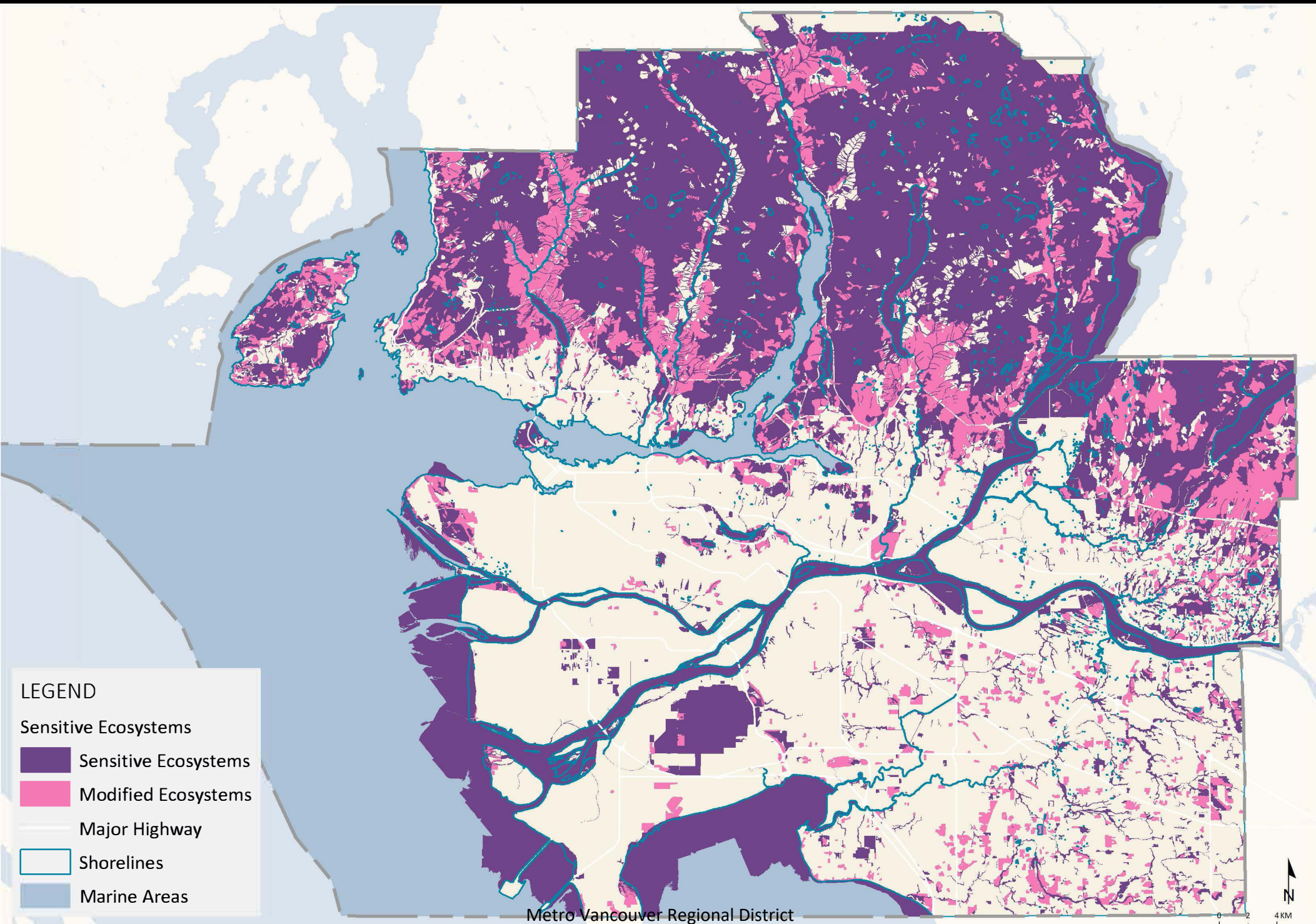
	<p>designation, including:</p> <ul style="list-style-type: none"> • education, research and training facilities, and associated uses that serve conservation and/or recreation users, • commercial uses, tourism activities, and public, cultural, or community amenities, and • limited agricultural use, primarily soil-based; and <p>ix) ecosystems not covered above that may be vulnerable to climate change and natural hazard impacts, or that provide buffers to climate change impacts for communities;</p>	<p>overlay. Wetlands and riparian areas are defined for clarity.</p> <p>ix - The <i>Metro 2040</i> Climate Policy Review recommended the inclusion of ecosystems at risk from climate change impacts within Con/Rec. Additional areas would be informed by future risk assessments (see Strategy 3.4).</p>
	<p>c) include policies that:</p> <p>i) protect the integrity of lands within a Conservation and Recreation land use designation from activities in adjacent areas by requiring edge planning, and introducing measures such as physical buffers or development permit requirements; and</p>	<p>Edits to <i>Metro 2040</i> policy 3.1.4 c) that mimic <i>Metro 2040</i> policy 2.3.6 b) iv) for agricultural lands. Edge management, buffers, and DPAs are effective planning strategies to protect ecosystem integrity.</p>
	<p>ii) encourage the consolidation of small parcels, and prevent subdivision and fragmentation of lands within a Conservation and Recreation land use designation.</p>	<p>New policy that mimics <i>Metro 2040</i> policy 2.3.6 b) ii) for agricultural lands and associated changes for <i>Metro 2050</i>. New policy, mimicking an existing policy action for agricultural lands. Large, connected, and biodiverse ecosystems are generally healthier and more resilient to climate change impacts.</p>

Goal: 3		
Strategy 3.2		
#	Proposed Metro 2050 Text	Rationale for Change
3	Protect the Environment and Respond to Climate Change and Natural Hazards	Added 'Natural Hazards' to raise the profile of new policies under 3.4.
3.2	Protect, restore, and connect ecosystems	Updated and simplified language.
	Strategy Rationale: This Strategy establishes a collective vision for ecosystems across the region, recognizing the scientific evidence that 'Nature Needs Half' of the land base to function for the benefit of all life and support human well-being. The vision can be realized by working together to protect, enhance, and restore ecosystems, strategically linking green spaces into a region-wide network that enables the flow of ecosystem services and movement of wildlife across the landscape. Actions to enhance tree canopy cover in urban areas will improve community resilience by intercepting rainwater, moderating the urban heat island effect, and improving health outcomes.	Each Strategy includes a new rationale.
	Metro Vancouver will:	
3.2.1	Implement the strategies and actions of the regional growth strategy that contribute to regional targets to: a) increase the area of lands protected for nature to 50% of the region's land base by the year 2050, in support of the Nature Needs Half vision; and	New proposed policy. Environment Policy Review Recommendation #2 was to "include a new regional vision for protecting, enhancing, and restoring ecosystems by setting aspirational regional targets", and the International 'Nature Needs Half' vision was proposed as an option. Further analysis has revealed that roughly 40% of the region's land base is currently protected as conservation or wildlife management areas, municipal or regional parks. It would be feasible to protect 50% of the land base, while also accommodating planned greenfield urban and industrial development, if the remainder of the sensitive and modified ecosystems from the Sensitive Ecosystem Inventory (SEI), and additional small young forested areas (1-5 ha) are protected from development.
	b) Increase the total tree canopy cover within the Urban Containment Boundary from 32% to 40% by the year 2050.	New proposed policy. Environment Policy Review Recommendation #5 was to include policies regarding emerging environmental planning priorities, including urban forest management. Canopy cover in the UCB is currently 32% and a 40% target is achievable without all member jurisdictions needing to meet 40%. For those below 40%,

		increases would be needed. Those above 40% would need to retain their canopy cover. Achieving 40% canopy cover within the Urban Containment Boundary would increase community resiliency by reducing urban temperatures and associated heat-related morbidity and mortality, improving mental health, and intercepting rainwater.
3.2.2	<p>Implement the Metro Vancouver <i>Ecological Health Framework</i>, including relevant actions to:</p> <p>a) Collect and maintain data, including the Sensitive Ecosystem Inventory, tree canopy cover, imperviousness, and carbon storage datasets; report on gains/losses and climate-related impacts on ecosystems; and share these datasets with member jurisdictions; and</p> <p>b) incorporate ecosystem services into Metro Vancouver’s corporate planning and investments, and provide regionally-appropriate guidance on methodologies, tools and decision-making frameworks.</p>	<p>New proposed policies. Environment Policy Review Recommendations #4 to incorporate the SEI and #5 to reflect emerging environmental planning priorities (urban forestry, invasive species, ecosystem services) in <i>Metro 2050</i>. Provincial staff suggested including key relevant actions for MVRD from the Ecological Health Framework (EHF), which identifies Metro Vancouver’s role in protecting and enhancing ecological health as it relates to its services and functions. Regional Planning’s main roles noted in the EHF are data collection and ecosystem services guidance.</p>
3.2.3	<p>Manage Metro Vancouver assets and collaborate with member jurisdictions, First Nations, and other agencies to:</p> <p>a) protect, enhance, and restore ecosystems as identified on the Sensitive Ecosystem Inventory Map (Map 10);</p> <p>b) identify a regional green infrastructure network that connects ecosystems and builds on existing local networks, while maximizing the climate adaptation, biodiversity, and human health benefits; and</p> <p>c) prepare Guidelines to support the implementation of a regional green infrastructure network and to assist with the protection, enhancement, and restoration of ecosystems as identified on Sensitive Ecosystem Inventory Map (Map 10).</p>	<p>Revised <i>Metro 2040</i> policy 3.2.2 to replace the Map 10 ‘Natural Features and Land Cover’ with the SEI, as per Environment Policy Review Recommendation #4 to incorporate the SEI.</p> <p>New proposed policy. Collaboration toward a regional green infrastructure network was Environment Policy Review Recommendation #3. Green infrastructure includes the natural assets (e.g. forests, wetlands, soil), enhanced assets (e.g. rain gardens, bioswales, urban trees), and engineered assets (e.g. green roofs, permeable pavement) that collectively provide society with ecosystem services.</p> <p>New proposed policy to support Environment Policy Review Recommendations #3 and #4.</p>
3.2.4	<p>Work with local First Nations communities to:</p> <p>a) increase understanding of Indigenous ecological knowledge, and share information about environmental research, policy development, and planning best practices; and</p> <p>b) find joint stewardship and restoration opportunities on Metro Vancouver sites, and expand access to sustainably cultivate and harvest plants for cultural purposes.</p>	<p>New proposed policies to support reconciliation.</p>

3.2.5	Advocate to the Federal Government, the Province, and their agencies to: a) enhance species-at-risk and ecosystem protection legislation that protects critical habitat, and supports restoration and biodiversity, in addition to convening a local government support network; and	<i>Metro 2040</i> policy action 3.2.9 was changed to an advocacy action for Metro Vancouver. Provincial staff recommended a revision to mention the existing local government support network.
	b) support the uptake of nature-based climate solutions, including those that protect or restore foreshore ecosystems.	This new advocacy policy was proposed through the <i>Metro 2040</i> Climate Policy Review to acknowledge the need to better protect foreshore/intertidal ecosystems that are vulnerable to coastal squeeze.
3.2.6	Accept Regional Context Statements that advance the protection, restoration, and connection of ecosystems in a regional green infrastructure network , and that meet or work towards Action 3.2.7.	Updated <i>Metro 2040</i> policy 3.2.3 with current language.
	The role of member jurisdictions is to: Adopt Regional Context Statements that:	
3.2.7	a) identify local ecosystem protection and tree canopy cover targets, and demonstrate how these targets will contribute to the regional targets in 3.2.1;	New proposed policy. Corresponding member jurisdiction policy action to support the proposed regional targets (new 3.2.1 above). Proposed policy structure is similar to <i>Metro 2040</i> policy 3.3.4a) regarding contributions toward regional greenhouse gas emission reduction targets.
	b) refer to the Sensitive Ecosystem Inventory Map (Map 10) and / or other relevant ecological datasets and include policies that: i. support the protection, enhancement, and restoration of ecosystems through measures such as land acquisition, density bonusing, development permit requirements, subdivision design, conservation covenants, land trusts, tax exemptions;	Combined <i>Metro 2040</i> policies 3.2.4 and 3.2.6. Revised <i>Metro 2040</i> policies to replace the Map 10 'Natural Features and Land Cover' with the SEI, as recommended through Environment Policy Review Recommendation #4. This Map provides a science-based inventory of the most ecologically important ecosystems across the region. The intent and policies of the underlying regional land use designations would still apply. The SEI will be updated in 2022 and the Map updated every six years thereafter.
	ii. seek to acquire, restore, and protect lands, in collaboration with adjacent member jurisdictions and other partners, that will enable ecosystem connectivity in a regional green infrastructure network;	New proposed policy. Collaboration toward a regional green infrastructure network was Environment Policy Review Recommendation #3.
	iii. discourage or minimize the fragmentation of ecosystems through low impact development practices that enable ecosystem connectivity; and	New proposed policy to support Environment Policy Review Recommendation #3 and accommodate some low impact greenfield development.
	iv. indicate how the interface between ecosystems and other land uses will be managed to maintain ecological integrity using edge planning, and measures such as physical buffers, or development permit requirements.	Modified <i>Metro 2040</i> policy 3.2.6 regarding buffering to mimic <i>Metro 2040</i> policy 2.3.6 b) iv for agricultural lands.

	<p>c) include policies that:</p> <p>i. support the consideration of ecosystem services in land use decision-making and land management practices;</p> <p>ii. enable the retention and expansion of urban forests using various tools, including but not limited to, local tree canopy cover targets, urban forest management strategies, tree protection bylaws, development permit requirements, street tree planting, and reforestation / restoration policies;</p> <p>iii. reduce the spread of invasive species by employing best practices, such as the implementation of soil removal and deposit bylaws, development permit requirements, and integrated pest management plans;</p> <p>iv. support watershed and ecosystem planning, Integrated Stormwater Management Plans, and water conservation objectives; and</p> <p>v. increase green infrastructure along the Regional Greenways Network in collaboration with Metro Vancouver, TransLink, and other partners to the Major Transit Network, community greenways, and other locations, where appropriate.</p>	<p>New proposed policies in support of <i>Metro 2040</i> Environment Policy Review Recommendation #5 to incorporate emerging environmental planning priorities (ecosystem services, urban forestry, and invasive species) into <i>Metro 2050</i>.</p> <p>Housekeeping. Combined <i>Metro 2040</i> 3.2.7 and 3.3.4 d).</p> <p>New proposed policy. Greenway policies would move to Goal 5, but this ‘greening the Greenways’ policy would remain under Goal 3.</p>
3.2.5		<i>Metro 2040</i> policy 3.2.5 regarding the Regional Greenways Network will be moved to Goal 5.
3.2.6		<i>Metro 2040</i> policy 3.2.6 regarding ecologically important systems, features, corridors and establishing buffering combined into 3.2.7 b) i and iv.
3.2.7		<i>Metro 2040</i> policy 3.2.7 regarding watershed and ecosystem planning, and ISMPs combined with 3.3.4 d) moved under new 3.2.7 c) iv.
3.2.8		<i>Metro 2040</i> policy 3.2.8 regarding TransLink’s role in the Regional Greenways Network will be moved to Goal 5.



Goal: 3		
Strategy 3.3		
#	Proposed Metro 2050 Text	Rationale for Change
3	Protect the Environment and Respond to Climate Change and Natural Hazards	Removed the word “impacts” – which is associated solely with climate change adaptation - since responding to climate change encompasses both climate change adaptation (Strategy 3.4) <i>and</i> reducing GHGs (Strategy 3.3). Added reference to natural hazards based on the title of Strategy 3.4.
3.3	Encourage land use, infrastructure, and settlement patterns that reduce energy consumption and greenhouse gas emissions, create carbon storage opportunities , and improve air quality	The amended language better reflects the full spectrum of GHG emission reduction benefits associated with the growth framework. The proposed edits also minimize confusion associated with the phrase “land use and transportation infrastructure”. Reference to <i>transportation</i> infrastructure removed given that other forms of infrastructure are referenced in this strategy. The addition of “settlement patterns” more closely aligns with the carbon storage benefits that are preserved in the region’s natural areas when growth and development occurs in infill areas.
n/a	Strategy Rationale: The tenets of the regional growth strategy are crucial for meeting the region’s commitment to reduce greenhouse gas emissions and to reach carbon neutrality by the year 2050. As described in other strategies in the regional growth strategy, this can be achieved in three key ways: by supporting growth and development patterns that enable sustainable transportation options; by encouraging higher density built forms and multi-unit developments which are typically more energy efficient than lower density alternatives; and by reducing development pressures in areas that naturally store and sequester carbon (such as conservation and agricultural areas). To supplement these important policy actions from other goal areas in the regional growth strategy, Strategy 3.3 contains the region’s greenhouse gas emissions reduction targets and associated policies.	Adding a new “strategy rationale” section after each strategy will help explain the intention the subsequent policies seek to achieve.
	Metro Vancouver will:	

3.3.1	<p>a) Implement the strategies and actions of the regional growth strategy that contribute to regional targets to reduce greenhouse gas emissions by 45 percent below 2010 levels by the year 2030 and to achieve a carbon neutral region by the year 2050.</p> <p>b) Implement the Corporate Climate Action Plan, the <i>Clean Air Plan</i>, and <i>Climate 2050</i>.</p>	<p>Figure 3 content to be re-purposed as summary content in the front matter of <i>Metro 2050</i> (exact location to be determined). Reference to Corporate Climate Action Plan added given Liquid Waste Services department recommendation to refer to carbon neutral operations. Reference to <i>Clean Air Plan</i> and <i>Climate 2050</i> added, which aligns with Recommendation 1 of the Climate Change and Natural Hazards Policy Review (specifically, alignment with <i>Climate 2050</i>).</p>
3.3.2	<p>Work with the Federal Government and the Province and their agencies, TransLink, member jurisdictions, First Nations, non-governmental organizations, energy utilities, the private sector, and other stakeholders, as appropriate, to:</p> <p>a) monitor energy consumption, greenhouse gas emissions, and air quality related to land use, buildings, industry, agriculture, and transportation;</p>	<p>Buildings, industry, agriculture, and transportation GHG emission sources are quantified in Metro Vancouver's Lower Fraser Valley Air Emission Inventory and Forecast. The amended text in this section aligns with Recommendation 3 from the Climate Change and Natural Hazards Policy Review.</p>
	<p>b) monitor carbon storage in natural areas; and</p>	<p>New policy added to reflect ongoing monitoring of carbon storage in natural areas via Metro Vancouver's Carbon Storage Inventory. The amended text in this section aligns with Recommendation 3 from the Climate Change and Natural Hazards Policy Review.</p>
	<p>c) promote best practices and develop guidelines to support local government actions that reduce energy consumption and greenhouse gas emissions, create carbon storage opportunities, and improve air quality.</p>	<p>Text amended based on recommendations from the Air Quality and Climate Change division, as well as Recommendation 4 from the Climate Change and Natural Hazards Policy Review.</p>
3.3.3	<p>Work with member jurisdictions and health authorities to advocate that health impact assessments be conducted for major transportation projects and significant development projects with an aim to minimizing public exposure to traffic-related air pollutants.</p>	<p>New policy added based on recommendation from the Air Quality and Climate Change division.</p>
3.3.4	<p>In collaboration with TransLink and member jurisdictions, establish a definition of major development proposals, which are referenced in the <i>South Coast British Columbia Transportation Authority Act</i>, to support the objective of concentrating major trip-generating uses in areas well served by transit.</p>	<p><i>Metro 2040</i> policy 3.3.5 re-framed as a new Metro Vancouver-led action. Note that this policy may have more emphasis under Goal 5.</p>
3.3.5	<p>Advocate to the Federal Government and the Province and their agencies to establish and support legislative and fiscal actions, that help the public and private sector maximize</p>	<p><i>Metro 2040</i> policy 3.3.8 re-framed as a Metro Vancouver-led advocacy action. Text amended based on recommendations from the Air Quality</p>

	<p>reductions in energy consumption and greenhouse gas emissions, and improve air quality, such as:</p> <p>a) in the building sector,</p> <ul style="list-style-type: none"> • accelerating the modernization of the BC Building Code • setting greenhouse gas performance requirements in building codes for new building construction and significant alterations to buildings • increasing incentives and financing tools for new low-carbon and resilient buildings • supporting large scale building electrification • requiring home energy labels for new and existing homes • supporting reductions in embodied emissions of buildings, and the increased use of low carbon building products • supporting programs, services and incentives for low carbon retrofit options in rental buildings that benefit building owners and tenants • incenting transit-oriented development, and • supporting, where feasible and appropriate, energy recovery, renewable energy generation and zero carbon district energy systems, and related transmission needs. 	<p>and Climate Change division, and in alignment with Recommendation 1 (specifically, alignment with <i>Climate 2050</i>) and 4 of the Climate Change and Natural Hazards Policy Review.</p>
	<p>b) in the transportation sector,</p> <ul style="list-style-type: none"> • enabling the implementation of regional transportation demand management measures, e.g. mobility pricing • setting electric vehicle charging requirements in buildings • increasing funding for sustainable transportation infrastructure and low emission travel modes, e.g. walking and cycling, and • continuing to advance stringent standards for on-road vehicle emissions and fuel carbon content. 	<p><i>Metro 2040</i> policy 3.3.8 moved here and re-framed as a Metro Vancouver-led advocacy action. Text amended based on recommendations from the Air Quality and Climate Change division, and in alignment with Recommendations 1 (specifically, alignment with <i>Climate 2050</i>) and 4 of the Climate Change and Natural Hazards Policy Review.</p>
3.3.6	<p>Accept Regional Context Statements that encourage land use, infrastructure, and settlement patterns that reduce energy consumption and greenhouse gas emissions, improve air quality, create carbon storage opportunities, and that meet or work towards Action 3.3.7.</p>	<p>Text updated to align with the proposed changes to the wording of Strategy 3.3.</p>
	<p>Member jurisdictions will:</p>	
3.3.7	<p>Adopt Regional Context Statements that:</p> <p>a) identify how local land use and transportation policies will contribute to meeting the regional greenhouse gas reduction target of 45 percent below 2010 levels by the year 2030 and achieving a carbon neutral region by the year 2050;</p>	<p>Text amended based on alignment with Climate 2050, as well as Recommendation 2 Climate Change and Natural Hazards Policy Review.</p>
	<p>b) identify policies, actions and/or strategies that reduce energy consumption and greenhouse gas emissions, create carbon storage opportunities, and improve air quality from land use, infrastructure, and settlement patterns, such as:</p>	<p>Text amended based on recommendations from the Air Quality and Climate Change division, as well as Recommendations 1 (specifically, alignment with</p>

	<ul style="list-style-type: none"> existing building retrofits and construction of new buildings to green performance guidelines or standards (e.g. BC Energy Step Code), the electrification of building heating systems, green demolition requirements, embodied emissions policies, zero carbon district energy systems, and energy recovery and renewable energy generation technologies, such as solar panels and geoechange systems, and zero emission vehicle charging infrastructure; community design and infrastructure that encourages transit, cycling, rolling and walking (e.g. direct and safe active transportation linkages to the transit system); 	<p><i>Climate 2050</i>) and 4 from the Climate Change and Natural Hazards Policy Review. The use of the word “actions” (replacing “programs”) is consistent with Local Government Act section 429-2d.</p>
	c) focus infrastructure and amenity investments in Urban Centres and Frequent Transit Development Areas, and at appropriate locations along Major Transit Growth Corridors;	Text amended to align with updated policy language in Goal 1 of <i>Metro 2050</i> .
		The core elements of <i>Metro 2040</i> policy 3.3.4 d) have been moved to Strategy 3.2 given the redundancy with <i>Metro 2040</i> policy 3.2.7.
		<i>Metro 2040</i> policy 3.3.5 re-framed as a Metro Vancouver-led action (new policy 3.3.4).
	TransLink will:	
3.3.8	Support regional air quality objectives and greenhouse gas emission reduction targets by minimizing sources from on-road transportation, and managing transit fleet and operations.	<i>Metro 2040</i> policy 3.3.6 and 3.3.7 amalgamated as new policy 3.3.8 to minimize redundancy.
		<i>Metro 2040</i> policy 3.3.6 and 3.3.7 amalgamated as new policy 3.3.8 to minimize redundancy.
		<i>Metro 2040</i> policy 3.3.8 re-framed as a Metro Vancouver-led advocacy action (new policy 3.3.5).
		<i>Metro 2040</i> Figure 3 content will be re-purposed and added to the front matter of the plan, given the reference to all goal areas.

Goal: 3		
Strategy 3.4		
#	Proposed Metro 2050 Text	Rationale for Change
3	Protect the Environment and Respond to Climate Change and Natural Hazards	Removed the word “impacts” – which is associated solely with climate change adaptation - since responding to climate change encompasses both climate change adaptation (Strategy 3.4) and reducing GHGs (Strategy 3.3). Added reference to natural hazards based on the title of Strategy 3.4.
3.4	Encourage land use, infrastructure, and settlement patterns that improve the ability to withstand climate change impacts and minimize natural hazard risks	The addition of “settlement patterns” better reflects the full influence of land use and growth management on climate change adaptation/natural hazard resilience. Settlement patterns are also referred to in relation to hazard and risk explicitly in the Local Government Act, section 4.2.8k. The proposed edits also minimize confusion associated with the phrase “land use and transportation infrastructure”. Reference to <i>transportation</i> infrastructure removed given that other forms of infrastructure are also referenced in this strategy.
n/a	Strategy Rationale: Climate change is expected to impact the Metro Vancouver region through warmer temperatures, decreased snowpack, sea level rise, longer summer drought periods, and increased precipitation in the fall, winter, and spring. The region is also exposed to multiple natural hazards, many of which are worsened by climate change. Where and how the region accommodates growth determines the degree to which communities and infrastructure are exposed to these risks. While efforts need to be made to ensure that all populations are well-equipped to address these challenges, proactive and collaborative planning can minimize risks by encouraging growth and development in more resilient areas, where feasible, and taking measures to ensure existing communities and infrastructure are resilient to current and future risks.	Adding a new “strategy rationale” section after each strategy will help explain the intention the subsequent policies seek to achieve.

	Metro Vancouver will:	
3.4.1	Incorporate climate change and natural hazard risk assessments into the planning and location of Metro Vancouver utilities, assets and operations.	No change.
3.4.2	Work with the Integrated Partnership for Regional Emergency Management, the Federal Government and the Province and their agencies, First Nations, TransLink and member jurisdictions, as appropriate, to: a) share information and data related to hazards, risks, and vulnerabilities in the Metro Vancouver region, develop a regional multi-hazard map, and coordinate priority actions to address the vulnerabilities identified, including implementation and funding strategies;	Metro 2040 Policy 3.4.6 a) and b) re-purposed as a Metro Vancouver-led action, in alignment with Recommendation 5 from the Climate Change and Natural Hazards Policy Review. The words “as appropriate” included based on recommendations from Liquid Waste Services and Water Services departments.
	b) consider climate change impacts and natural hazard risks when extending utilities and transportation infrastructure that support development;	Specific hazards and climate change impacts deleted due to the variation in hazards faced across the region, and given the proposed Table added on Page 4.
	c) support the integration of emergency management, utility planning, and climate change adaptation principles in land use plans, transportation plans, and growth management policies;	New policy added in alignment with Recommendation 6 of the Climate Change and Natural Hazards Policy Review.
	d) research and promote best practices and develop guidelines to support resilience to the impacts of climate change and natural hazards as it relates to planning and development;	Policy amended to include the words “natural hazards” based on recommendation from IPREM during summer 2020 engagement.
	e) support regional flood management and the implementation of the Lower Mainland Flood Management Strategy; and	New policy added in alignment with Recommendation 7 of the Climate Change and Natural Hazards Policy Review.
	f) research and share information related to the impacts of climate change and natural hazards on vulnerable populations, and focus resilience actions on equitable outcomes.	New policy added to consider equity as it relates to climate change adaptation and natural hazard resilience.
3.4.3	Advocate to the Federal Government and the Province and their agencies that they: a) review and improve existing provincial legislation and guidelines regarding flood hazard management at the local level and mandate the adoption of flood hazard bylaws;	Metro 2040 policy 3.4.7 d) amended and re-purposed as a Metro-Vancouver led advocacy action, and developed in alignment with Recommendation 5 of the Climate Change and Natural Hazards Policy Review.
	b) incorporate resilience considerations into building codes and standards;	New policy added in alignment with Recommendation 5 of the Climate Change and Natural Hazards Policy Review.
	c) modernize the <i>Emergency Program Act</i> with requirements for land use planning, and to consider land use implications in the development of climate change adaptation strategies; and	New policy added in alignment with Recommendations 5 and 6 of the Climate Change and Natural Hazards Policy Review.

	d) provide guidelines, programs, funding, and timely data and information to support regional and local planning for climate change impacts and natural hazards.	Metro 2040 policy 3.4.7 a) amended and re-purposed as a Metro-Vancouver led advocacy action, and developed in alignment with Recommendation 5 of the Climate Change and Natural Hazards Policy Review.
3.4.4	Accept Regional Context Statements that encourage land use, settlement patterns, transportation and utility infrastructure which improve the ability to withstand climate change impacts and minimize natural hazard risks, and that meet or work towards Actions 3.4.5, 3.4.6, 3.4.7, and 3.4.8.	Minor change to align with the proposed title for Strategy 3.4.
	Member jurisdictions will:	
3.4.5	Adopt Regional Context Statements that include policies that: a) minimize risks associated with climate change and natural hazards in existing communities through tools such as heat response plans, seismic retrofit policies, and flood-proofing policies; and b) discourage new development in current and future hazardous areas to the extent possible through tools such as land use plans, hazard-specific Development Permit Areas, and managed retreat policies, and where development in hazardous areas is unavoidable, mitigate risks.	Reference to specific hazards removed given the proposed table on Page 4. Additional edits to 3.4.5 a) and b) align with Recommendation 5 from the Climate Change and Natural Hazards Policy Review.
3.4.6	Incorporate climate change and natural hazard risk assessments into planning and location decisions for new municipal utilities, assets, operations, and community services.	Reference to community services suggested by IPREM during summer 2020 engagement, given the connection to vulnerable populations.
3.4.7	Integrate emergency management, utility planning, and climate change adaptation principles when preparing land use plans, transportation plans, and growth management policies.	New policy added in alignment with Recommendation 6 from the Climate Change and Natural Hazards Policy Review. Supports regional resiliency.
3.4.8	Adopt appropriate planning standards, guidelines, and best practices related to climate change and natural hazards, such as flood hazard management guidelines and wildland urban interface fire risk reduction principles.	New policy added to align local action with the updated Provincial roles identified in 3.4.3 a) and d), as well as the new Metro Vancouver action in 3.4.2 d). Supports regional resiliency.
		Metro 2040 policy 3.4.6 re-purposed as a Metro Vancouver-led action (new policy 3.4.2 a), in alignment with Recommendation 5 from the Climate Change and Natural Hazards Policy Review.
		Metro 2040 policy 3.4.7 a) re-purposed as part of new policy 3.4.2. a) and 3.4.3 d), in alignment with Recommendation 5 of the Climate Change and Natural Hazards Policy Review.

		<i>Metro 2040</i> policy 3.4.7 b) re-purposed as new policy 3.4.2 a) and 3.4.3 d), and the spirit of this policy is also captured in new policy 3.4.2 e). These edits align with Recommendations 5 and 7 from the Climate Change and Natural Hazards Policy Review.														
		<i>Metro 2040</i> policy 3.4.7 c) deleted given the ambiguous language. The spirit of this policy is captured in new policies 3.4.2 e), 3.4.3 a), and 3.4.3 d).														
		<i>Metro 2040</i> policy 3.4.7 d) re-purposed as new Metro Vancouver-led advocacy action 3.4.3 a), and in alignment with Recommendation 5 of the Climate Change and Natural Hazards Policy Review.														
	<div>Table X: Major Climate Change Impacts and Natural Hazards Affecting the Metro Vancouver Region</div> <table><tr><th>Natural Hazards</th><th>Related Climate Change Impacts</th></tr><tr><td>Earthquakes</td><td></td></tr><tr><td>Landslides</td><td>More precipitation (fall, winter, and spring)</td></tr><tr><td>Floods</td><td>More precipitation (fall, winter, and spring) Sea level rise Decrease in snowpack</td></tr><tr><td>Wildfires</td><td>Longer drought periods (summer) Warmer temperatures</td></tr><tr><td>Erosion</td><td>Sea level rise More precipitation (fall, winter, and spring)</td></tr><tr><td>Subsidence</td><td>Sea level rise</td></tr></table>	Natural Hazards	Related Climate Change Impacts	Earthquakes		Landslides	More precipitation (fall, winter, and spring)	Floods	More precipitation (fall, winter, and spring) Sea level rise Decrease in snowpack	Wildfires	Longer drought periods (summer) Warmer temperatures	Erosion	Sea level rise More precipitation (fall, winter, and spring)	Subsidence	Sea level rise	New Table to be added that lists applicable regional/major climate change impacts, natural hazards, and their interaction. This table can be referred to in other goal areas of <i>Metro 2050</i> , as applicable, which would align with Recommendation 1 of the Climate Change and Natural Hazards Policy Review.
Natural Hazards	Related Climate Change Impacts															
Earthquakes																
Landslides	More precipitation (fall, winter, and spring)															
Floods	More precipitation (fall, winter, and spring) Sea level rise Decrease in snowpack															
Wildfires	Longer drought periods (summer) Warmer temperatures															
Erosion	Sea level rise More precipitation (fall, winter, and spring)															
Subsidence	Sea level rise															

Metro 2050 Goal 3 Key Terms

A **carbon neutral region** is a region that has achieved the deepest greenhouse gas emission reductions possible across all economic sectors, and removes or captures sufficient carbon dioxide to balance any remaining regional greenhouse gas emissions.

Carbon storage refers to the total amount of carbon stored in ecosystems such as forests, wetlands and intertidal areas, which often takes thousands of years to accumulate. A conservative estimate of the total carbon stored in the vegetation and soils of the region's ecosystems is 65 million tonnes¹.

Climate change impacts refer to the consequences of realized climate change risks on ecosystems, economies, infrastructure and communities.

Ecosystem services are the benefits people obtain from ecosystems (Figure 1). These services can be grouped into four main types:

- **Provisioning services** include material and energy outputs from ecosystems, including food, fresh water, and raw materials used for construction and energy like wood.
- **Regulating services** refer to the services provided by ecosystems in processing and assimilating pollution, stabilizing water flows and soil erosion, controlling local climates, and storing or sequestering carbon.
- **Cultural services** are the non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, recreation, and aesthetic enjoyment.
- **Supporting services** underpin all other ecosystem services. Ecosystems provide habitats for all plants and animals while depending on a diversity of species to maintain their own functions.

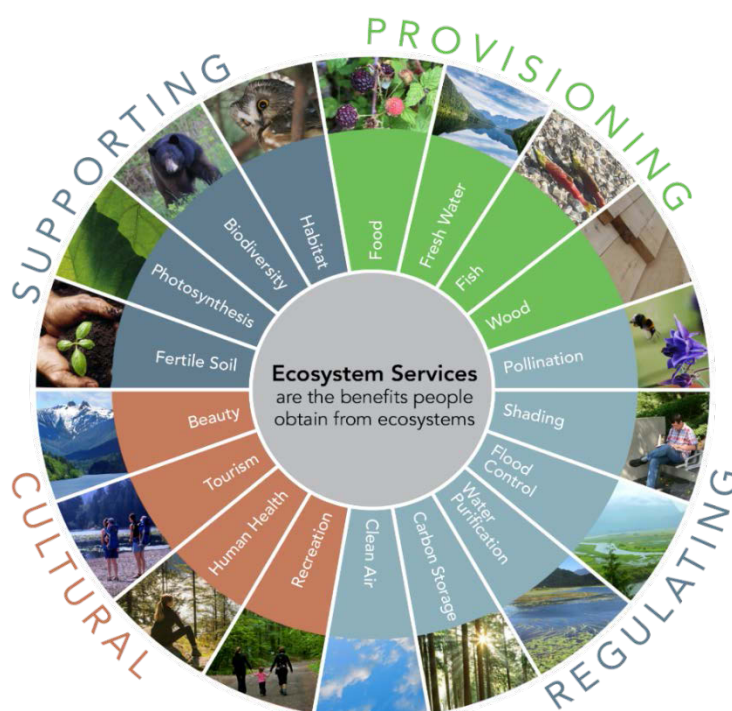


Figure1 Ecosystem services provided by healthy ecosystems

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

¹ Estimate derived from Metro Vancouver's regional carbon storage dataset. The estimate applies to the full extents of the watersheds that supply the Metro Vancouver region's drinking water, along with estuarine and intertidal areas.

Green infrastructure (Figure 2) includes the natural, enhanced, and engineered assets that collectively provide society with ecosystem services. Natural assets (e.g. forests, wetlands, and soil) and enhanced or engineered systems (e.g. bioswales and green roofs) improve resilience and mitigate negative environmental impacts from urban development, benefiting both people and ecosystem integrity. A **green infrastructure network** exists when different types of green infrastructure components are connected in a system of core green spaces (called hubs) and corridors that link them together.



Figure 2 Types of Green Infrastructure

Natural hazards are naturally occurring phenomenon that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation. Examples of natural hazards affecting the Metro Vancouver region include earthquakes, landslides, floods, and wildfires. Many natural hazards are worsened by climate change.

Resilience is the capacity of communities and organizations to prepare, avoid, absorb, recover and adapt to the effects of shocks and stresses in an efficient manner through the preservation, restoration, and adaptation of essential services and functions, while learning from shocks and stresses to build back better.

Risk is a combined function of the probability of a hazard occurring and the magnitude or severity of its potential consequences (injury, damage, loss of habitat etc.).

The **Sensitive Ecosystem Inventory (SEI)** is a consistent GIS-based inventory of the region's most ecologically important areas mapped using the provincial SEI science-based methodology by category, including quality. The SEI includes sensitive ecosystems and modified ecosystems, as follows:

- **Sensitive ecosystems** are ecologically fragile, rare or at-risk ecosystems such as wetlands, forests, and riparian areas.
- **Modified ecosystems**, such as young forests (30-80 years old) and freshwater reservoirs, that have experienced some human alteration, but still provide ecosystem services and remain important for biodiversity. In many cases, modified ecosystems are essential to maintaining ecosystem connectivity in highly fragmented landscapes where sensitive ecosystems have been lost.

The SEI does not include small, young, significantly disturbed, farmed or landscaped vegetation (e.g. young forests less than 5 hectares, crop or fallow land, enhanced or engineered green infrastructure, backyards, and street trees). Metro Vancouver creates the SEI for the region every six years using established provincial protocols. [About Sensitive Ecosystems](#)

Implementation Section (p57-64)		
Policy #	Proposed Metro 2050 Text	Rationale for Change
6.1 Regional Growth Strategy Implementation Framework		
6.1.1	Metro Vancouver and affected local governments will implement the regional growth strategy within a collaborative decision-making framework. This framework is based on provisions set out in the <i>Local Government Act</i> and in recognition by Metro Vancouver and affected local governments that collaborative decision-making is necessary in order to achieve the vision and goals laid out in the regional growth strategy.	Throughout - use terms to define the other authorities (Member Jurisdictions; Affected Local Governments) to be explained in glossary.
	The regional growth strategy has been designed so that the more regionally significant an issue, the higher the degree of regional federation involvement in decision-making, and conversely, the less regionally significant an issue, the less Metro Vancouver involvement there is. This approach is intended to provide appropriate consideration of land use planning decisions made within Metro Vancouver and member jurisdictions.	Minor wording changes
	This collaborative decision-making process applies to:	
	<ul style="list-style-type: none"> acceptance by affected local governments of the initial regional growth strategy and subsequent amendments; 	
	<ul style="list-style-type: none"> acceptance by Metro Vancouver of municipal Regional Context Statements and subsequent amendments; 	Minor wording changes
	<ul style="list-style-type: none"> ongoing regional growth strategy and Regional Context Statement administration and procedures; 	
	<ul style="list-style-type: none"> implementation guidelines. 	Add additional reference to implementation guidelines
6.2 Regional Context Statements		
6.2.1	Within two years of the Metro Vancouver Board's adoption of the regional growth strategy, each member jurisdiction must include in its Official Community Plan, and submit to the Metro Vancouver Board for acceptance, a Regional Context Statement. A member jurisdiction must submit its Regional Context Statement to the Metro Vancouver Board for acceptance after the member jurisdiction holds its public hearing relating to its Official Community Plan bylaw amendment.	Specifies when a member will submit its Regional Context Statement.

	Contents of Regional Context Statement	
6.2.2	The Regional Context Statement must identify the relationship between an Official Community Plan and the goals, strategies, and actions identified in the regional growth strategy. If applicable, the Regional Context Statement will identify how the Official Community Plan will be made consistent with the regional growth strategy over time. Regional Context Statements that propose to add or delete Frequent Transit Development Areas must be accompanied by written comments from TransLink.	
	Regional Context Statement Process	
6.2.3	If a member jurisdiction proposes an amendment to a Regional Context Statement it must submit to Metro Vancouver a council resolution, including an accompanying report, that sets out the member jurisdiction's proposed amendment(s).	Clarify notification process
6.2.4	If a member jurisdiction anticipates that its proposed Regional Context Statement, or amendment thereto, will not be accepted by the Metro Vancouver Board because it is not generally consistent with the regional growth strategy, the member jurisdiction should submit a proposed amendment to the regional growth strategy. The procedure for amendments to the regional growth strategy is set out in section 6.4.	Clarify process
6.2.5	The Metro Vancouver Board will respond within one-hundred-and-twenty (120) days of receiving a Regional Context Statement from a member jurisdiction by council resolution, indicating whether it accepts the Regional Context Statement. If the Metro Vancouver Board does not accept a Regional Context Statement, the Board will indicate the provisions to which it objects and the reasons for its objections.	Clarify notification process
Consistency with Regional Growth Strategy		
6.2.6	In considering acceptance of Regional Context Statements, the Metro Vancouver Board's expectation is that acceptable Regional Context Statements are generally consistent with the regional growth strategy's goals, strategies, actions and the regional land use designations depicted in the Regional Land Use Designations map (Map 2). Regional Context Statements should respond to all applicable policies in the regional growth strategy, and indicate how the Official Community Plan is generally consistent (including projections, maps, and specific policy language) or how it shall be made consistent over time.	Added additional statement about the expectations of RCSs.
Providing for Appropriate Municipal Flexibility		
6.2.7	A member jurisdiction may include language in its Regional Context Statement that permits amendments to the municipality's Official Community Plan to adjust the	

	boundaries of regional land use designations within the Urban Containment Boundary, as follows:	
a)	the member jurisdiction may re-designate land from one regional land use designation to another regional land use designation, only if the aggregate area of all proximate sites so re-designated does not exceed one (1) hectare;	
b)	notwithstanding section 6.2.7 (a), for sites that are greater than one (1) hectare and less than three (3) hectares in area, the member jurisdiction may re-designate land:	
	<ul style="list-style-type: none"> from Industrial to General Urban regional land use designation, if the site is contiguous with an Industrial site and the developable portion of the site will be predominantly within 150 metres of an existing or approved rail rapid transit station; or 	<p>Edits for clarity, and match text in language in section 6.3.4 f).</p> <p>Delete 'Employment' lands from this list, as flexibility for Employment lands to allow residential uses in proximity to rail rapid transit stations is proposed under the Employment land use designation.</p>
	<ul style="list-style-type: none"> from Industrial to Employment regional land use designation if the developable portion of the site will be predominantly within 250 metres of an existing or approved rail rapid transit station, provided that: 	
	<ul style="list-style-type: none"> the re-designation does not impede rail, waterway, road or highway access for industrial uses; and 	
	<ul style="list-style-type: none"> the aggregate area of all proximate sites so re-designated does not exceed three (3) hectares; 	
c)	the aggregate area of land affected by all re-designations under section 6.2.7 (a) and (b) together cannot exceed two (2) percent of the member jurisdiction's total lands within each applicable regional land use designation, the calculation of which starts on July 29, 2011.	To clearly state that the calculations started with the adoption of Metro 2040 in 2011, and will not restart in 2022.
6.2.8	A member jurisdiction may include language in its Regional Context Statement that permits amendments to its Official Community Plan to adjust the boundaries of Urban Centres and Frequent Transit Development Areas, provided such boundary adjustments meet the guidelines set out in Table 3 (Guidelines for Urban Centres and Frequent Transit Development Areas) of the regional growth strategy.	
6.2.9	Member jurisdictions will notify Metro Vancouver, in writing, of any and all adjustments, as permitted by sections 6.2.7 and 6.2.8, within thirty (30) days after the member jurisdiction has adopted its Official Community Plan amendment bylaw.	Clarify notification process. This will allow better tracking by Metro Vancouver and allow staff

		to maintain up to date maps.
6.2.10	If a member jurisdiction includes language in its Regional Context Statement that permits amendments to its Official Community Plan to adjust the boundaries of regional land use designations within the Urban Containment Boundary or the boundaries of Urban Centres and Frequent Transit Development Areas, as permitted by sections 6.2.7 and 6.2.8 respectively, the prescribed adjustments do not require a new Regional Context Statement or consideration by the Metro Vancouver Board. All other adjustments to regional land use designation boundaries require an amendment to the member jurisdiction's Regional Context Statement, which must be submitted to the Metro Vancouver Board for acceptance in accordance with the requirements of the <i>Local Government Act</i> .	Edits for greater clarity.
		Delete 6.2.11, as no longer applicable.
6.3 Categories of Regional Growth Strategy Amendments		
Type 1 – Amendments to the Regional Growth Strategy (acceptance by all affected local governments required)		
6.3.1	The following Type 1 amendments to the regional growth strategy require an affirmative 50%+1 weighted vote of the Metro Vancouver Board and acceptance by all affected local governments in accordance with section 436 of the <i>Local Government Act</i>	
a)	the addition or deletion of regional growth strategy goals or strategies;	
b)	an amendment to the process for making minor amendments to the regional growth strategy, which is specified in sections 6.3.3 and 6.3.4;	
c)	the matters specified in section 437 of the <i>Local Government Act</i> .	
6.3.2	All amendments to the regional growth strategy other than the amendments specified in section 6.3.1 are minor amendments (Type 2 and Type 3) for the purposes of section 437 of the <i>Local Government Act</i> .	Clarifies that a Type 1 amendment is not a minor amendment under the LGA, but Type 2 and 3 are.
Type 2 - Amendments to the Regional Growth Strategy (two-thirds weighted vote)		
6.3.3	The following Type 2 amendments require an affirmative two-thirds weighted vote of the Metro Vancouver Board:	Delete reference to regional public hearing requirement for Type 2 amendments
a)	amendment to the Urban Containment Boundary;	

b)	amendment of Agricultural or Conservation and Recreation land use designations, except as set out in section 6.3.4 (e), (f) and (g);	
c)	amendment from Rural land use designation to Industrial, Employment, or General Urban land use designations;	
d)	amendment of sites located outside the Urban Containment Boundary from Employment to a General Urban land use designation	
e)	the addition or deletion of an Urban Centre;	
f)	the addition or deletion of, or amendment to, the descriptions of the regional land use designations or actions listed under each strategy.	
Type 3 - Amendments to the Regional Growth Strategy (simple majority weighted vote)		
6.3.4	The following Type 3 amendments require an affirmative 50% + 1 weighted vote of the Metro Vancouver Board:	
a)	the addition or deletion of a Frequent Transit Development Area;	
b)	for sites within the Urban Containment Boundary, amendments from Industrial, Employment, or General Urban land use designations to any other such regional land use designations;	
c)	amendment from Industrial, Employment or General Urban land use designations to Rural, Agricultural, or Conservation and Recreation land use designations;	
d)	amendment from Rural land use designation to Agricultural or Conservation and Recreation land use designations;	
e)	amendment from Conservation and Recreation land use designation to Agricultural land use designation;	
f)	for sites that are contiguous with, or within, the Urban Containment Boundary, and are not within the Agricultural Land Reserve and subject to the <i>Agricultural Land Commission Act</i> , amendment from Agricultural or Rural land use designations to Industrial land use designation, and associated Urban Containment Boundary adjustments;	
g)	for sites that are identified as Special Study Areas on the Special Study Areas and Sewerage Extension Areas map (Map 12), an amendment to another regional land use designation and associated Urban Containment Boundary adjustments;	Refine for clarity
h)	removal of the Trade-Oriented overlay (Map XX) on lands with an Industrial regional land use designation; and	Indicates how the new Trade-Oriented Overlay

		could be removed.
i)	housekeeping amendments to figures, tables or maps in the Appendix Section, performance measures or other items related to document structure that do not alter the intent of the Regional Growth Strategy;	
j)	amendments to mapping to incorporate maps included in accepted Regional Context Statements;	
k)	the reclassification of a Frequent Transit Development Area to an Urban Centre, or reclassification of an Urban Centre type to another Urban Centre type;	As per the reclassification framework, the reclassification of an FTDA to an Urban Centre becomes a Type 3 amendment.
l)	all other amendments not identified in sections 6.3.1 or 6.3.3.	
6.4 Procedures for Regional Growth Strategy Amendments		
Who Can Apply for an Amendment		
6.4.1	The process to initiate amendments to the regional growth strategy is by resolution of the Metro Vancouver Board. Member jurisdictions may, by resolution, request amendments. The Metro Vancouver Board will not give first reading to an amendment bylaw which proposes to change a regional land use designation or Urban Containment Boundary unless or until the member jurisdiction or jurisdictions in which the subject site is located have requested that amendment or have been given the opportunity to formally comment on the proposed amendment.	
Notification and Request for Comments		
6.4.2	For all proposed amendments to the regional growth strategy the Metro Vancouver Board will:	
a)	provide written notice of the proposed amendment to all affected local governments;	
b)	provide a minimum of forty-five (45) days from the date of the notice for affected local governments, and the appropriate agencies, to respond to the proposed amendment;	Lengthen timeline from 30 to 45 days.
c)	post notification of the proposed amendment on the Metro Vancouver website, for a minimum of forty-five (45) days from the date of the notice;	Lengthen timeline from 30 to 45 days.
d)	if the proposed amendment is to change a site from Industrial or Employment to General Urban land use designation, provide written notice and a minimum of forty-five (45) days from the date of the notice for the Port	Lengthen timeline from 30 to 45 days.

	of Vancouver, the Vancouver International Airport Authority, the Ministry of Transportation and Infrastructure and/or the Agricultural Land Commission, as appropriate, to respond to the proposed amendment.	
6.4.3	For Type 1 amendments to the regional growth strategy set out in section 6.3.1, the procedures set out in section 435 of the <i>Local Government Act</i> apply.	
Procedures for Type 2 Amendments Requiring a Two-Thirds Weighted Vote		
6.4.4	For Type 2 amendments to the regional growth strategy set out in section 6.3.3, the Metro Vancouver Board will:	
a)	consider first, second and third reading of the amendment bylaw;	Updated process
b)	provided the amendment bylaw receives an affirmative two-thirds weighted vote of the Metro Vancouver Board at first second and third readings, refer for comment the proposed amendment to the regional growth strategy to all affected local governments, as per the requirements set out in section 6.4.2;	Add reference to third reading
		Delete reference to regional public hearing requirement for Type 2 amendments. And relocate reference to third reading.
c)	<p>Provide public engagement opportunities that include:</p> <ul style="list-style-type: none"> notification on the Metro Vancouver website; encouraging written comments via a comment form on the Metro Vancouver website; appearing as a delegation to the Regional Planning Committee or Board when amendment is considered; conveying comments submitted from the respective local public hearing to the MVRD Board, and hosting a public information meeting (digitally or in person). 	Replaces deleted public hearing with a variety of opportunities for public engagement.
d)	receive the comments from the comment period and consider final reading and adoption of the amendment bylaw, which must receive at least a two-thirds weighted vote of the Metro Vancouver Board.	Create as separate point
Procedures for Type 3 Amendments Requiring Simple Majority Weighted Vote		
6.4.5	For Type 3 amendments to the regional growth strategy set out in section 6.3.4, the Metro Vancouver Board will:	
a)	consider first, second, and third reading of the amendment	

	bylaw;	
b)	provided the amendment bylaw receives an affirmative majority weighted vote of the Metro Vancouver Board at each of the first, second, and third readings, refer for comment the proposed amendment to the regional growth strategy to all affected local governments, as per the requirements set out in section 6.4.2;	To stipulate referral process to affected local governments
c)	consider final adoption of the amendment bylaw and, provided the amendment bylaw receives an affirmative simple majority weighted vote of the Metro Vancouver Board, adopt the amendment bylaw.	Split into two sub-sections
6.5 Coordination with First Nations		
6.5.1	Metro Vancouver will work with First Nations to facilitate the compatibility of Metro Vancouver's regional growth strategy and First Nations planning and development initiatives.	
6.5.2	Many First Nations communities have asserted aboriginal rights and title to traditional territories within the region, and are currently engaged in treaty negotiations and other processes. The implementation of the regional growth strategy will proceed without prejudice to any aboriginal rights or title that may currently exist, or be defined further through treaty or other processes.	
6.5.3	A land use plan prepared by Tsawwassen First Nation will include a statement equivalent to a Regional Context Statement as defined in the <i>Local Government Act</i> , identifying how its land use plan is consistent with the regional growth strategy.	Shortened statement, as current RGS has been in force since 2011, which is after the 2009 TFN plan.
6.6 Coordination with TransLink		
6.6.1	Metro Vancouver will work with TransLink with the objective that the regional growth strategy and TransLink's regional transportation plans are compatible and complementary. Metro Vancouver will refer to TransLink for written comments on proposed Regional Context Statements that would impact the regional transportation system or significantly affect the demand for regional transportation services.	
6.6.2	As an affected local government, TransLink is required to consider acceptance of the regional growth strategy and any proposed Type 1 amendments, as set out in section 6.3.1.	
6.6.3	TransLink is mandated to provide a regional transportation system that is consistent and supportive of the regional growth strategy, and its associated goals, objectives, land use designations, overlays, and policies. The <i>South Coast British Columbia Transportation Authority Act</i> also requires TransLink to: review the regional growth strategy and any amendments to it and advise Metro Vancouver of the implications for the	Added new section further defining the roles and responsibilities of Translink, based on their Act.

	Regional Transportation Strategy, and prepare regional transportation investment plans that set out the relationships between major actions and the regional growth strategy.	
6.7 Coordination with Other Governments and Agencies		
6.7.1	Metro Vancouver will work with the Fraser Valley Regional District, the Squamish-Lillooet Regional District, and the Islands Trust (regarding Bowen, Bowyer, and Passage Islands) to facilitate the compatibility of regional planning and growth management initiatives in Metro Vancouver and these neighbouring jurisdictions.	
6.7.2	Metro Vancouver will collaborate with the Federal Government, the Province and their agencies on major investments in the regional transportation system, expansion of affordable housing options, and the location of public facilities that support the goals and strategies specified in the regional growth strategy. Metro Vancouver will seek formal Implementation Agreements with these agencies to give effect to that intent.	
6.8 Coordination with Metro Vancouver / Greater Vancouver Boards		
6.8.1	<p>All bylaws adopted and all works and services undertaken by Metro Vancouver Regional District, the Greater Vancouver Water District, or the Greater Vancouver Sewerage and Drainage District must be consistent with the regional growth strategy.</p> <p>The Greater Vancouver Sewerage and Drainage District and the Greater Vancouver Water District will not directly or indirectly supply, agree to supply, or authorize connections that enable the supply of services to a site that is developed or proposed to be developed after the date of adoption of the regional growth strategy where the nature of that development is, in the sole judgment of the Metro Vancouver Regional District Board, inconsistent with the provisions of the regional growth strategy.</p>	
6.8.2	For further clarity, sites within the Urban Containment Boundary that are designated General Urban, Industrial, or Employment, would be eligible for sewerage services, subject to normal Greater Vancouver Sewerage and Drainage District technical considerations, provided that the proposed development complies with the applicable policies under those designations and any such Urban Centre and Frequent Transit Development Area overlays that might apply.	
6.8.3	For lands with a Rural, Agricultural, or Conservation and Recreation regional land use designation, sections 1.1.1, 1.4.1, 2.3.1, and 3.1.1 apply regardless of whether the area is within one of the Greater Vancouver Sewerage and Drainage District's	Note: 1.1.1, 1.4.1, 2.3.1, and 3.1.1 refer to Metro 2040 policy actions.

	sewerage areas.	
	With reference to sections 1.1.1, 1.4.1, 2.3.1, and 3.1.1, in determining whether, in the circumstances, connection to regional sewerage services is the only reasonable means of preventing or alleviating a public health or environmental contamination risk, the Metro Vancouver Regional District Board will consider the opinion of a professional, as such term is defined in the Sewerage System Regulation pursuant to the <i>Public Health Act</i> (British Columbia), or if appropriate a qualified professional, as such term is defined in Municipal Wastewater Regulation 87/2012 pursuant to the <i>Environmental Management Act</i> (British Columbia), submitted by the member jurisdiction as to the technical and economic feasibility of installing and maintaining a private on-site sewage treatment system in accordance with all laws and regulations applicable in British Columbia. The Metro Vancouver Regional District Board may also obtain its own opinion from a professional and consider such opinion.	Note: 1.1.1, 1.4.1, 2.3.1, and 3.1.1 refer to Metro 2040 policy actions.
6.9 Sewerage Area Extensions		
6.9.1	Notwithstanding any other provision in the regional growth strategy, within the area identified on Map 12 as “Rural within the Sewerage Area”, which includes part of the Salmon River Uplands in the Township of Langley that is contained within the Greater Vancouver Sewerage and Drainage District’s Fraser Sewerage Area, and within the area identified on Map 12 as “Sewerage Extension Areas”, regional sewer servicing will be permitted subject only to land uses being consistent with the applicable regional land use designation and normal Greater Vancouver Sewerage and Drainage District technical considerations.	Editing refinements, plus clarity of intent. Remove reference to North Salmon River Uplands and South Fernridge as these references are unnecessary.
6.9.2	All connections to regional sewerage services approved by the Greater Vancouver Sewerage and Drainage District Board as per sections 1.1.1, 1.3.1, 2.3.1, and 3.1.1 and 6.9.1 will be contained within a sewerage area footprint boundary as determined by the Metro Vancouver Regional District and Greater Vancouver Sewerage and Drainage District Boards. Any sewerage service connection outside of that boundary will require Metro Vancouver Regional District Board and Greater Vancouver Sewerage and Drainage District Board approval.	Editing refinements, plus clarity of intent. Note: 1.1.1, 1.4.1, 2.3.1, 6.9.1, and 3.1.1 refer to Metro 2040 policy actions.
		Reference to specific Implementation Guideline #7 removed – addressed in 6.15.1.

6.10 Special Study Areas		
6.10.1	Special Study Areas as depicted on the Special Study Areas and Sewerage Extension Areas map (Map 12) identify locations where, prior to the adoption of Regional Growth Strategy Bylaw No. 1136, on July 29, 2011, a member jurisdiction had expressed an intention to alter the existing land use, and is anticipating a future regional land use designation amendment. Pending Metro Vancouver Regional District Board approval of a regional land use designation amendment, the current regional land use designation(s) applies within the Special Study Area. Amending a regional land use designation within a Special Study Area is considered a Type 3 amendment under section 6.3.4 of the regional growth strategy. This includes any associated adjustment(s) to the Urban Containment Boundary for a Special Study Area. As part of any amendment establishing a new land use designation, the Special Study Area boundaries for those amended lands will be removed from the regional growth strategy.	Added sentence for clarity.
6.10.2	If the Special Study Area involves lands within the Agricultural Land Reserve, the member jurisdiction is required to consult with the Agricultural Land Commission during the preparation of the planning studies prior to initiating an application to exclude the lands from the Agricultural Land Reserve.	
6.11 Jurisdiction		
6.11.1	The regional growth strategy applies to all lands within the boundaries and jurisdiction of Metro Vancouver.	
6.11.2	In accordance with the <i>Agricultural Land Commission Act</i> , in the event that there is an inconsistency between the regional land use designations or policies set out in the regional growth strategy and the requirements of the <i>Agricultural Land Commission Act</i> or regulations and orders made pursuant thereto, the Agricultural Land Commission requirements will prevail.	
6.12 Regional Growth Strategy Maps		
6.12.1	The maps contained in the regional growth strategy are small scale depictions of the official regional land use designation maps and have been included for convenience purposes only. The official regional land use designation maps, the Sensitive Ecosystems Inventory map, and the Major Transit Growth Corridor map are maintained by Metro Vancouver and available for viewing on the Metro Vancouver website, and will be updated to incorporate changes to designation boundaries that result from adopted regional growth strategy amendment bylaws. TransLink owns and maintains the official Major Transit Network map on its website.	Reference to all the maps (SEI and MTGC map) is added. Added reference to TransLink's Major Transit Network map.

	The maps contained in the regional growth strategy are small scale depictions of the official regional land use designation maps and for convenience purposes only.	
6.12.2	Where a regional land use designation boundary does not align with a property or parcel legal boundary, the Agricultural Land Reserve boundary, a member jurisdiction Official Community Plan or zoning boundary, or a distinct geographic or natural feature, the regional land use designation boundary will be considered approximate, and the boundary depicted in the respective accepted Regional Context Statement shall prevail.	Editing refinements.
6.12.3	The boundaries of Urban Centres, Frequent Transit Development Areas, and Trade-Oriented Lands are to be defined by member jurisdictions in Official Community Plans, Neighbourhood or Area Plans, or equivalent, and shown in Regional Context Statements. Where member jurisdictions amend the boundaries of Urban Centres, Frequent Transit Development Areas, or Trade-Oriented Lands , and, in accordance with section 6.2.8, have not changed their Regional Context Statement, member jurisdictions will notify Metro Vancouver, in writing, within thirty (30) days.	Clarify notification process Added Trade-Oriented Lands to the list of Regional Overlays that member jurisdictions may define in Regional Context Statements.
6.12.4	The areas for Special Study Areas depicted on Map 12 are not to be expanded nor are new areas to be created. A Type 3 amendment to Map 12 is only permitted to delete Special Study Areas and may occur after the regional growth strategy has been amended to change the regional land use designation of the Special Study Area or when a member jurisdiction decides to eliminate a Special Study Area.	
		6.12.5 is deleted as there is no intent to create new / expanded Special Study Areas (as per 6.12.4).
6.13 Tables, Figures and Performance Measures		
6.13.1	Tables 2 showing dwelling unit and employment growth targets, and population projections for Metro Vancouver and member jurisdictions are included in the strategy as guidelines only. These tables are included in the regional growth strategy as a reference for use when preparing Regional Context Statements and regional planning initiatives. Metro Vancouver, in collaboration with member jurisdictions, will maintain projections to monitor growth and will propose updates to tables in accordance with the amendment process set out in section 6.3.4 following Metro Vancouver Board acceptance of Regional Context Statements or a significant change in the growth projections assumptions.	

6.13.2	The following figures and maps in the regional growth strategy are included as reference only: Tables 1, 4; Figures 1, 2, 3, 4; Maps 1, 9, 10, B.1, B.2.	
6.13.3	Pursuant to the <i>Local Government Act</i> , Metro Vancouver will prepare an annual report on progress in meeting the goals of the regional growth strategy through the monitoring of the performance measures identified in the Performance Measures section and in meeting other targets set out in the regional growth strategy.	
6.14 Interpretation		
6.14.1	In this document, unless the context requires otherwise, the term 'Metro Vancouver' refers to the Metro Vancouver Regional District.	
6.14.2	All terms used in the regional growth strategy that are defined in the <i>Local Government Act</i> have the meanings given to such terms in the <i>Local Government Act</i> .	
6.14.3	For terms not addressed in 6.14.2, a Glossary of Terms is provided and shall be used to define terms used in <i>Metro 2050</i> .	Added reference to new separate glossary section.
6.14.4	Affected local governments are the governments and authorities which are directly affected by the regional growth strategy, namely the Metro Vancouver member jurisdictions (excluding Bowen Island Municipality), the adjoining Regional Districts of Squamish-Lillooet Regional District and Fraser Valley Regional District, and the South Coast British Columbia Transportation Authority (also known as 'TransLink').	
		Previous Metro 2040 6.14.4 deleted.
6.14.5	In the case of the Electoral Area A, a Regional Context Statement is not required, but the policy actions listed for member jurisdictions should be addressed in the Electoral Area A Official Community Plan, as applicable.	New policy to clarify how "member jurisdiction" actions apply to planning in Electoral Area A.
6.15 Implementation Guidelines		
6.15.1	The Metro Vancouver Board may periodically prepare Implementation Guidelines to assist in the implementation of the regional growth strategy, to be prepared in collaboration with member jurisdictions. These guidelines should be read in conjunction with the regional growth strategy, and do not replace or supersede the content and requirements of the regional growth strategy.	References to specific guidelines have been deleted as this is unnecessary.

To: Regional Planning Committee

From: Sinisa Vukicevic, Program Manager, Regional Planning and Housing Services

Date: March 17, 2021 Meeting Date: April 9, 2021

Subject: ***Metro 2050 Projections Update***

RECOMMENDATION

That the MVRD Board receive for information the report dated March 17, 2021, titled “*Metro 2050 Projections Update*”.

EXECUTIVE SUMMARY

In collaboration with member jurisdictions, Metro Vancouver has revised the population, dwelling unit and employment growth projections for *Metro 2050*, the update to the regional growth strategy.

The proposed changes include:

- updated population, dwelling unit and employment projections to 2050 based on improved methodology and significant engagement with member jurisdictions and others;
- projections included at the regional and sub-regional scale, rather than by member jurisdiction (as is done currently), to better align with the work and infrastructure investments being undertaken by Metro Vancouver Utilities and TransLink and to mitigate for the static nature of the regional growth strategy and needed flexibility for member jurisdictions; and
- ensuring that member jurisdiction level projections continue to be provided as a Regional Planning service via annual reports and as a digital data product.

Metro Vancouver grew from 2.38 million people in 2011 to 2.59 million people in 2016. Regional Planning’s modelling shows that this growth trend will continue. The region is anticipated to reach about 3.8 million people by 2050, which means an average annual growth of about 35,000 people. Metro Vancouver’s projections are scenario based, with a range built in to address short terms shocks and uncertainties such as the one presented by COVID-19.

PURPOSE

To provide the Regional Planning Committee and MVRD Board with the opportunity to review and comment on the draft content of Metro Vancouver projections for *Metro 2050*, the updated regional growth strategy.

BACKGROUND

The *Metro 2040* Projections Policy Review set out to update the population, dwelling unit, and employment projections for Metro Vancouver’s member jurisdictions and aggregate them for inclusion in *Metro 2050*. Metro Vancouver staff have been working through the projections update with member jurisdiction staff over a five-month engagement and review process, and they are now being provided to the Committee and Board for information.

PROJECTIONS IN METRO 2040

Metro 2040's population and housing projections were developed using a Cohort Projection Model, which provides a structure to establish a baseline population by municipality, gender and single year of age, and to combine annual changes in the population change components: natural increase (births, deaths) and migration (immigration, inter-provincial, Intra-provincial, inter-municipal). This demographic modelling provides the foundation for estimating household formation within the population and the associated housing demand. Regional employment projections were derived through comparative projections of the labour force and regional economic sector / employment trends. The projections developed by Metro Vancouver are scenario based, are provided as a reference for member jurisdictions and regional agencies, and do not represent specific targets for the region's or a municipality's growth. The projections in *Metro 2040* represent an approximate figure for a given year, with consideration for potential variance within a high and low growth margin. That is why municipalities are asked to demonstrate how they plan to be 'generally consistent' with the projections in their Regional Context Statements.

Continuous Improvement

Beyond *Metro 2040*, Metro Vancouver's mandate to implement and monitor growth in the region, requires estimates of how much growth the region may experience and how it might be distributed within the region. Metro Vancouver projects growth in population, housing and employment to support regional and municipal planning, transportation modelling and demand planning for regional water and wastewater services. Regional Planning continues to update those projections as trends change, data becomes available, and with a commitment to continuous improvement. Since the last update to the regional growth strategy, the Age-Cohort model has been improved and transferred to a dynamic modeling platform that supports the following important improvements:

- Incorporation of municipal land capacity through inclusion of municipal policy frameworks;
- Incorporation of municipal local demographic characteristics;
- Inclusion of UBC student housing population and households (may not be captured by the Census);
- First Nation's lands are now provided separate from municipalities to support their land use objectives;
- An estimate of jobs with no-fixed workplace and home-based jobs are involved in the framing of employment projections;
- Employment projections were cross-referenced with sub-regional employment projections based on assumptions and inputs from external experts; and
- Housing projections were cross-referenced with the housing demand estimate assumptions and feedback received from an Expert Panel and the RPAC - Housing sub-committee.

DRAFT METRO 2050 REGIONAL AND SUB-REGIONAL PROJECTIONS

At its meeting on November 8, 2019 the Regional Planning Committee received the scope of work for updating *Metro 2040's* population, dwelling unit, and employment projections (Reference 1). Metro Vancouver's process in preparing the updated growth projections included establishing baselines or benchmark estimates and projecting future activities based on adopted municipal planning policies (e.g. OCPs, local area plans, and historical trends). The projections have been updated to the year 2050, and prepared using the Census 2016 data and updates from member jurisdictions on their respective land use plans. Based on a five-month-long consultation process with member jurisdiction

staff, Metro Vancouver staff reviewed and finalized the draft population, dwelling unit, and employment projections (Attachment).

The individual endorsed municipal projections have now been aggregated to the sub-regional and regional totals for inclusion in the regional growth strategy. During the consultation and review process, Metro Vancouver staff concluded that showing the projections in the regional growth strategy sub-regionally, instead of by individual jurisdiction, provides greater clarity that the projections are meant to be considered more broadly, and are meant to be used as a planning guide and are not targets. The projections are proposed to be presented sub-regionally for the following reasons:

- they will better support the long-term capital planning and investment programs of Metro Vancouver's utilities and TransLink, since the projections are more stable over the long term, and resilient to shocks / disruptors over the short and medium terms;
- they will be the main input to Metro Vancouver's Regional Land-use Model that is currently being developed; the model will use sub-regional projections as an input for the definition of land demand;
- they are a fundamental step in setting future growth targets for the Urban Centres and FTDA's within the sub-regions;
- they will provide more flexibility to member jurisdictions in preparing and adjusting with their own respective projections over time;
- they will be more resilient to rapid changes in residential and employment market demands that do not necessarily follow municipal boundaries; and
- they provide a better approximate alignment with utility and TransLink planning areas.

Further, while the sub-regional projections will form a part of *Metro 2050* and will be updated through the plan amendment process from time-to-time, staff also propose that projections at the sub-regional and member jurisdiction level will be updated annually and published as separate reports to be posted publicly on the Metro Vancouver website; detailed projection data will be made available by preferred geography to any member jurisdiction staff upon request and at any time. This approach will allow Metro Vancouver staff to keep the projections current and more accurate, and consider and better address situations like COVID-19 that result in immediate, short term impacts to the projections.

Metro Vancouver Sub-Regions

To varying degrees, sub-regions are currently being utilized in *Metro 2040*, where eight sub-regions have been defined in Table A.1 (Reference 2). In considering a more comprehensive methodology in the definition of Metro Vancouver's sub-regions for *Metro 2050*, staff are proposing six sub-regions for the purposes of communicating the projections, as follows:

- **North Shore** (City of North Vancouver, District of North Vancouver, District of West Vancouver, Electoral Area A, and Lions Bay + Bowen Island);
- **Burrard Peninsula** (City of Burnaby, City of New Westminster, City of Vancouver, UEL + UBC);
- **Tri-Cities** (City of Coquitlam, City of Port Coquitlam, City of Port Moody, Village of Anmore and Village of Belcarra);

- **South of Fraser- West** (City of Delta, City of Richmond, Tsawwassen First Nation);
- **South of Fraser – East** (City of Langley, City of Surrey, City of White Rock, Langley Township); and
- **North East** (City of Maple Ridge, City of Pitt Meadows).

Figure 1. Metro 2050 Projections - Sub Regions



NEXT STEPS

The updated sub-regional 2050 projections are intended to be introduced as a new, stand-alone section in *Metro 2050*. This section will be in the front of the regional growth strategy with supporting text and graphics similar to that shown in the Attachment.

In May 2021, staff will be presenting the new sub-regional projections to the *Metro 2050* Intergovernmental Advisory Committee, as a part of the complete draft of *Metro 2050*.

CONCLUSION

With the support of the *Metro 2050* Intergovernmental Advisory Committee, Metro Vancouver staff are currently drafting new and amended content for *Metro 2050* by goal area, based on the MVRD Board endorsed policy review recommendations.

Based on a five-month consultation and review process with member jurisdiction staff, Metro Vancouver staff have prepared updated draft population, dwelling unit, and employment projections.

During the consultation and after extensive consideration, Metro Vancouver staff concluded that showing the projections sub-regionally, instead of by individual jurisdiction, provides greater clarity that the projections are meant to be considered more broadly, rather than at the local level, and meant to be used as a guide and not precise targets. The projection data at the sub-regional and member jurisdiction level will be updated annually and published as separate reports to be posted publicly on the Metro Vancouver website; detailed projection data will be made available by preferred geography to any member jurisdiction staff upon request and at any time.

Attachment (44710420)

Draft Regional and Sub-Regional Population, Dwelling Unit and Employment projections to the year 2050

References

1. http://www.metrovancouver.org/boards/RegionalPlanning/RPL_2019-Nov-8_AGE.pdf#page=132
2. [Metro 2040 Table A.1](#)

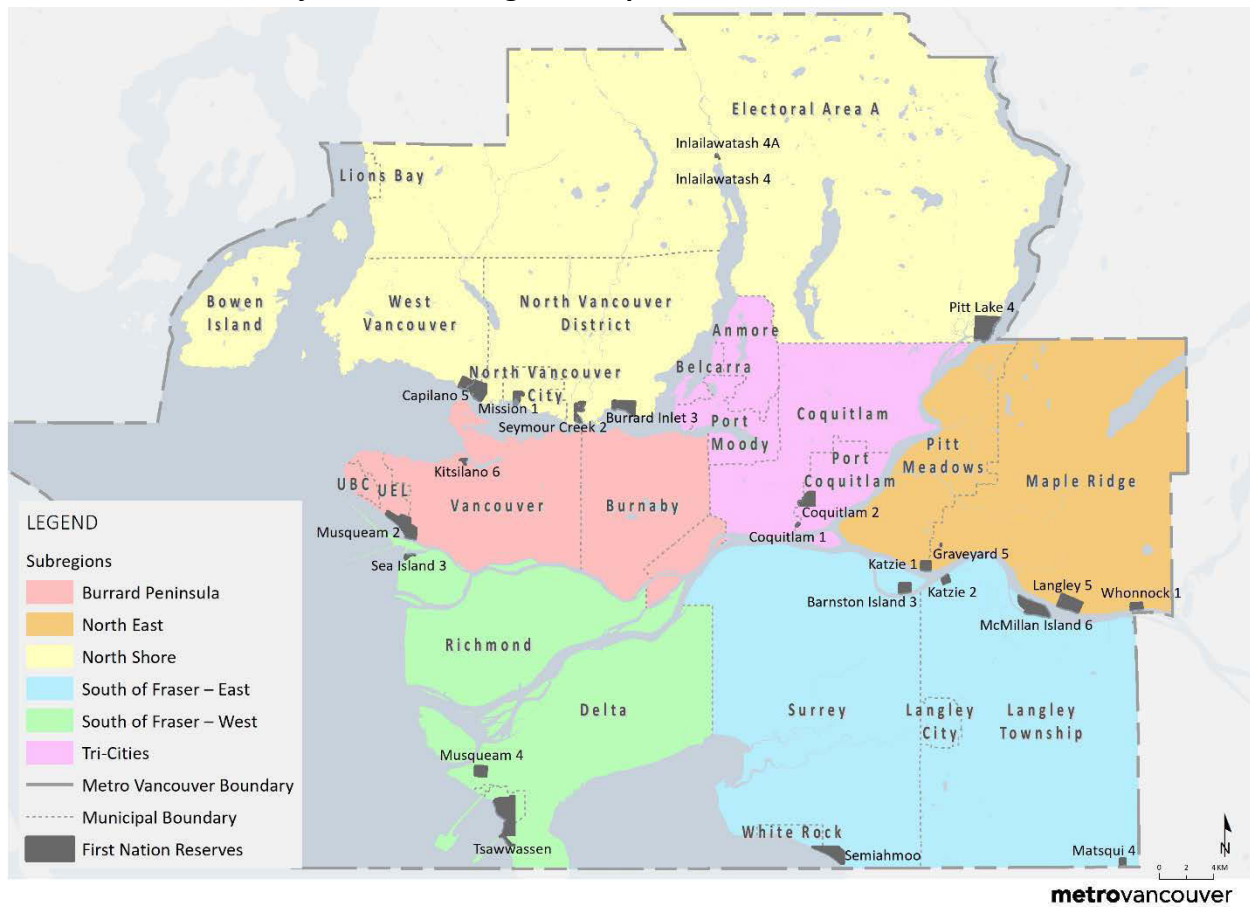
44477463

DRAFT REGIONAL PROJECTIONS FOR POPULATION, DWELLING UNITS AND EMPLOYMENT

The draft projections for *Metro 2050* are scenario based representing a baseline with an intended range of +/- 15% for a high or low growth margin. They are projections derived from a dynamic modelling platform that supports the integration of municipal land capacity and demographic characteristics. These draft projections were developed through an 8 month engagement process with all member jurisdictions and triangulated with other agency methodologies and expert panel advice.

POPULATION						
		2016	2020	2030	2040	2050
	Metro Vancouver Total	2,593,200	2,767,000	3,206,100	3,564,100	3,836,800
SUB-REGIONS	Burrard Peninsula	1,014,800	1,064,900	1,206,000	1,311,900	1,387,800
	North Shore	199,700	207,700	236,500	254,200	271,200
	South of Fraser – East	713,300	782,500	939,200	1,077,300	1,185,100
	South of Fraser – West	314,500	337,900	381,100	414,100	441,300
	North East	105,500	110,800	127,200	142,800	155,000
	Tri-Cities	245,300	263,100	316,100	363,800	396,500
DWELLING UNITS						
		2016	2020	2030	2040	2050
	Metro Vancouver Total	1,000,500	1,075,500	1,287,700	1,460,500	1,589,400
SUB-REGIONS	Burrard Peninsula	435,900	462,900	533,200	584,600	623,400
	North Shore	79,600	83,600	100,600	111,900	122,000
	South of Fraser – East	242,700	266,900	332,300	395,200	441,000
	South of Fraser – West	113,500	123,100	146,700	163,400	175,400
	North East	38,800	42,200	50,000	56,800	61,900
	Tri-Cities	90,000	96,800	124,800	148,600	165,700
EMPLOYMENT						
		2016	2020	2030	2040	2050
	Metro Vancouver Total	1,342,200	1,420,100	1,621,600	1,775,300	1,883,600
SUB-REGIONS	Burrard Peninsula	643,700	671,700	739,500	786,500	820,000
	North Shore	89,400	94,000	107,200	115,900	123,200
	South of Fraser – East	287,100	309,500	372,900	426,600	465,200
	South of Fraser – West	194,100	207,500	236,000	257,700	271,900
	North East	35,800	38,600	45,500	51,200	55,100
	Tri-Cities	92,000	98,900	120,500	137,500	148,200

Metro Vancouver Projections Sub-Regions Map



To: Regional Planning Committee

From: Eric Aderneck, Senior Planner, Regional Planning and Housing Services

Date: March 25, 2021

Meeting Date: April 9, 2021

Subject: **Metro Vancouver 2020 Regional Industrial Lands Inventory**

RECOMMENDATION

That the MVRD Board:

- a) receive for information the report dated March 25, 2021, titled “Metro Vancouver 2020 Regional Industrial Lands Inventory”; and
 - b) direct staff to distribute the report titled “Metro Vancouver 2020 Regional Industrial Lands Inventory”, to member jurisdictions, the Province, the Port of Vancouver, TransLink, the Urban Development Institute, NAIOP, Vancouver Airport Authority, Agricultural Land Commission, and Squamish Lillooet and Fraser Valley Regional Districts to support ongoing efforts to protect the region’s essential industrial land base for industrial activities.
-

EXECUTIVE SUMMARY

Metro Vancouver prepares a Regional Industrial Lands Inventory every five years, which supports the implementation of the regional growth strategy and the Regional Industrial Lands Strategy, as well as local planning and economic development efforts. The *2020 Regional Industrial Lands Inventory* provides a comprehensive and current summary of the quantity and quality of industrial lands in the region as of mid-2020. The data quantifies the limited supply of industrial lands, the amount of land that is developed for industrial and other uses by type of activity and lands that are vacant, supports industrial lands protection and intensification efforts, and provides comprehensive data for further analysis of industrial land matters.

The key findings from the 2020 Regional Industrial Lands Inventory include:

- there continues to be an increasing amount of industrial lands being used for non-industrial purposes, which poses a considerable threat to the industrial land base;
- there are few remaining available large sites for ‘trade-oriented’ logistics uses, which has impacts on businesses locating in the region and being able to stay and grow in the region;
- although there was an increase in the total size of the Inventory between 2015 and 2020, many of the lands added are not in locations well served by the transportation / goods movement network and even with these additions, due to the rate of development activity, the amount of vacant industrial land continues to decline; and
- there are continuing competing priorities for the limited industrial lands.

PURPOSE

To provide the *2020 Regional Industrial Lands Inventory* to the Regional Planning Committee and MVRD Board for information (Attachment).

BACKGROUND

A key deliverable for Regional Planning is a set of regional land use inventories to support planning and policy making in the region. Metro Vancouver has completed a Regional Industrial Land Inventory every 5 years since 2005. The *2020 Regional Industrial Lands Inventory* is now ready for Committee and Board review.

THE IMPORTANCE OF INDUSTRIAL LANDS

Industrial lands are required to support a prosperous and growing regional economy and workforce, as well as local, regional and national transportation and trade functions. Given the ongoing pressures to convert industrial lands to other uses and the limited industrial land base, protecting the industrial land supply is imperative to accommodate the region's growing economy and employment. The efficient use of industrial lands in the Metro Vancouver region is important for both local-servicing businesses and trade-related organizations. *Metro 2040* includes provisions for the protection and intensification of the region's industrial lands to support economic prosperity and an efficient goods movement network.

Approved in 2020, the *Metro Vancouver Regional Industrial Lands Strategy* identifies a series of recommendations to respond to the issues facing the region's industrial lands (Reference 2). A key component to inform public policy and private investment decisions is an accurate and current inventory of the industrial lands in the region.

The 2020 Inventory presents a comprehensive inventory of industrial and associated lands in the region and contains detailed information about the quantity, quality, status, and attributes of the lands as of mid-2020. The 2020 Inventory provides a complete picture of the amount and type of 'Developed' and 'Other / Vacant' lands in the region, and also allows for a comparison with past inventories (namely the revised 2015 Inventory) to assess change over time.

2020 REGIONAL INDUSTRIAL LANDS INVENTORY METHODOLOGY

Metro Vancouver developed the methodology for the 2020 Inventory through building on the experience from the 2015 Inventory and subsequent refinements (Reference 1). The principal objective for the Inventory is to systematically categorize industrial lands using a consistent and clear set of criteria. Inventory land use classifications are based on the existing use of the lands and are different and independent of the regional land use designations found in *Metro 2040*.

The 2020 Inventory includes 30 land use classifications that provide a detailed assessment of the wide range of different types of industrial, quasi-industrial functions, and non-industrial activities occurring on the lands. For reporting purposes, these detailed classifications have been consolidated into 7 larger groups, organized by 9 sub-regions. The land use classification definitions reference the primary use of the site, including normally associated on-site accessory / ancillary uses, such as parking or loading areas.

2020 REGIONAL INDUSTRIAL LANDS INVENTORY RESULTS

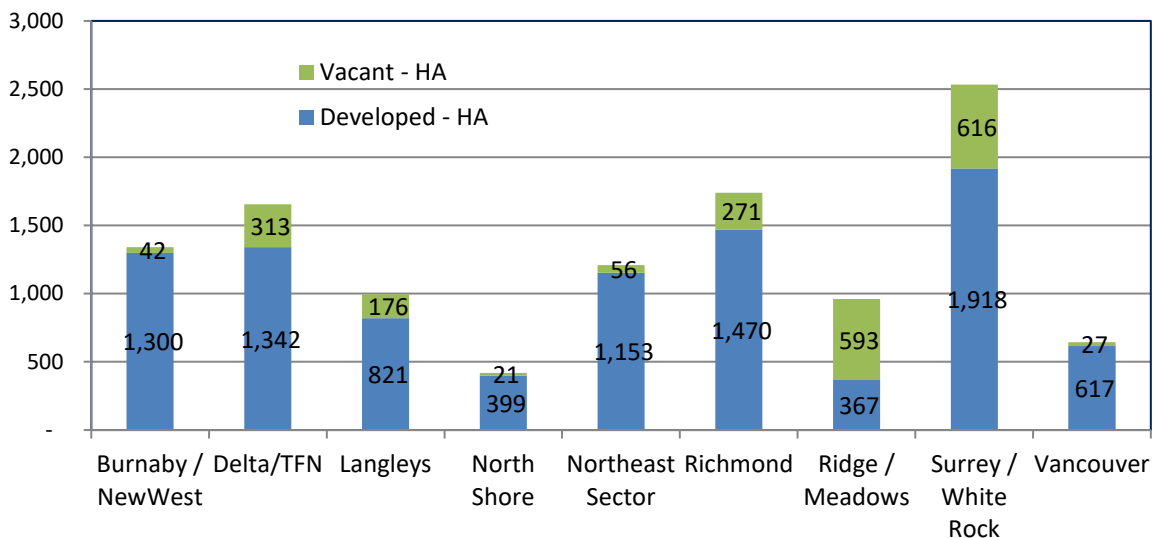
In mid-2020, the Metro Vancouver region had 11,502 hectares (28,422 acres) of lands within the Inventory study area; 82% (9,387 ha) of lands were 'Developed' and 18% (2,115 ha) were 'Other / Vacant'.

The key summary points from the 2020 Inventory include:

- despite industrial lands being set aside in municipal plans / policies for ‘industrial use’, the notion of ‘developed’ does not imply all are fully developed and used for ‘industrial purposes’. ‘Other / Vacant’ includes lands that have non-industrial uses. These uses impact the industrial capacity of the lands;
- the quality of lands, including such attributes as size, location, and site features, are as important as the quantity of lands;
- most of the lands in the Inventory are located in the southern and eastern parts of the region: i.e. 22% in Surrey, 15% in Richmond, and 14% in Delta / Tsawwassen First Nation;
- 40% of lands were categorized as ‘Building Intensive Industrial’, with a range of industrial uses, along with associated accessory uses;
- 25% of the lands were used for ‘Large Scale Infrastructure / Transportation’ (utilities, port, airport, rail yards), which are not tracked by the market; and
- the Inventory includes lands designated and/or zoned industrial that have stand-alone non-industrial uses including as ‘Retail’ (4% of the inventory) and ‘Commercial’ (4%).

Figure 1 below shows the distribution of the ‘Developed’ and ‘Other / Vacant’ lands by sub-region geography. Many more tables and charts can be found in the technical report.

Figure 1: Developed and Other/Vacant Inventory by Sub-Region (Ha)



The documented changes in inventory size and absorption between 2015 and 2020 include:

- in terms of additions or removals from the Inventory, 323 ha (798 ac) of land were added while 70 ha (174 ac) were removed; this results in a net increase of 252 ha (624 ac) in the inventory over the five-year period;
- most of the Inventory additions occurred in: Maple Ridge, Delta, and Port Coquitlam;
- notable removals from the Inventory occurred in: Still Creek in Burnaby, Queensborough in New Westminster, Campbell Heights in Surrey, and Willoughby in Langley;

- in terms of absorption (vacant lands becoming developed, or vice versa), 507 ha (1,253 ac) went from 'Other / Vacant' to 'Developed' status, while 23 ha (58 ac) of lands went from 'Developed' to 'Other / Vacant' status. This yielded a net absorption of 484 ha (1,196 ac) of lands over the five-year period, for an annual average of 97 ha (239 ac);
- the amount of 'Other / Vacant' lands decreased by 531 ha (1,311 ac) during the 2015-2020 period: i.e. 507 ha (96%) became 'Developed' via absorption, while 23 ha (4%) were entirely removed from the Inventory (due to municipal designation changes or land use changes).

The findings further profiled in the 2020 Inventory report include:

- **Qualitative attributes of lands matter** - The Inventory comprises lands used and intended for industrial. The Inventory includes traditional and new types of industrial activities, quasi-industrial functions, and non-industrial uses on the lands, which have different user needs. The quality of lands, such as attributes like size, location, and site features, are as important as quantity of lands.
- **Lands added to and removed from the Inventory have different locational and site attributes** - Lands were removed from the Inventory due to a number of reasons, but mostly due to municipal policy changes. Much of the lands added to the Inventory were in locations not well served relative to transportation networks / goods movement corridors nor have other key attributes desired by the market, whereas some of the lands removed had good accessibility.
- **Few available large sites for 'trade-oriented' logistics uses** - There are few vacant sites available for 'trade-oriented' logistics users, namely large sites with minimal constraints and close to transportation infrastructure.
- **Increasing amounts of industrial lands are used for non-industrial purposes** - Conversion of industrial lands can occur in different ways. Some industrial lands are re-designated and removed from the Inventory as per municipal plans, while other lands with flexible industrial designations are rezoned to allow for non-industrial uses (e.g. office, commercial). Some of these other types of uses support industrial activities, while others may threaten industrial areas, such as commercial and retail uses beyond those accessory or supporting industrial uses.
- **Continued competing priorities for limited lands** – *Metro 2040* and the Regional Industrial Lands Strategy include industrial and other long range regional planning goals. Because of these multiple objectives, at both the regional and local levels, there are in some cases competing or even conflicting policy priorities.
- **Most, but not all, industrial lands are secured for long-term protection** - Municipal policies (land use designations and zoning) and regional land use designations secure the long-term industrial use of industrial lands. Lands that do not have such policy protection are more likely to convert and redevelop to other uses, particularly lands located in Urban Centres.
- **More industrial land intensification is expected over time** - Most of the developed lands are substantially used, with limited immediate opportunity for redevelopment and intensification. Nevertheless, as these lands redevelop, there will be potential to densify and intensify.

- **The industrial land absorption rate declined due to limited raw land supply** - Although recorded development / absorption activity is a reflection of industrial demand, it is in fact limited by the amount of land supply, so is not a true reflection of total demand.

The 2020 Inventory can be used to inform regional and municipal planning processes and policy work, as well as inform infrastructure investments by agencies and private sector business decisions, by such means as supporting:

- refinement of municipal and regional industrial plans and policies;
- refinement of municipal zoning bylaws;
- preparation of area plans and employment projections;
- preparation of tools to encourage the development and intensification of industrial lands;
- the development community with information about available industrial lands; and
- appropriate economic and employment growth.

NEXT STEPS

As part of the ongoing implementation of the Regional Industrial Lands Strategy and the release of the 2020 Regional Industrial Lands Inventory, Metro Vancouver will pursue opportunities to engage with stakeholders to advance industrial land matters across the region. This includes such things as promoting the results of the 2020 Inventory to member jurisdictions, industrial developers, and other agencies and stakeholders, to encourage more intensive industrial development forms, while encouraging the protection of the industrial use intent of the limited land supply.

Additional work based on the 2020 Inventory could address industrial land demand, documenting market readiness and redevelopment / intensification potential, a regional land use assessment (which is currently being scoped), and support other regional and local planning initiatives.

ALTERNATIVES

1. That the MVRD Board:
 - a) receive for information the report dated March 25, 2021, titled “Metro Vancouver 2020 Regional Industrial Lands Inventory”; and
 - b) direct staff to distribute the report titled “Metro Vancouver 2020 Regional Industrial Lands Inventory”, to member jurisdictions, the Province, the Port of Vancouver, TransLink, the Urban Development Institute, NAIOP, Vancouver Airport Authority, Agricultural Land Commission, and Squamish Lillooet and Fraser Valley Regional Districts to support ongoing efforts to protect the region’s essential industrial land base for industrial activities.
2. That the MVRD Board receive for information the report dated March 25, 2021, titled “Metro Vancouver 2020 Regional Industrial Lands Inventory” and provide alternative direction to staff.

FINANCIAL IMPLICATIONS

There were no financial implications. The work was completed as part of the 2019-2020 Board-Approved Regional Planning budget and work program.

CONCLUSION

Metro Vancouver completed the 2020 Regional Industrial Lands Inventory as an update of the 2015 Inventory to document the current supply and use of industrial and associated lands in the region. The 2020 Inventory provides a comprehensive summary of industrial lands and their characteristics, including quantity and quality, as well as documenting change over time (2015-2020). The results also assist in continuing to monitor and implement the strategies and recommendations of the regional growth strategy and Regional Industrial Lands Strategy. It also supports member jurisdictions and other agencies in their efforts to protect and promote the efficient use of industrial lands, and provide the development community with information about available lands and opportunities.

Metro Vancouver will continue to work with member jurisdictions and agencies to advance industrial land matters. Successfully achieving the vision of the Regional Industrials Lands Strategy will require the continued close collaboration and partnership with many stakeholders, and a long-term shared commitment by Metro Vancouver and its member jurisdictions.

Attachment (44687318)

Metro Vancouver 2020 Regional Industrial Lands Inventory Technical Report, March 2021

References

1. [Metro Vancouver – Regional Industrial Lands Inventory reports \(2005, 2010, 2015\)](#)
2. [Metro Vancouver Regional Industrial Lands Strategy](#)

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Metro Vancouver 2020 Regional Industrial Lands Inventory: Technical Report

March 2021

Prepared by:
Metro Vancouver
Regional Planning

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Executive Summary

The Metro Vancouver 2020 Regional Industrial Lands Inventory ('Inventory') provides a comprehensive summary of the quantity and quality of industrial and associated lands in the Metro Vancouver region as of mid-2020. It provides information about the amount of land that is developed for industrial and other uses, and identifies lands that are vacant by type of activity and other attributes.

The objective for the 2020 Inventory is to systematically categorize industrial lands in the Metro Vancouver region using a consistent and clear set of rules. This work continues the ongoing monitoring of the region's industrial land base and supports implementation of the regional growth strategy and the Regional Industrial Lands Strategy, and associated objectives to protect and intensify industrial lands, and provide data for further analysis of industrial lands matters.

As context, Metro Vancouver is a high growth region and industrial lands are critical to trade and transportation functions that serve Canada and also serve as important locations for industry and other activities supporting a prosperous and growing regional economy. Industrial lands in the Metro Vancouver region comprise only 4% of the land base, but accommodate about 27% of the region's jobs and 30% of GDP. If accounting for direct, indirect, and induced impacts, the region's industrial lands support over 40% of the region's jobs, which have average wages that are over 10% higher than the regional average. Furthermore, business and employment activities on industrial lands contribute approximately \$9 billion in tax revenues to various levels of governments.¹

Building on past Inventories completed for 2005, 2010, and 2015, the 2020 Regional Industrial Lands Inventory quantifies the Metro Vancouver region's lands as follows, noting that the qualitative attributes (e.g. location, access, size) of the lands are as important in terms of functionality. (Note: Current land use classifications are different and independent of future-oriented land use designations.)

Inventory of Lands as of 2020

- In mid-2020 there were 11,502 hectares (28,422 acres) of lands within the Inventory study universe, as defined².
- 82% (9,387 ha) of lands were 'Developed' and 18% (2,115 ha) were 'Other / Vacant', as defined.
- Despite industrial lands being earmarked in municipal plans / policies for 'industrial use', the notion of 'Developed' does not imply all are (fully) developed and used for 'industrial purposes'. 'Other / Vacant' includes lands that have non-industrial uses. These uses impact the industrial capacity of the lands.
- Most of the lands in the Inventory are located in the southern and eastern parts of the region: 22% in Surrey, 15% in Richmond, and 14% in Delta / Tsawwassen First Nation.
- 40% of lands were classified as 'Building Intensive Industrial' use, with a range of industrial uses, along with associated accessory uses.

¹ Source: Metro Vancouver Industrial Lands: Economic Impact and Future Importance, InterVISTAS, 2019.

² The scope of lands included in the Inventory are all lands that are municipally designated (Official Community Plans, sub-area / neighbourhood plans, or equivalent) industrial, plus lands that are both zoned (or equivalent) industrial and used for industry, as of the date of the Inventory.

- 25% of the lands were used for 'Large Scale Infrastructure / Transportation' (utilities, port, airport, rail yards), which are not tracked by the market. The Inventory also included lands with non-industrial uses such as 'Retail' (4%) and 'Commercial' (4%).
- Of the 'Other / Vacant' lands in the Inventory, 3% were used for 'Resource Extraction', 2% for 'Residential', 1% for 'Agriculture', and 11% were undeveloped or fully vacant. These lands will serve as the future supply of industrial development.
- In terms of site sizes, 24% of 'Other / Vacant' lands were on sites larger than 20 ha (50 ac), which are often associated with trade-oriented uses, although some sites may not be well-located for trade-oriented uses. The available site size impacts the types of industrial users that can be accommodated.
- Long-term protection in the form of regional and/or municipal policy for industrial lands varies, with 89% of the Inventory regionally designated as either 'Industrial' (67%) or 'Mixed Employment' (22%). At the municipal level, 82% were both zoned industrial and designated industrial. Of the 'Developed' lands, most (85-95% depending on the land use) were protected with both municipal industrial designation and industrial zoning. Some 3% (390 ha) of the Inventory had municipal industrial zoning but not municipal industrial designation, thus are at greater risk for conversion into non-industrial use in the coming years.

Change in Inventory Universe Size Between 2015 and 2020

- In terms of inclusion (additions) or exclusion (removals) from the Inventory universe (which is separate from 'vacant' or 'developed' land use status) between 2015 (revised)³ and 2020: 323 ha (798 ac) of land were added, and 70 ha (174 ac) were removed. These two sets of changes resulted in a net increase of 252 ha (624 ac) of land over the five-year period.
- Most of the Inventory additions occurred in: Maple Ridge, Delta, and Port Coquitlam. Notable removals from the Inventory occurred in: Still Creek in Burnaby, Queensborough in New Westminster, Campbell Heights in Surrey, and Willoughby in Langley.

Industrial Lands Absorption Between 2015 and 2020

- In terms of absorption (vacant lands becoming developed, or vice versa) over the 2015 to 2020 period, 507 ha (1,253 ac) went from 'Other / Vacant' to 'Developed' status, while 23 ha (58 ac) of lands went from 'Developed' to 'Other / Vacant' status. This yielded a net absorption of 484 ha (1,196 ac) of lands over the five-year period, for an annual average of 97 ha (239 ac).
- The amount of 'Other / Vacant' lands decreased by 531 ha (1,311 ac) during the 2015-2020 period: 507 ha (96%) became 'Developed' via absorption, while 23 ha (4%) were entirely removed from the Inventory (due to municipal designation changes or land use changes).

Key Findings Profiled in the Report

Inventory methodology limitations are important considerations - The land use classification definitions reference the predominant or primary use of the site, including normally associated on-site accessory / ancillary uses. The classification process cannot be perfectly accurate, given the variety of different data sources and currency.

Qualitative attributes of lands matter - The Inventory comprises lands used and intended for industrial. The Inventory includes traditional and new types of industrial activities, quasi-industrial

³ The revised 2015 Inventory numbers referred to in this report reflect adjustments to noted inconsistencies, and are thus more comparable with the 2020 Inventory results.

functions, and non-industrial uses on the lands, which have different user needs. The quality of lands, such as attributes like size, location, and site features, are as important as quantity of lands.

Increasing amounts of industrial lands are used for non-industrial purposes - Conversion of industrial lands can occur in different ways. Some industrial lands are re-designated and removed from the Inventory as per municipal plans, while other lands with flexible industrial designations are rezoned to allow for non-industrial uses. Some of these other types of uses support industrial activities, while others may threaten industrial areas, such as commercial and retail beyond those accessory or supporting industrial uses.

Continued competing priorities for limited lands - The Metro Vancouver regional growth strategy and Regional Industrial Lands Strategy include industrial and other long range regional planning goals. Because of these multiple objectives, at both the regional and local levels, there are in some cases competing or even conflicting policy priorities.

Most but not all industrial lands are secured for long-term protection - Municipal policies (land use designations and zoning) and regional land use designations secure the long-term industrial use of industrial lands. Lands that do not have such policy protection are more likely to convert and redevelop to other uses, particularly lands located in Urban Centres.

Lands added to and removed from the Inventory have different locational and site attributes - During the 2015-2020 period, 323 ha of land were added to the Inventory, mostly in Surrey, Langley, and Maple Ridge, and 70 ha were removed from throughout the region. Lands were removed from the Inventory due to a number of reasons, but mostly due to municipal policy changes. Much of the lands added to the Inventory were in locations not well served relative to the region's major transportation infrastructure networks / goods movement corridors nor have other key attributes desired by the market, whereas some of the lands removed had good accessibility.

Few available large sites for 'trade-oriented' logistics uses - There are few vacant sites available for 'trade-oriented' logistics users, namely large sites with minimal constraints and close to major transportation infrastructure.

More industrial land intensification is expected over time - Most of the developed lands are substantially used, with limited immediate opportunity for redevelopment and intensification. Nevertheless, as these lands redevelop, there will be potential to densify and intensify.

The industrial land absorption rate declined due to limited raw land supply - The net land absorption (lands changing from 'Other / Vacant' to 'Developed' status) was 484 ha over the 2015-2020 period, or 97 ha per year on average. Although recorded development / absorption activity is a reflection of industrial demand, it is in fact limited by the amount of land supply, so it is not a true reflection of total demand.

Difficult to estimate lifespan of available vacant lands - The amount of development will be impacted not just by demand but also increasingly by the limited supply of available vacant industrial lands that can be brought to market, as well as redevelopment and intensification activity. Using a theoretical absorption forecast model, the 'Other / Vacant' industrial land supply might be substantially absorbed in the 2030s.

Further Study Topics - The Regional Industrial Lands Inventory can be considered and analyzed through different 'lenses' or 'filters' from different perspectives. Accordingly, building on the Inventory results, further study is possible, such as: industrial intensification, market readiness, regional land use assessment, industrial typologies, and other topics related to industrial lands, employment, economy, and transportation.

1 Introduction

1.1 Overview and Intended Outcome

The Metro Vancouver 2020 Regional Industrial Lands Inventory ('Inventory') provides a comprehensive picture of the amount and type of industrial and associated lands in the region. The Inventory contains detailed information about the quantity, use, status, and attributes of the lands in Metro Vancouver as of mid-2020. The 2020 Inventory, with 30 detailed land use classifications, also allows for a comparison with the past Inventory (namely 2015, as revised) to track change over time, land development / absorption patterns, and inform possible further work.

1.2 Objectives

The purpose of the Inventory is to report the status of the quantity and quality of industrial lands in the region with an aim to improve the understanding of the different types of lands and uses, and inform decision-makers and further studies and policy work. The Inventory provides accurate and nuanced information about the amount of land that is used for industrial and other associated lands, and types of activities on the lands, as well as other attributes.

The objectives of the Inventory and this report are to:

- provide information about the region's supply of industrial lands as of mid-2020;
- illustrate changes between the 2015 (revised) and 2020 Inventories;
- inform dialogue and policies about industrial lands issues in the region;
- support further actions to advance industrial lands protection and intensification; and
- inform regional planning performance measuring and reporting.

1.3 Application

The Inventory provides detailed information about the region's industrial land supply, and allows for focused analysis on particular areas of interest (geographic, industrial sectors, type of land uses, etc.). The 2020 (and 2015 revised) Inventory methodology includes a range of land use classifications to portray the region's functional industrial land supply.

As further explained in Appendix 10, the revised 2015 Inventory numbers referred to in this report reflect adjustments to noted inconsistencies, and are thus more comparable with the 2020 Inventory results. These 2015 numbers replace the previously published numbers in the 2015 Inventory report.

The Inventory documents the type of use occurring on lands, and informs the potential to accommodate additional industrial activities. Industrial land uses can be compared between different areas of the region to assess differences and similarities, as well as areas with potential under-utilized lands or areas at risk of conversion. It can inform regional and municipal planning processes and work, as well as infrastructure investments by agencies and private sector decisions, such as supporting:

- refinement of municipal and regional industrial plans and policies;
- refinement of municipal zoning bylaws;

- preparation of area plans and employment projections;
- preparation of tools to encourage the development and intensification of industrial lands;
- the development community with information about available industrial lands; and
- appropriate economic and employment growth.

The Inventory sets the stage for -- as separate studies -- the assessment of lands based on their potential industrial development in terms of redevelopment or intensification / densification, reflecting features and criteria such as area opportunities / constraints, proximity to transportation infrastructure, and other key factors. This analysis can estimate the amount of vacant industrial lands in the region that could likely be developed over time and also which types of industrial activities could be accommodated on them. (Note: Current land use classifications are different and independent of future-oriented land use designations.)

Identifying specific lands that have the greatest potential for industrial (re)development and intensification will also inform other planning initiatives, including municipal and sub-area / neighbourhood plans, policies to advance industrial land redevelopment in specific areas, and exploration of appropriate regulations and incentives to encourage industrial investment.

Further work on the industrial lands portfolio may relate to industrial land demand, documenting the land needs of industrial users by sector or typology, considering alternative means to accommodate anticipated industrial growth in the region, efficient goods movement options, market readiness of lands, and intensification / densification potential.

1.4 Policy Context

Metro Vancouver 2040: Shaping Our Future ('Metro 2040'), the regional growth strategy, adopted in 2011 (and being reviewed and updated in 2020-2022), includes regional land use designations and policies to protect industrial lands, encourage industrial intensification, and coordinate efficient goods movement infrastructure to serve industry.

Metro 2040 provides a policy response to a number of challenges, including both the need to ensure an adequate supply of space for industry and commerce as well as the importance of protecting the natural and agricultural land base in the region. The Inventory supports the goals of *Metro 2040*, specifically providing information to protect the supply of industrial lands and encourage industrial intensification.

The *Metro 2040* regional land use designations identify regionally significant industrial lands. Industrial activities (along with some accessory uses) are mostly accommodated on lands designated 'Industrial' and 'Mixed Employment'. *Metro 2040* 'Industrial' lands, followed by 'Mixed Employment' lands, have the greatest level of importance for industry and thus level of policy protection. 'General Urban' designated lands, with various municipal designations and zoning, also accommodate industrial activities, but the level of policy protection is much less.

Metro 2040 has six regional land use designations. These designations are parcel-based and apply to the entire region. Two of these designations are for industrial related uses, described as follows:

- *Industrial areas are primarily intended for heavy and light industrial activities, and appropriate accessory uses. Limited commercial uses that support industrial activities are appropriate. Residential uses are not intended.*
- *Mixed Employment areas are intended for industrial, commercial and other employment related uses to help meet the needs of the regional economy. They are intended to continue to support industrial activities, and complement and support the planned function of Urban Centres and Frequent Transit Development Areas. Mixed Employment areas located within Urban Centres and Frequent Transit Development Areas provide locations for a range of employment activities and more intensive forms of commercial development.*

Mixed Employment areas located outside of Urban Centres and Frequent Transit Development Areas are primarily intended for industrial and commercial uses that would not normally be attracted to these locations. Mixed Employment areas located outside of Urban Centres and Frequent Transit Development Areas may contain office and retail uses provided that they are at lower densities than typically higher density Urban Centres and Frequent Transit Development Areas and in locations well served by transit or have committed expansions to transit service. Residential uses are not intended in Mixed Employment areas.

The precise types of industrial activities intended and permissible are explained in regional context statements, which are prepared by member municipalities and accepted by the Metro Vancouver Board, as well as municipal land use plans and zoning bylaws.

Metro 2040 also supports other long range regional planning goals, such as accommodating population and employment growth, focusing commercial and housing development in Urban Centres, protecting agricultural and environmental lands, and supporting sustainable transportation.

The Regional Industrial Lands Strategy, completed in 2020, establishes a vision for the future of industrial lands across Metro Vancouver to the year 2050, and provides a set of recommendations to guide a broad range of stakeholder actions to achieve that vision.

As identified in the Strategy, the four main challenges facing Metro Vancouver's industrial lands are:

1. A constrained land supply
2. Pressures on industrial lands
3. Site and adjacency issues
4. A complex jurisdictional environment

In response to these challenges, the Strategy contains 34 recommendations with 10 priority actions, organized around four 'Big Moves':

1. Protect remaining industrial lands
2. Intensify and optimize industrial lands
3. Bring the existing land supply to market & address site issues
4. Ensure a coordinated approach

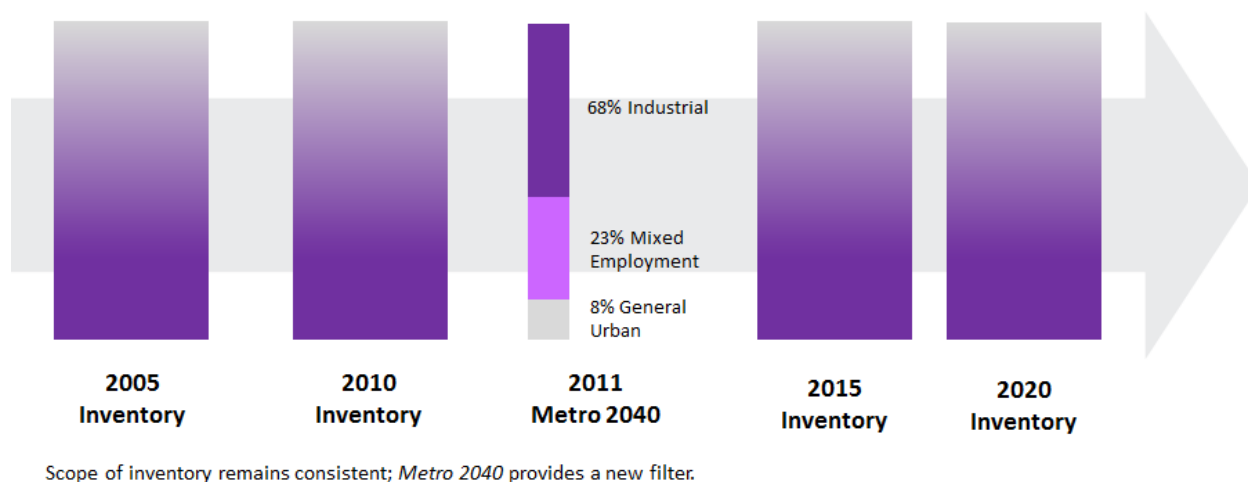
2 Industrial Lands Supply

2.1 Universe of Regional Industrial Lands Inventory

Metro Vancouver's regional interest in industrial lands emerged in the early 2000s. At that time, concern about the ongoing conversion of industrial lands to other uses became more prevalent and the scale of conversion, coupled with concern about a dwindling supply of available industrial land, led to the creation of a regional industrial lands taskforce, comprised of municipal members, that guided the completion of the first of the Regional Industrial Lands Inventories.

The types of lands included in the series of Regional Industrial Lands Inventories were based on municipal designation and zoning. This definition of industrial lands or the universe of the Inventory has remained consistent for the Inventories, which allows for comparison over time and tracking of lands (with some limitations, because of changing interpretation of municipal policies and data availability). The Inventory can also be analyzed relative to regional land use designations, as illustrated in the below figure.

Figure 2.1: Metro Vancouver Regional Industrial Lands Inventories



The Inventories include 'Developed' industrial lands, spanning various industrial uses, quasi-industrial activities, and non-industrial uses, as well as 'Other / Vacant' lands that are vacant of industrial uses.

The universe or scope of lands included in the Regional Industrial Lands Inventory are all lands that are municipally designated (Official Community Plans, sub-area / neighbourhood plans, or equivalent) industrial, plus lands that are both zoned (or equivalent) industrial and used for industry, as of the date of the Inventory. Specifically, the Inventory universe consists of the lands that have one or more of the attributes listed in the below table. There are also smaller-scale industrial activities occurring on other lands not included in the Inventory.

Table 2.1: Lands Included in the Regional Industrial Lands Inventory

		MUNICIPAL LAND USE DESIGNATION	
		Designated Industrial	Designated Non-Industrial
DEVELOPED INVENTORY	Zoned Industrial	✓	✓
	Zoned Non-Industrial	✓	X
VACANT INVENTORY	Zoned Industrial	✓	X
	Zoned Non-Industrial	✓	X

✓ = included in Industrial Lands Inventory X = not included in Industrial Lands Inventory

Properties that were not designated industrial, but were zoned industrial (or zoned as comprehensive development with allowable industrial uses) and developed / used as industrial, were included and classified as 'Developed' (see definitions in Appendix 9).

The Inventory incorporates the Port of Vancouver, Vancouver International Airport (YVR), and Metro Vancouver's respective plan land use designations. All airport and port lands were included within their respective local host municipality. Known industrial lands on First Nation Reserves were included in the Inventory, and lands within the Tsawwassen First Nation were included.

The Inventory is generally considered at the parcel level. In some cases, it was appropriate to combine multiple legal parcels and associated data that are a functional industrial operation / business into a single 'site'. Only in unique or exceptional circumstances are properties 'split' into two sites for Inventory purposes (e.g. sites having more than one designation).

More particularly, 'Developed' and 'Other / Vacant' lands are defined as follows, as of the date of the Inventory:

- **'Developed'** lands are those with industrial and quasi-industrial uses. They also include lands with some non-industrial uses that are building intensive and not likely to redevelop to industrial uses. These uses include stand-alone retail and office, as well as media production, banquet hall / assembly, education / training, and recreation. These commercial uses are included in the Inventory because they are located on lands that are municipally designated industrial. Lands with visible outdoor storage are deemed to be 'Developed'. Lands with construction activity are also classified as 'Developed'.
- **'Other / Vacant'** includes lands that are totally vacant, as well as lands that have non-industrial holding uses that are likely to (re)develop to industrial uses. Specifically, this includes lands that are municipally designated Industrial, but are used for agriculture, residential, or resource extraction.

Some lands were at different stages of the development approval or permitting process at the time of the Inventory 'snapshot' date. If lands are undeveloped at that time, they were classified as 'Vacant' or as a non-industrial use, even if there is an active development application in process,

indicating imminent development. The development may be for a specific tenant, or built on speculation for an as-yet identified tenant.

2.2 Geographic Areas

Metro Vancouver (the Metro Vancouver Regional District) has 23 member jurisdictions, although only 16 have industrial lands. There are 9 geographic sub-regions for the purposes of reporting Inventory results. The following table and map show the sub-regions and municipalities .

The Inventory data was compiled at the site level and summarized by municipalities, sub-regions, and for the region as a whole. The majority of the Inventory data in the body of the report is presented at the regional and sub-regional levels; municipal level data is in Appendices 2 - 8.

Table 2.2: Geographic Sub-Regions and Municipalities

Sub-Region:	Municipalities included:
North Shore	City of North Vancouver, District of North Vancouver, <i>District of West Vancouver, Village of Lions Bay</i>
Vancouver	City of Vancouver, University of British Columbia / <i>University Endowment Lands (within the Electoral Area)</i>
Burnaby / New Westminster	City of Burnaby, City of New Westminster
North-east Sector	City of Port Moody, City of Coquitlam, City of Port Coquitlam, <i>Village of Anmore, Village of Belcarra</i>
Richmond	City of Richmond (including Vancouver International Airport)
Delta / TFN	City of Delta, Tsawwassen First Nation
Surrey / White Rock	City of Surrey, <i>City of White Rock</i>
Langley	City of Langley, Township of Langley
Ridge – Meadows	City of Maple Ridge, City of Pitt Meadows

The municipalities in the table noted with *italics* do not contain any industrial lands as defined in this report.

Map 2.1: Geographic Sub-Regions



2.3 Factors Affecting Industrial Lands Capacity

Industrial lands are not all equally appropriate or viable for different types of industrial users, and location and site features are important factors for industrial users. There are various constraints that can affect the development capacity of industrial lands, for example location and site features. It is important to note that the lands inventoried and amounts reported are gross areas; various types of constraints or limitations will reduce the net developable amount of land.

Some lands have site-specific constraints, or pre-existing uses that may make it difficult to (re)develop with intensive industrial uses. Additionally, environmental constraints and natural hazards may reduce the amount of land that is potentially developable for industrial uses. Other constraints include: location and accessibility, established non-industrial uses, the availability of needed infrastructure for development, ownership patterns affecting land assembly, and smaller sites that may not be adequate for certain types of industrial development.

Some types of industries are better able to be accommodated in a wider range of locations, whereas other industries must have direct and reliable access to transportation infrastructure and other features. For example, businesses involved in trade, transportation, and logistics, proximity to highways, port terminals, and rail yards are of vital importance. Accordingly, poorly-located industrial lands are not an option for these types of users; other industries have less specific needs and can be accommodated in a wider range of locations.

Also of note, some lands may have legal / tenure or use limitations, such as lands owned by the airport authority which are restricted to airport related uses or port lands restricted to port related activities, but can still accommodate some forms of industry. Further, because of site constraints or land ownership patterns, as well as location and market factors, some lands may not be developed for some time. All of these factors will affect the potential for the industrial land supply to meet demand.

3 Lands Inventory Methodology

3.1 Approach

Metro Vancouver regional planning staff developed the methodology for the 2020 Inventory, building on past Inventories (2015, 2010, 2005), which was informed through discussions with municipalities, industry, and other stakeholders. The objective for the methodology is to create a clear set of rules that can be consistently applied using available information to systematically categorize industrial lands in the Metro Vancouver region.

While parts of the 2020 Inventory classification system are designed to be comparable with past Inventories to enable the measure of change over time, changes in the interpretation of municipal policies between Inventories have limited such comparisons. The 2015 Inventory was revised to permit comparison to the 2020 Inventory; the ability to compare with the earlier 2005 and 2010 Inventories have greater limitations.

The methodology outlines the sources from which data has been compiled, the scope or universe of lands included in the Inventory, and the definitions of the land use classifications. The ownership of the land, municipal zoning, municipal designation, regional designation, and other attributes, which may impact use and utilization, were also collected. Appendix 10 includes the details of the Inventory methodology and Appendix 11 includes the data collected.

3.2 Inventory Data Sources

Available data from multiple sources was linked together with an internal GIS system to create the database. Information used in the 2020 Inventory included:

- Parcel Map BC (2020 property parcels)
- BC Assessment Authority property information (2020)
- Municipal Business Licenses (2019-2020)
- Municipal Zoning and OCP Designation GIS files
- Orthophoto image (flown in 2018)
- Google Earth orthographic image (2018-2019)
- Industrial Brokerages (industrial site information)
- Draft review and guidance from municipal planning staff, industrial brokerage firms, plus YVR and Port representatives

Metro Vancouver would like to thank participants for their input and contribution throughout this process.

3.3 Improved Methodology for 2020 Inventory

In 2005 and 2010, Metro Vancouver completed Inventories of the industrial lands in the region. For those earlier Inventories, Metro Vancouver considered only whether the land was 'Developed' or

‘Vacant’ (as defined in those publications). In actuality, industrial lands have different types of uses, levels of utilization, and (re)development potential due to various site and area factors or characteristics.

With the availability of better information and additional technical work, the 2015 and 2020 Inventories include an enhanced data collection and classification system to address limitations inherent in earlier Inventories (2005 and 2010). Building on further work, the 2020 Inventory (as well as the revised 2015 Inventory) provides enhanced information about the industrial land supply through land use classifications, which provides fine-grain detail of the different types of uses on the lands.

3.4 Land Use Classifications and Definitions

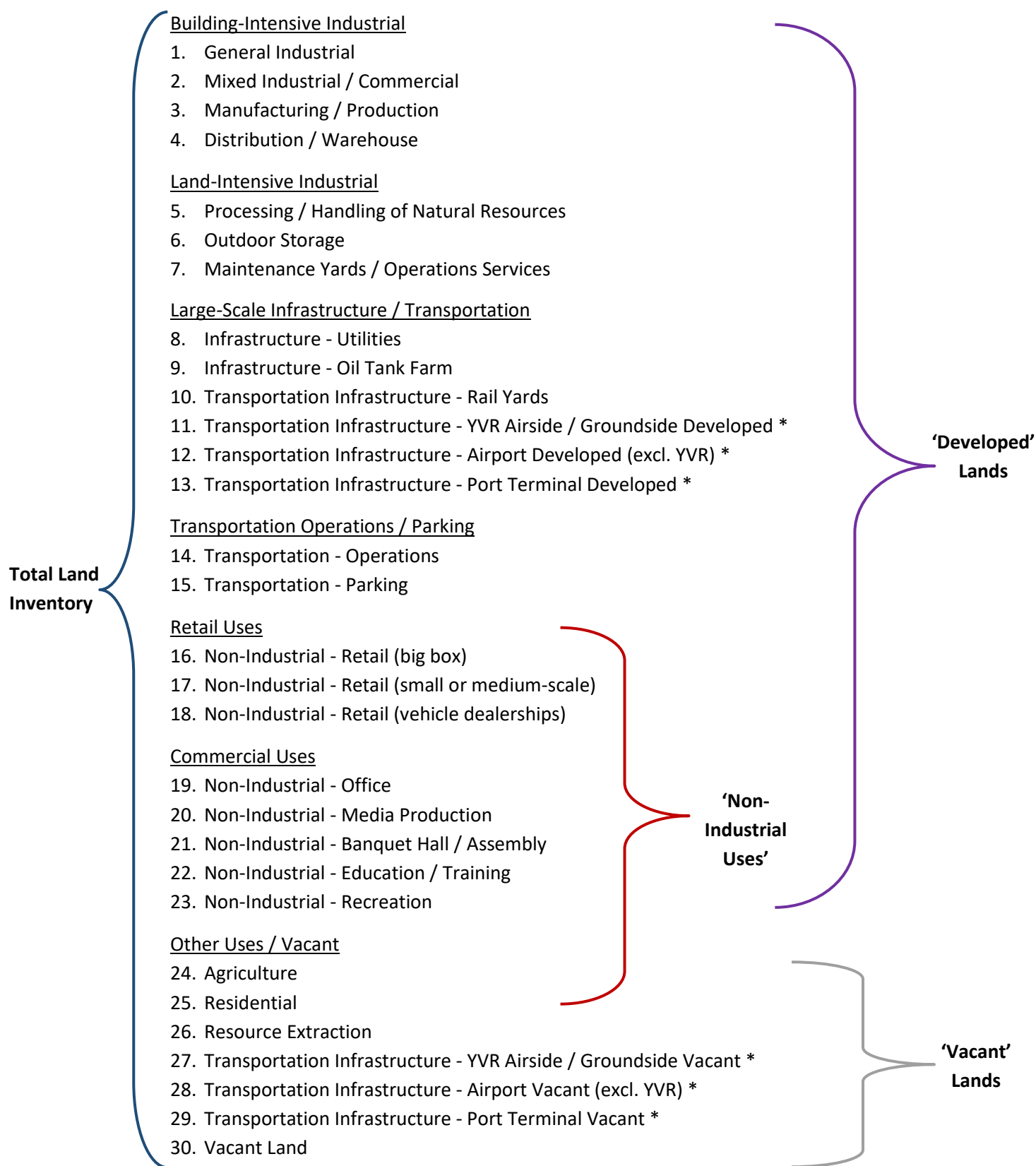
On the following page is the list of 30 land use classifications for the 2020 Inventory (full definitions are provided in Appendix 9), which provide a detailed and nuanced understanding of the industrial lands supply. For reporting purposes, these detailed land use classifications have in some cases been consolidated into 7 categories, as organized in the following figure.

The land use classification definitions reference the predominant or primary use of the site, including normally associated on-site accessory / ancillary uses (including parking and loading areas), as of mid-2020. Properties may include multiple or overlapping and non-discrete uses, in which case the predominant use is considered for the classification.

The process of classifying land uses was based on available information ranging from orthographic photos, business records, municipal permits, etc. It is acknowledged that the classification process cannot be perfectly accurate, given the variety of different data sources and currency. This limitation of selecting a single classification for each site is particularly acute in cases where there is a wider range of uses on lands or multiple level buildings. (In 2015, nearly half (47%) were within the broad category of ‘Building Intensive - General Industrial’, whereas for 2020, new land use classification categories were created, so as to reduce the amount of lands classified as ‘General Industrial’ to 40%).

* Note: These lands may have restrictions on tenure, use, and development and not available for general market industrial, but permit uses that are port or airport compatible. For more detailed information, refer to the YVR Master Plan or Port of Vancouver Land Use Plan, as applicable.

Figure 3.1: List of Detailed and Consolidated Land Use Classifications



3.5 Unique Types of Lands

There are a number of unique types of industrial and associated lands and uses in the region. These lands may have special attributes such as limitations on use, tenure, or development. For example, restrictions may apply to Vancouver International Airport and Port of Vancouver lands. Additionally, airport and port lands, as well as those on Tsawwassen First Nation and First Nation Reserves, are only available to tenants as lease tenure rather than fee simple ownership. There may also be lands used for rail yards and infrastructure / utilities that are not 'market' lands. These types of lands may not necessarily be available to develop as all forms of industrial, but still support industrial and associated economic and transportation functions.

The below text explains some unique types of lands included in the Inventory.

Airports

Airports are a unique land use, and facilitate the transport of people and goods. Airport facilities and associated operations may have some industrial components, and other semi-related uses and activities. For the airports in the region (YVR, Pitt Meadows, Delta, and Langley), the runways and airfields are not included in the Inventory, nor are the terminal buildings / lands. Airside and groundside industrial lands ('Developed' or 'Other / Vacant') are included in the Inventory. Most of the developed industrial lands are used for airport maintenance and storage hangers.

Specifically for YVR Vancouver Airport Authority on Sea Island, it is important to note that these lands are distinct in terms of ownership, use, and development potential. These airport lands are neither municipally designated nor zoned, and not intended necessarily for conventional industrial purposes. YVR's Master Land Use Plan indicates how these lands are to be used; some to support the transportation gateway function, some to generate non-aeronautical revenue, and some for industrial type purposes associated with airport activities. Aeronautical restrictions may render some of the land inappropriate for development with restrictions to some degree.

Ports

Ports are a unique, water-dependent use that facilitate the import and export of goods by ship through different types of terminals, as well as people by way of cruise ship terminals. Port lands include a variety of different types of industrial and quasi-industrial uses and marine related activities, as well as lands owned by the port and leased to tenants with port-associated activities. The Port of Vancouver Land Use Plan indicates how these lands are to be used.

For the various port facilities fronting the ocean and river, the port terminal and docks are included in the Inventory as 'Transportation Infrastructure – Port Terminal', either 'Developed' or 'Vacant'. Surrounding non-port lands are classified according to their predominate use. Water lots do not have any land use classification and are not included in the Inventory.

3.6 Methodology Notes

It is also important to note the following when reviewing the Inventory results:

- All references to land areas are gross calculations – net developable areas are less;
- All references to land areas are in hectares (ha), unless otherwise noted;
- All references to land areas are as of the middle of the noted year;
- Classifications reflect actual use of the lands, as of mid-2020, not necessarily the zoning, designation, nor potential use of the lands;
- Current land use classifications are independent of future-oriented land use designations;
- The revised 2015 Inventory numbers in this report replace the previously published numbers in the 2015 Inventory report;
- Classification definitions reference the primary or predominant use of the site, including normally associated on-site accessory / ancillary uses, such as parking and loading areas;
- Properties may include multiple or overlapping and non-discrete uses, in which case the predominant use is considered for the classification;
- Although some lands do not have large buildings, they are still substantially utilized with outdoor activities;
- A 'site' may represent multiple separate legal properties consolidated for the purposes of the Inventory analysis;
- Only in unique circumstances are properties 'split' into two sites for Inventory purposes;
- Unassociated abutting properties could be consolidated to create larger developable sites to potentially accommodate larger industrial users; and
- Not all lands in the Inventory are viable for all types of industrial uses.

3.7 Report Limitations

During the course of preparing the Inventory, a number of limitations were identified and addressed as best as possible. These included: imperfect data; varying interpretations coupled with a desire to maintain consistency; multiple uses on a single site; 'shades of gray' between different types or levels of uses; type of use not always clear; and municipal plans that include 'mixed employment' designations / zoning that allow for a range of uses, both industrial and non-industrial. Also, data sources are from different periods, and accuracy cannot be confirmed in all cases.

This Inventory and report should not be relied upon to make site specific planning or development decisions or investments.

4 Regional Industrial Lands Inventory Results

The Metro Vancouver 2020 Regional Industrial Lands Inventory data was analyzed in several ways: by geography (regional, sub-regional, municipal), land use classification (detailed, consolidated), regulatory overlay (regional designation, municipal designation, municipal zoning), ownership (private, public, other), tenure (strata, fee simple), and site size. Further reporting about the development potential of the lands in the Inventory, such as proximity to transportation infrastructure and other features, and site physical constraints, may be explored in future studies.

This section begins by describing the Inventory at regional and sub-regional levels, with figures, tables, and maps. Detailed maps at the sub-regional level are in Appendix 1. Detailed tables at the sub-regional and municipal level are in Appendices 2-8. All land areas, unless otherwise stated, are in hectares (HA) and gross areas.

4.1 Industrial Lands Inventory

The Inventory (as defined further in this report) consists of 11,502 hectares (28,422 acres) of land.

4.1.1 Sub-Regions

The below figure and table show the amount and distribution of the Inventory lands among the nine sub-regions. The majority of the lands are located in the South of Fraser municipalities. Specifically, the largest areas and markets were:

- 2,534 ha in Surrey (22% of the Inventory)
- 1,741 ha in Richmond (15% of the Inventory)
- 1,655 ha in Delta / Tsawwassen First Nation (14% of the Inventory)

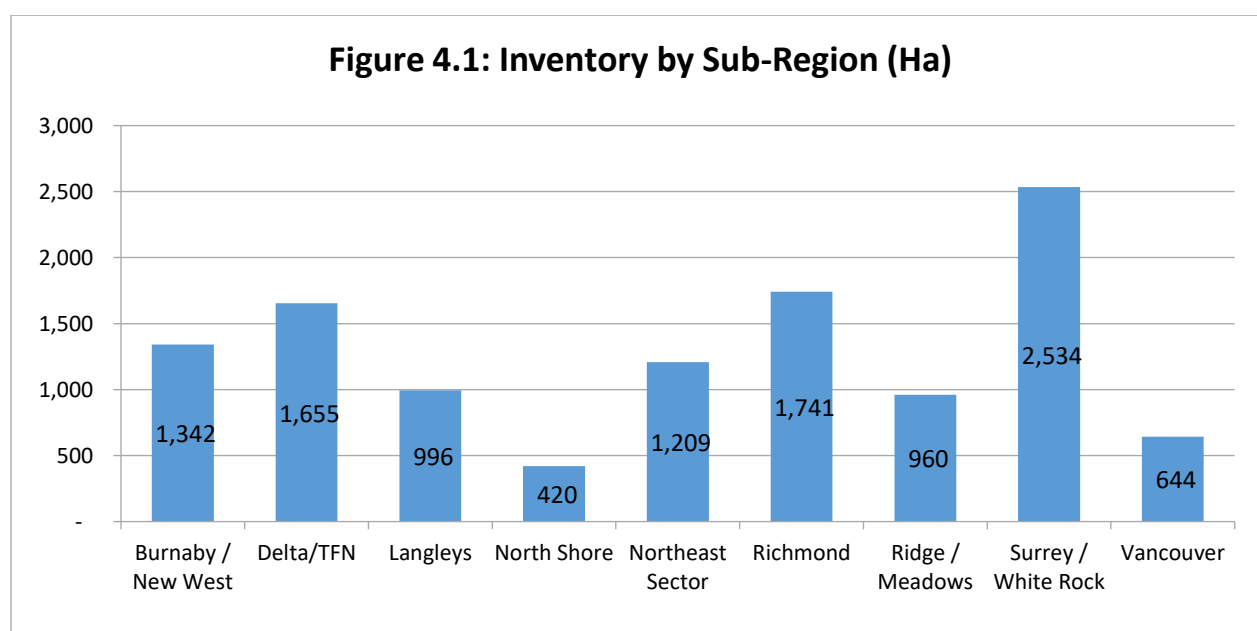


Table 4.1: Inventory by Sub-Region and Municipality

Sub-Region / Municipality	# of Land Area		Avg Parcel Size - HA	% of Total Lands
	Parcels	HA		
Burnaby/New West	1,317	1,342	1.0	12%
Burnaby	1,164	1,144	1.0	10%
New West	153	198	1.3	2%
Delta/TFN	720	1,655	2.3	14%
Delta	701	1,527	2.2	13%
TFN	19	128	6.7	1%
Langley	809	996	1.2	9%
Langley City	133	85	0.6	1%
Langley Twp	676	912	1.3	8%
North Shore	444	420	0.9	4%
North Van City	129	136	1.1	1%
North Van Dist	315	284	0.9	2%
Northeast Sector	582	1,209	2.1	11%
Coquitlam	256	326	1.3	3%
Port Coquitlam	249	439	1.8	4%
Port Moody	77	444	5.8	4%
Richmond	1,118	1,741	1.6	15%
Richmond	1,118	1,741	1.6	15%
Ridge/Meadows	306	960	3.1	8%
Maple Ridge	275	735	2.7	6%
Pitt Meadows	31	226	7.3	2%
Surrey/White Rock	1,823	2,534	1.4	22%
Surrey	1,823	2,534	1.4	22%
Vancouver	1,450	644	0.4	6%
Vancouver	1,450	644	0.4	6%
Total	8,569	11,502	1.3	100%

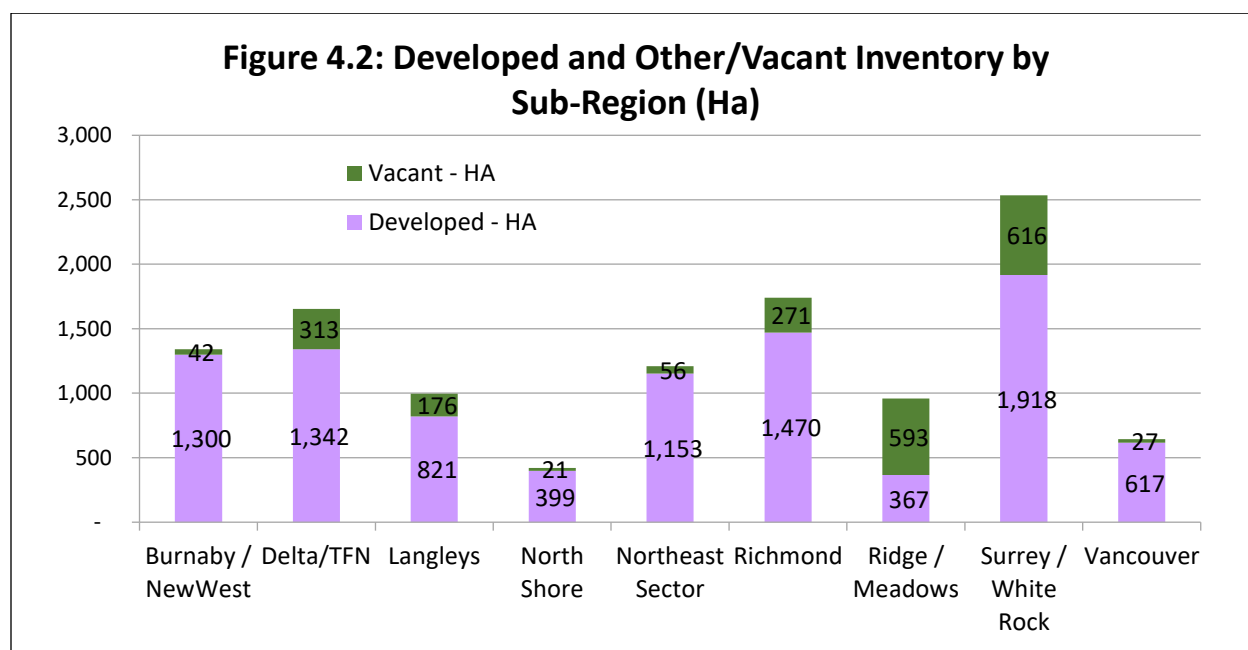
4.1.2 Developed and Vacant Inventory

The 11,502 hectares of land in the Inventory have been categorized using 30 detailed land use classifications, which can be consolidated into seven groups, and further reported as two main categories, as was done in past Inventories:

- **‘Developed’** (23 categories) – 9,387 ha (82% of the Inventory)
- **‘Other / Vacant’** (7 categories) – 2,115 ha (18% of the Inventory)

By sub-region, the following table shows the distribution of ‘Developed’ and ‘Other / Vacant’ lands. The proportion of lands by sub-region varies greatly, with few ‘Other / Vacant’ lands in Vancouver and the North Shore, and more ‘Other / Vacant’ lands in the southern and eastern parts of the region.

Of all the ‘Other / Vacant’ lands in the region, 29% were in Surrey and 28% in Ridge-Meadows, however much of the latter lands were located far away from transportation infrastructure. See below figure and table for greater detail.

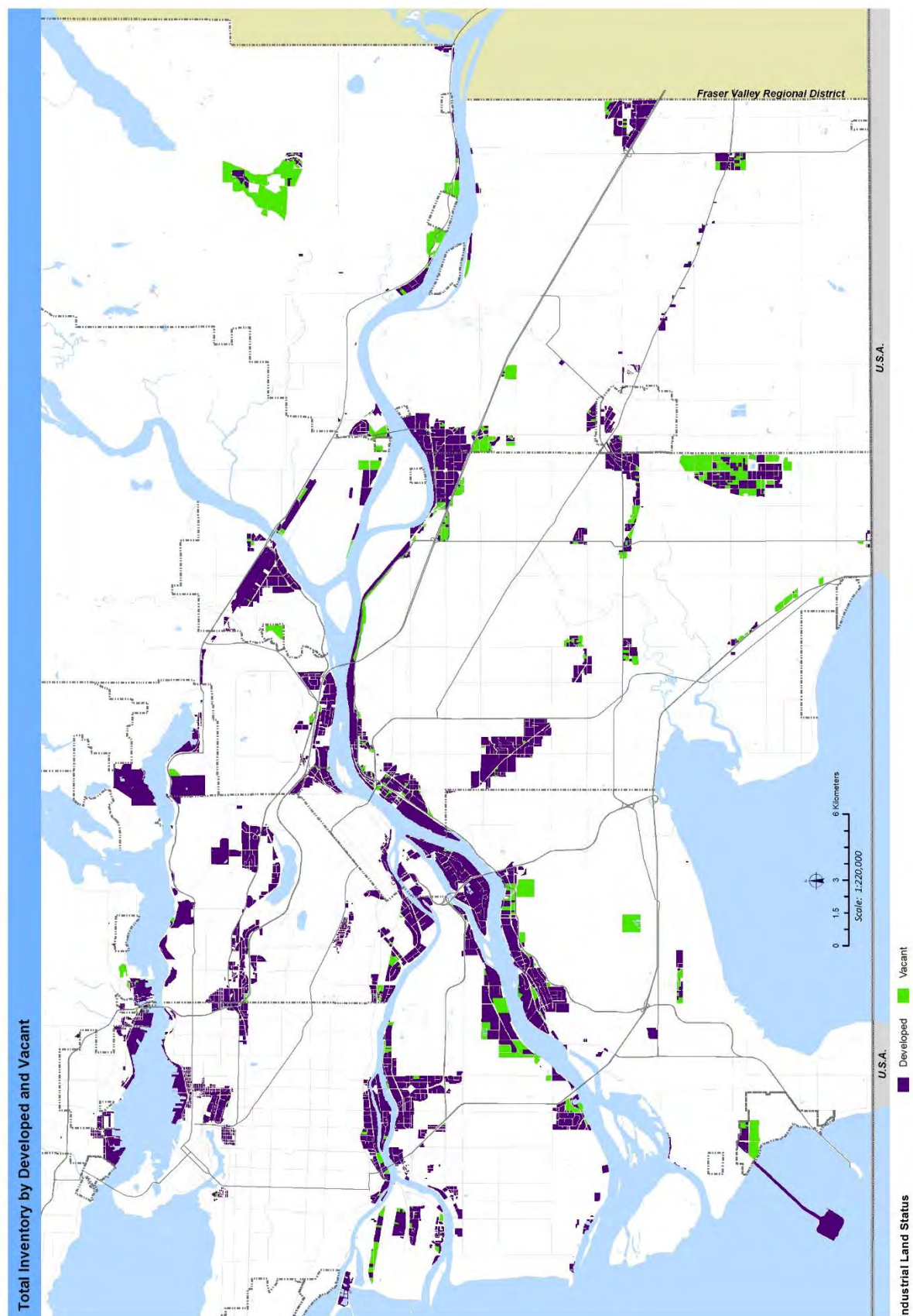
**Table 4.2: Percentage Share of Other/Vacant Lands by Sub-Region**

Sub-Regions	Developed - HA	Vacant - HA	Total Area - HA	% of Sub-Region's Lands Vacant	% Share of Region's Vacant Lands
Burnaby / NewWest	1,300	42	1,342	3%	2%
Delta/TFN	1,342	313	1,655	19%	15%
Langleys	821	176	996	18%	8%
North Shore	399	21	420	5%	1%
Northeast Sector	1,153	56	1,209	5%	3%
Richmond	1,470	271	1,741	16%	13%
Ridge / Meadows	367	593	960	62%	28%
Surrey / White Rock	1,918	616	2,534	24%	29%
Vancouver	617	27	644	4%	1%
Total	9,387	2,115	11,502	18%	100%

The following map shows the 'Developed' and 'Other / Vacant' lands in the region. Significant parts of the Inventory are located along the Fraser River, including Tilbury and Annacis Island in Delta, South Westminster in Surrey, south Coquitlam, as well as lands in Port Coquitlam and Port Kells in Surrey / Langley. Other notable areas are on the north and south sides of the Fraser River in Richmond and Vancouver, the North Shore, and Port Moody. Also, there are many industrial sites located throughout Burnaby, Surrey, and Langley.

The largest areas of 'Other / Vacant' lands can be found in south-east Surrey (Campbell Heights), north-east Maple Ridge, and on the Tsawwassen First Nation lands (by Roberts Bank Terminal), as well as some large sites in Delta.

Map 4.1: Inventory by Developed and Vacant Status



4.1.3 Land Use Classifications

Inventory lands are classified into 7 land use categories as shown in the following figure and table by sub-region. The largest category was 'Building Intensive - General Industrial' (40% of total), followed by 'Large Scale Infrastructure / Transportation' (25%). Other types of land uses, some of which are non-market industrial uses, make up smaller parts of the Inventory. Approximately 8% of the Inventory lands were used for 'Retail' and 'Commercial' (4% each) occurring on lands designated industrial, which puts further pressure on the limited industrial land base. The lands that were 'Other / Vacant' represent 18% of the Inventory.

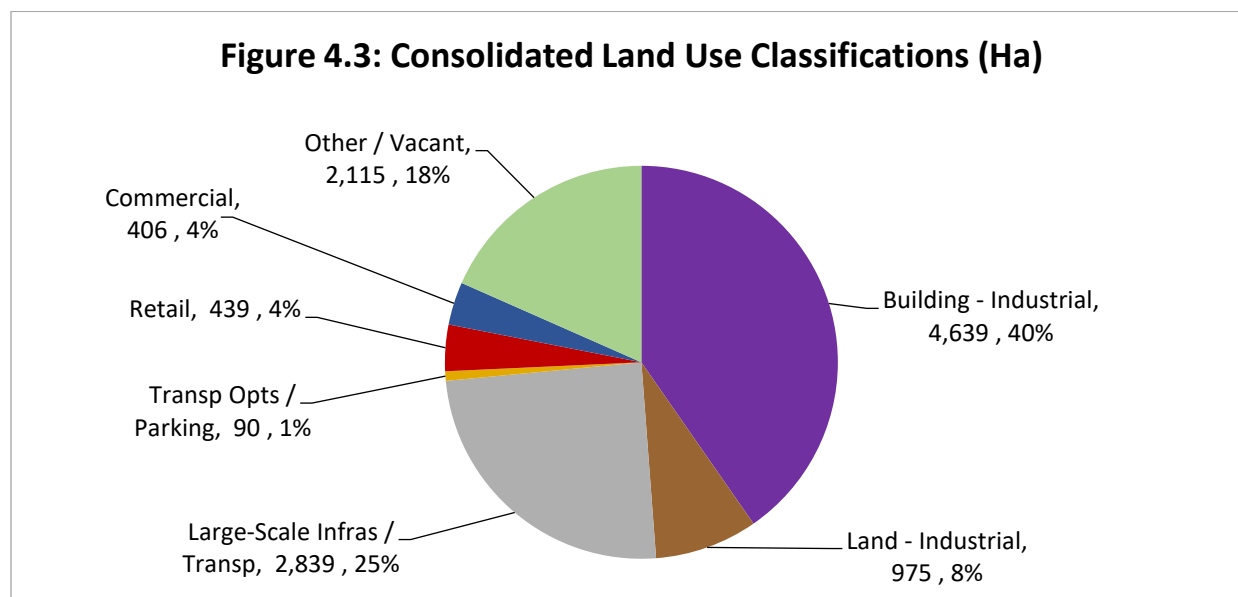
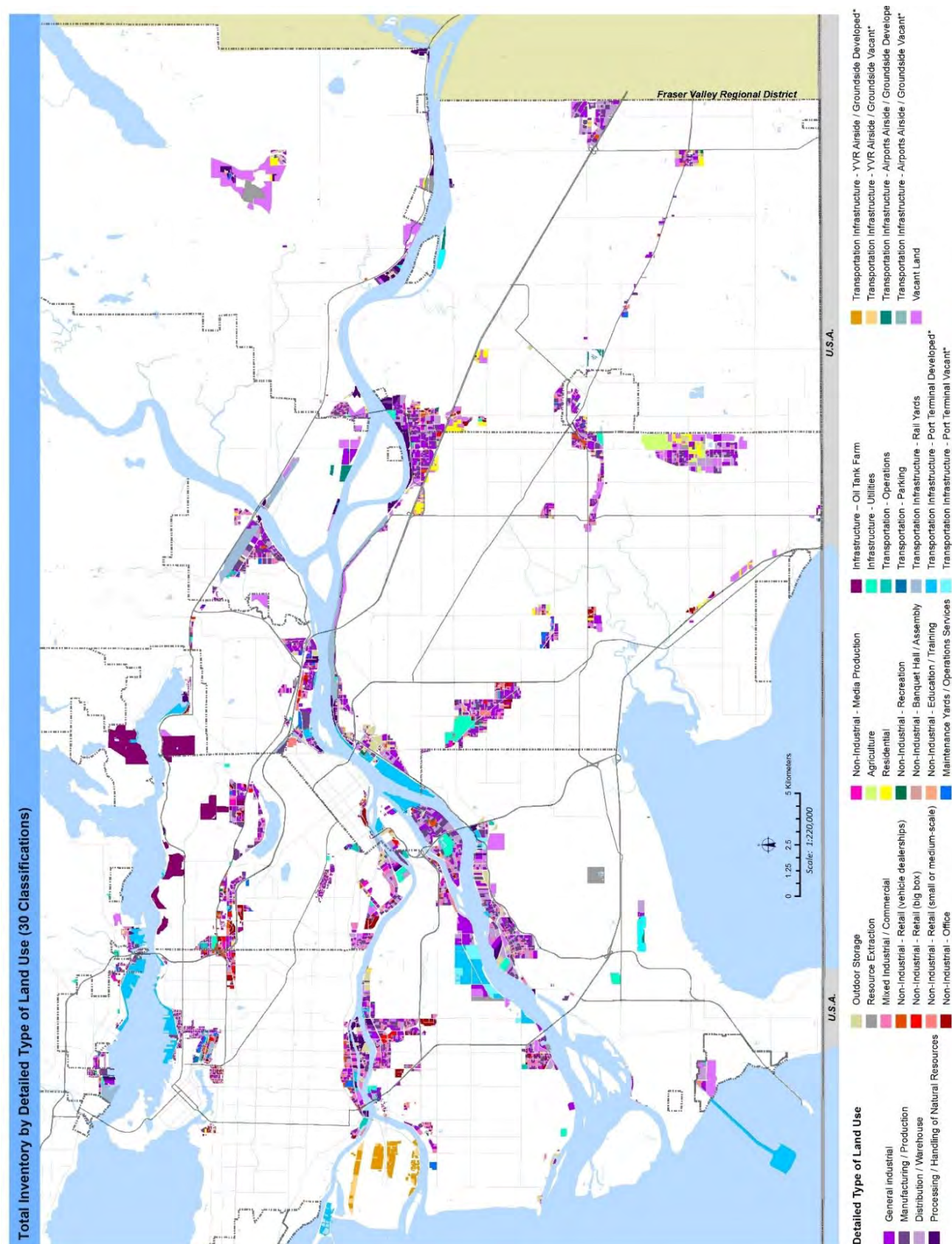


Table 4.3: Inventory by Consolidated Land Use Classifications

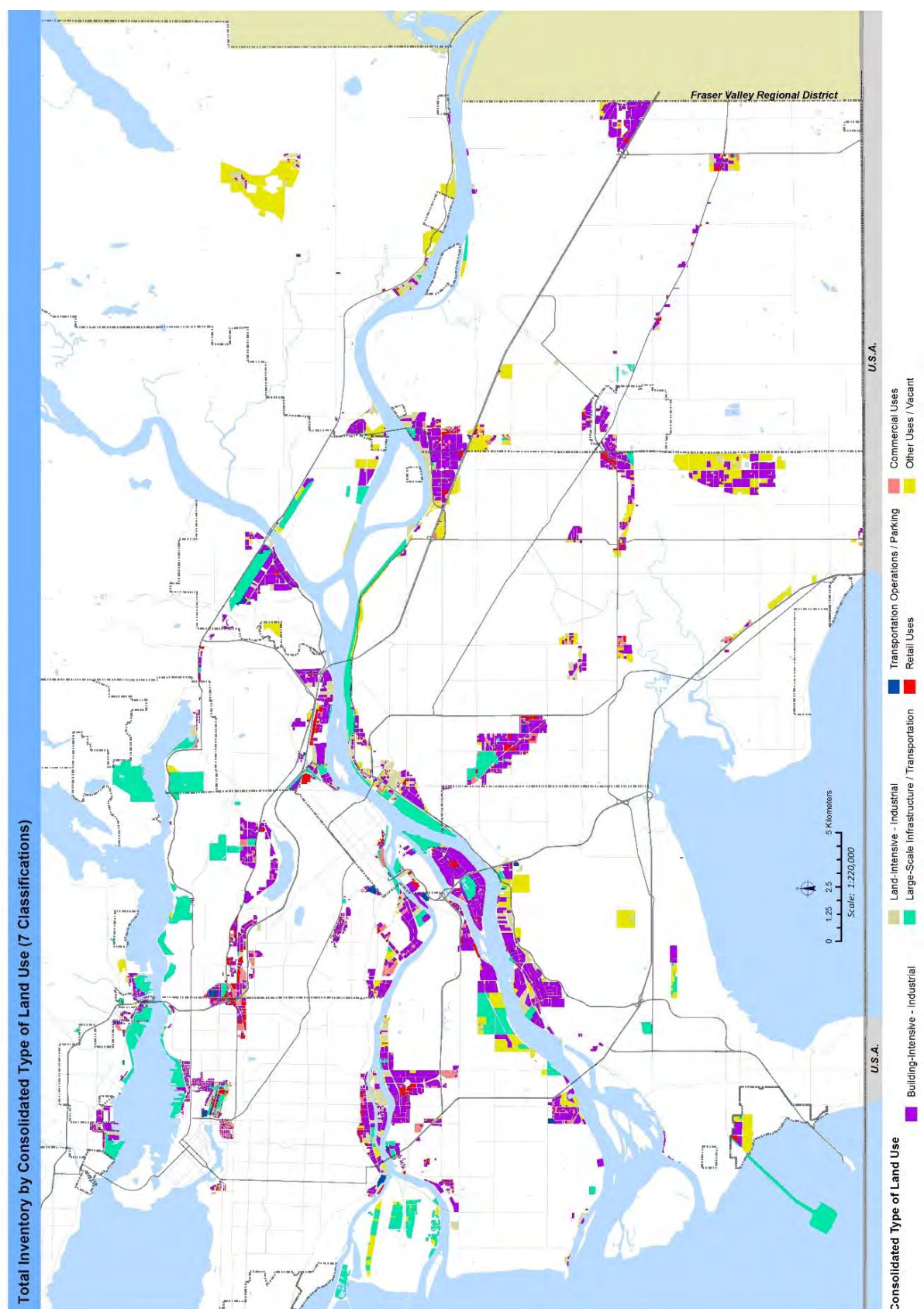
Land Use Category	# of Parcels	Area - HA	Avg Parcel	% of Total Lands
Building - Industrial	5122	4,639	0.9	40%
Land - Industrial	648	975	1.5	8%
Large-Scale Infrs / Transp	429	2,839	6.6	25%
Transp Opts / Parking	63	90	1.4	1%
Retail	629	439	0.7	4%
Commercial	583	406	0.7	4%
Other / Vacant	1095	2,115	1.9	18%
Total	8569	11,502	1.3	100%

The following two maps show the detailed and consolidated land use classifications for the region, respectively. The largest category is 'General Industrial', shown as a shade of dark purple on the map.

Map 4.2: Inventory by Detailed Type of Land Use (30 Classifications)



Map 4.3: Inventory by Consolidated Type of Land Use (7 Classifications)



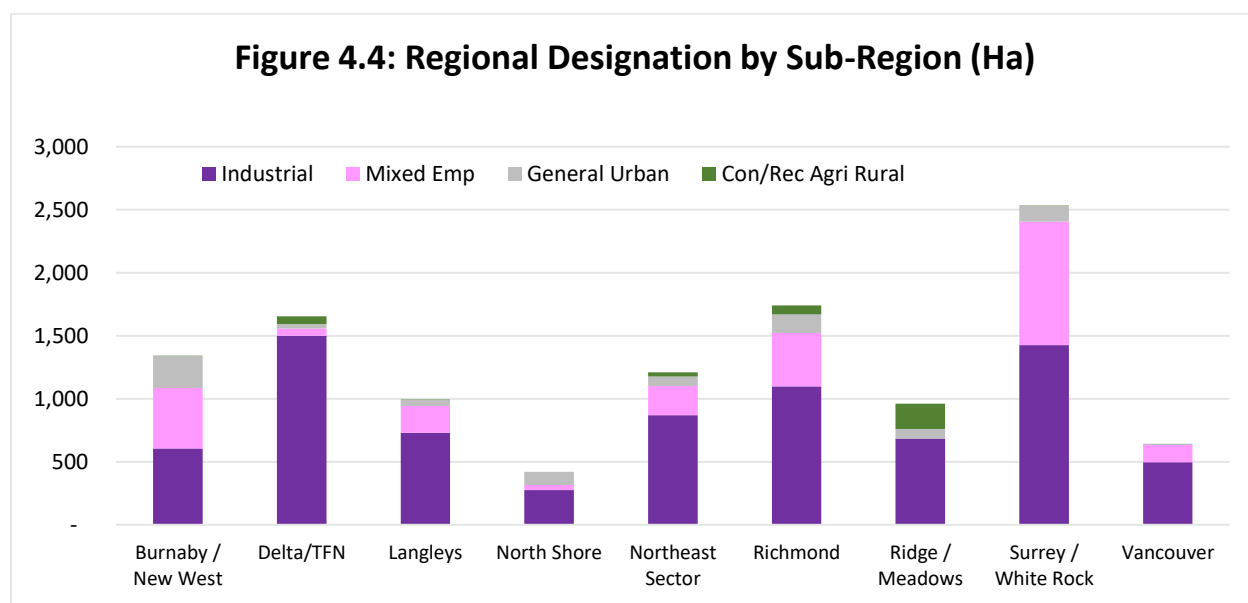
4.1.4 Policy Protection and Future Intent for Industrial Lands

Properties have different land use designations and zoning due to a variety of reasons, some reflecting historical uses and others reflecting forward-looking policy intent. In some cases, municipalities may have policies in place to protect long-term industrial uses, whereas in other situations the plan may be to allow for change. Accordingly, industrial lands have a range of policy ‘protections’ (land use designations and zoning) from conversion to other uses.⁴

Industrial lands that are designated in regional (*Metro 2040*) and municipal (OCP, area plans, or equivalent) plans as industrial and also municipally zoned (or equivalent) industrial have the greatest policy ‘protection’ and are most likely to remain industrial for the long-term. Conversely, lands that are used for industry and zoned industrial, but not designated industrial, are more likely to, or are intended to, redevelop to a non-industrial use reflecting the applicable land use designation.

Regional Land Use Designations

Metro 2040, the regional growth strategy, provides for parcel-based land use designations for the region. In preparing the 2011 *Metro 2040* land use designations, most municipal industrial lands were designated either *Metro 2040* ‘Industrial’ or ‘Mixed Employment’, however there were exceptions. As shown in the following figure and table, as of 2020, 89% of lands in the Inventory were regionally designated either ‘Industrial’ (67%) or ‘Mixed Employment’ (22%).



⁴ Zoning generally reflects current land use (zoning bylaw), and designations generally reflect future land use (municipal, regional). Zoning does not typically reflect forward-looking policy intent, and designations do not reflect historic uses.

Table 4.4: Developed and Other/Vacant Lands by Regional Designation

RGS Designation	Developed	Vacant	Total	% of Total
Con Rec	119		119	1%
Rural	18	183	202	2%
Agricultural	19	31	50	0%
General Urban	756	125	880	8%
Mixed Emp	1,971	597	2,569	22%
Industrial	6,503	1,179	7,681	67%
Total	9,387	2,115	11,502	100%

Metro 2040 'Industrial' lands are intended for heavy and light industrial activities and appropriate accessory uses, while 'Mixed Employment' lands have more flexibility in terms of use and are intended for industrial, commercial, and other employment related uses to help meet the needs of the growing regional economy. As the 'Mixed Employment' designation permits a broader range of uses, industrial uses on these lands face competition from commercial-oriented uses. Similarly, industrial uses on 'General Urban' lands, which comprised 8% of the Inventory, and are intended for all land use types, will likely convert to other uses over the long-term, which will lead to displacement of existing industrial users on those lands.

Metro 2040's multiple goals and objectives result in competing policy priorities. For example, both the protection of industrial lands and the development of lands in Urban Centres and near rapid transit stations for housing and jobs are regional priorities. In cases where industrial lands are located within Urban Centres, achieving both objectives may be a challenge.

5% of the Inventory lands were located within defined Urban Centre overlays. More particularly, 25% of the Inventory lands regionally designated 'General Urban' were located in Urban Centres. Most regionally designated Industrial and Mixed Employment lands were located outside of Urban Centres, as shown in the following table.

Table 4.5: Inventory by Urban Centre Overlay and Regional Designation

RGS Designation	RGS Urban Centre	RGS Non Centre	Total
Con Rec		119	119
Rural		202	202
Agricultural		50	50
General Urban	220	661	880
Mixed Emp	90	2,479	2,569
Industrial	253	7,428	7,681
Total	563	10,939	11,502

Conversely, as shown in the following table, a higher proportion of Retail, Commercial, and Transportation Operations / Parking uses were located on industrial lands in Urban Centres.

Table 4.6: Inventory by Urban Centre Overlay and Consolidated Land Use Classification

Consolidated Land Use Classification	RGS Centre	Non Centre	Total
Building - Industrial	285	4,354	4,639
Land - Industrial	34	941	975
Large-Scale Infra / Transp	109	2,730	2,839
Transp Opts / Parking	24	65	90
Retail	61	378	439
Commercial	36	370	406
Other / Vacant	15	2,100	2,115
Total	563	10,939	11,502

Even though the policy tools, in the form of land use designations and zoning, most often reflect the intent of the local government, the conversion of these industrial lands to other uses reduces the supply of industrial lands and displaces industrial tenants / users.

Municipal Land Use Designations and Zoning

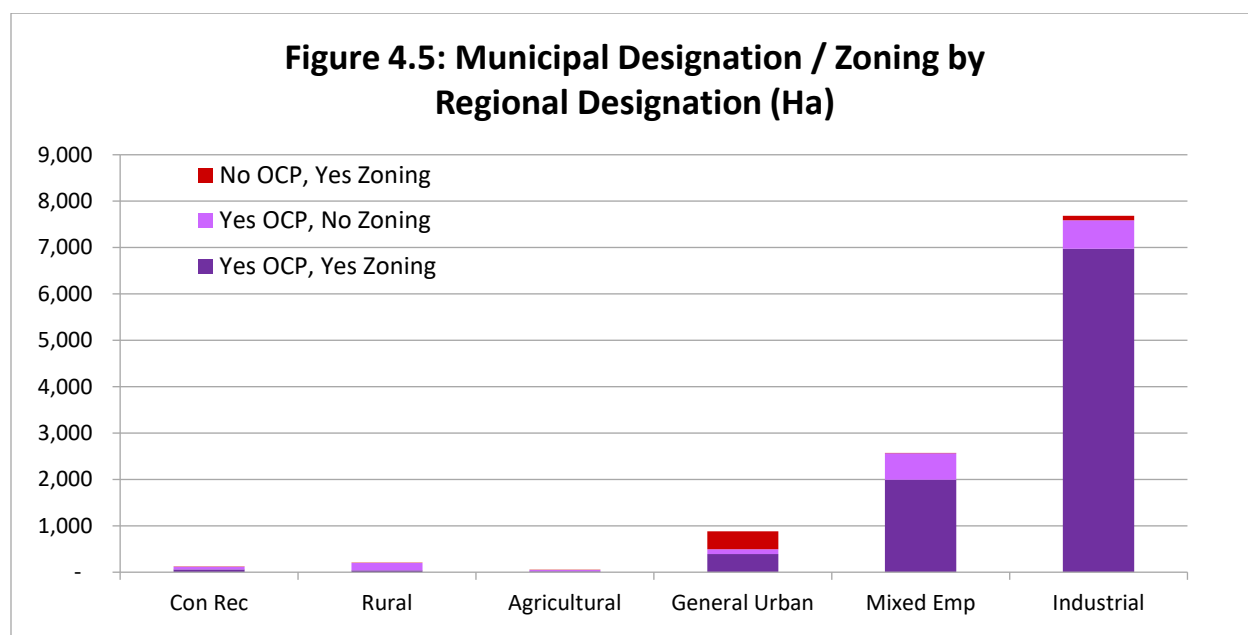
The following section with tables and figures shows the distribution of lands by municipal designation and municipal zoning, by regional designation, and by consolidated land use classification.

82% (9,470 ha) of lands in the Inventory were both municipally designated and zoned industrial. These municipal policies (designation and zoning), along with applicable regional designations, secure the long-term industrial use of the lands. Of these lands, 6,971 ha (74%) were regionally designated 'Industrial', 1,989 ha (21%) 'Mixed Employment', and 391 ha (4%) 'General Urban', as shown in the following table.

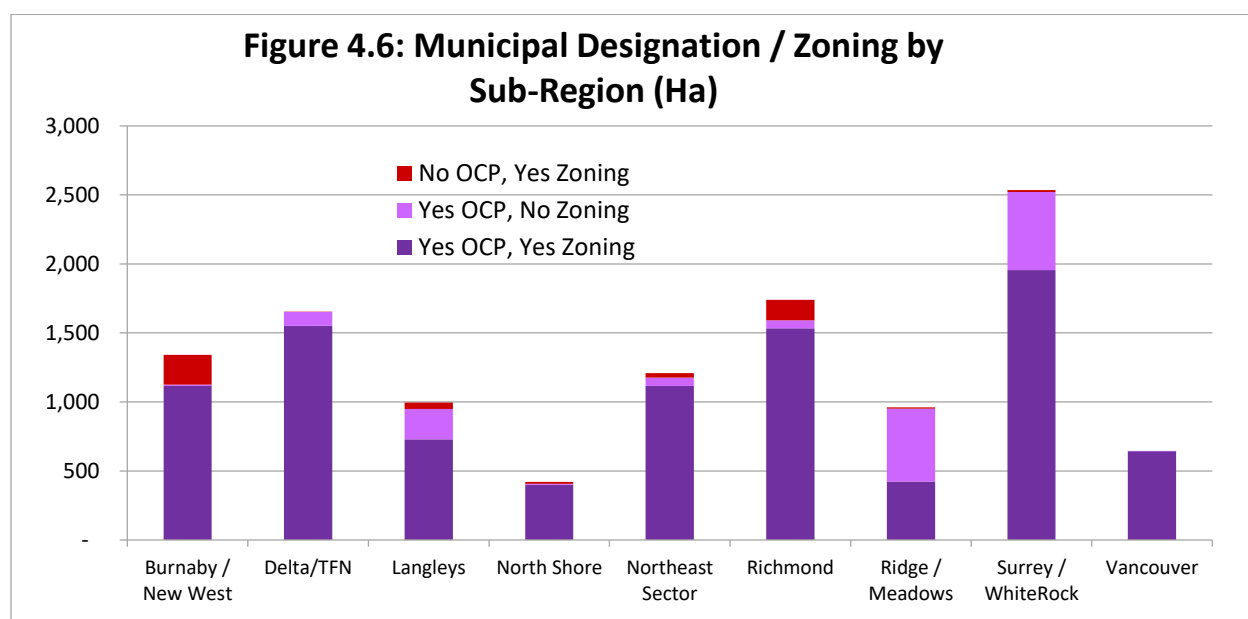
Table 4.7: Regional and Municipal Policy Designations

RGS Designation	Yes OCP, Yes Zoning	Yes OCP, No Zoning	No OCP, Yes Zoning	Total - HA
Con Rec	58	58	4	119
Rural	43	159	0	202
Agricultural	18	30	2	50
General Urban	391	105	385	880
Mixed Emp	1,989	577	3	2,569
Industrial	6,971	619	92	7,681
Total	9,470	1,548	484	11,502

13% (1,548 ha) of the Inventory was municipally designated industrial but not zoned industrial, generally meaning it is not used for industrial, but is envisioned to be in the future. 484 ha (4%) had industrial zoning but not a municipal industrial designation, which results in diminished ability to ensure the long-term industrial use of the lands. The lands represented in red in the following figures (No OCP Industrial designation, Yes Industrial zoning), are most likely to be redeveloped to other uses in the future. These lands were mostly regionally designated 'General Urban'.



In terms of the lands that were zoned industrial but not designated industrial, they were distributed by sub-region as follows: 45% were located in Burnaby / New Westminster, and 31% in Richmond. Over a third each of lands that were municipally designated industrial but not zoned industrial were located in Surrey (37%) and Ridge / Meadows (34%), much of this was 'Other / Vacant'.



Most of the industrial lands were protected with both municipal industrial designation and municipal industrial zoning (approximately 85-95%, depending on the land use), while the lands with 'Commercial' and 'Retail' uses were less likely to be designated industrial and/or zoned industrial. The following figures show the lands with the level of policy protection.

Figure 4.7: Municipal Designation / Zoning by Consolidated Land Use Classification (Ha)

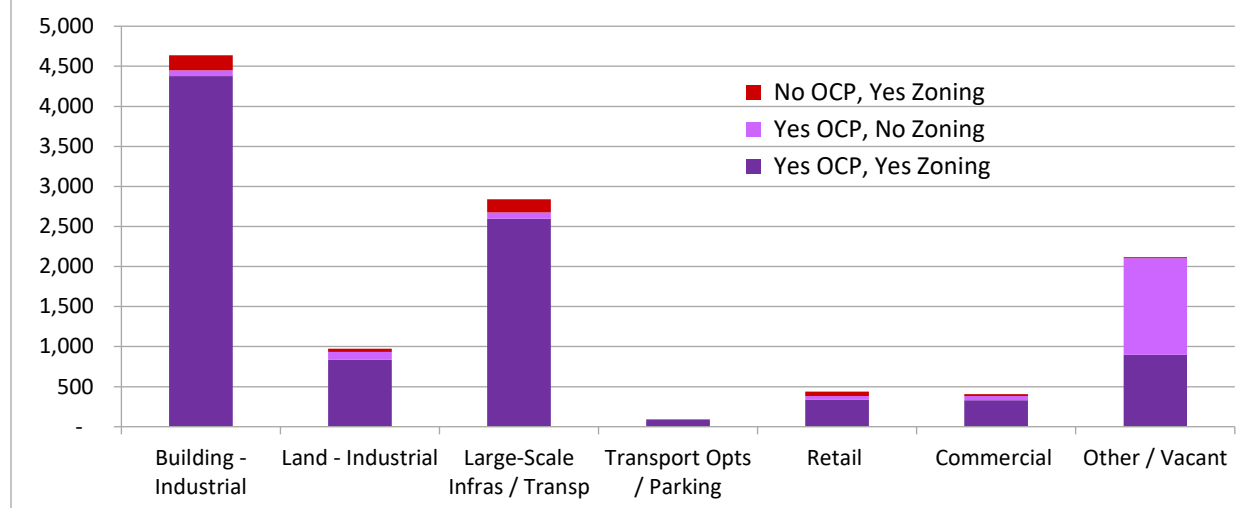
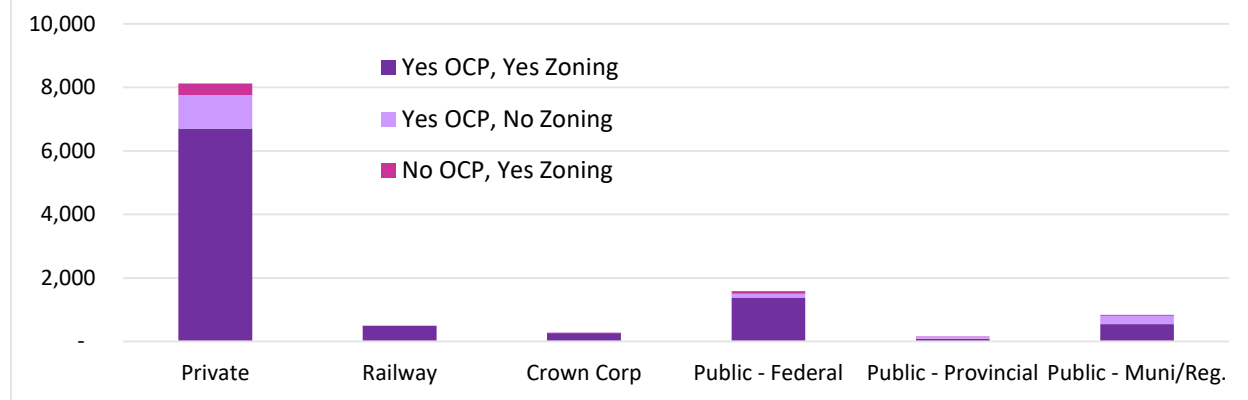


Figure 4.8: Municipal Designation / Zoning by Land Ownership Type (Ha)



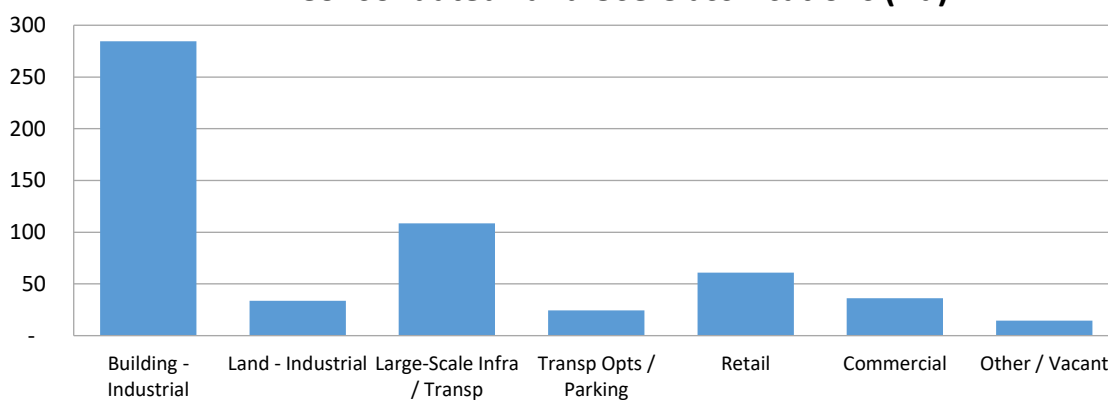
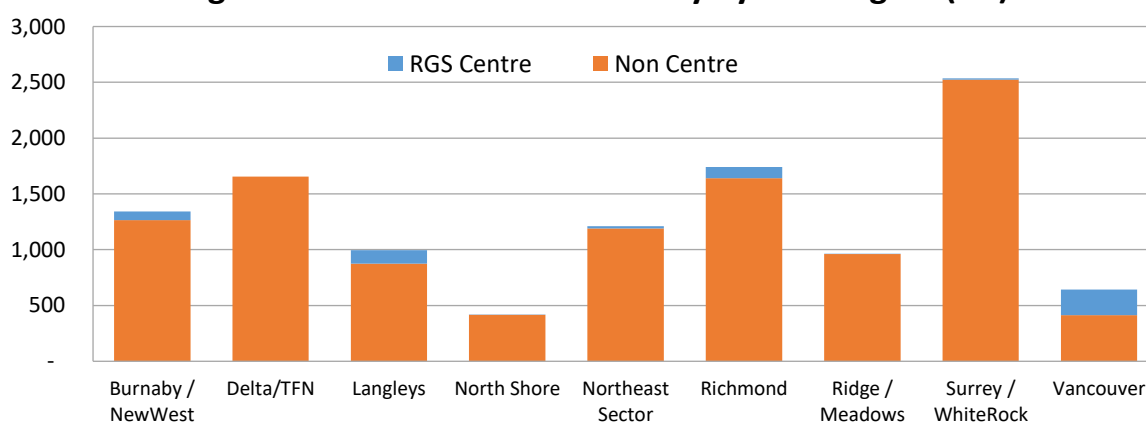
Industrial Lands in Urban Centres

The region's 26 Urban Centres are identified in the regional growth strategy as targeted locations for population and job growth. As shown in the following table, there were 563 ha of lands in the Inventory located in the Urban Centres (overlays). Of these lands, 76% had municipal Industrial designations. In terms of regional designations, 45% were 'Industrial', 16% were 'Mixed Employment', and 39% were 'General Urban'.

Table 4.8: Lands in Urban Centres by Regional Designation

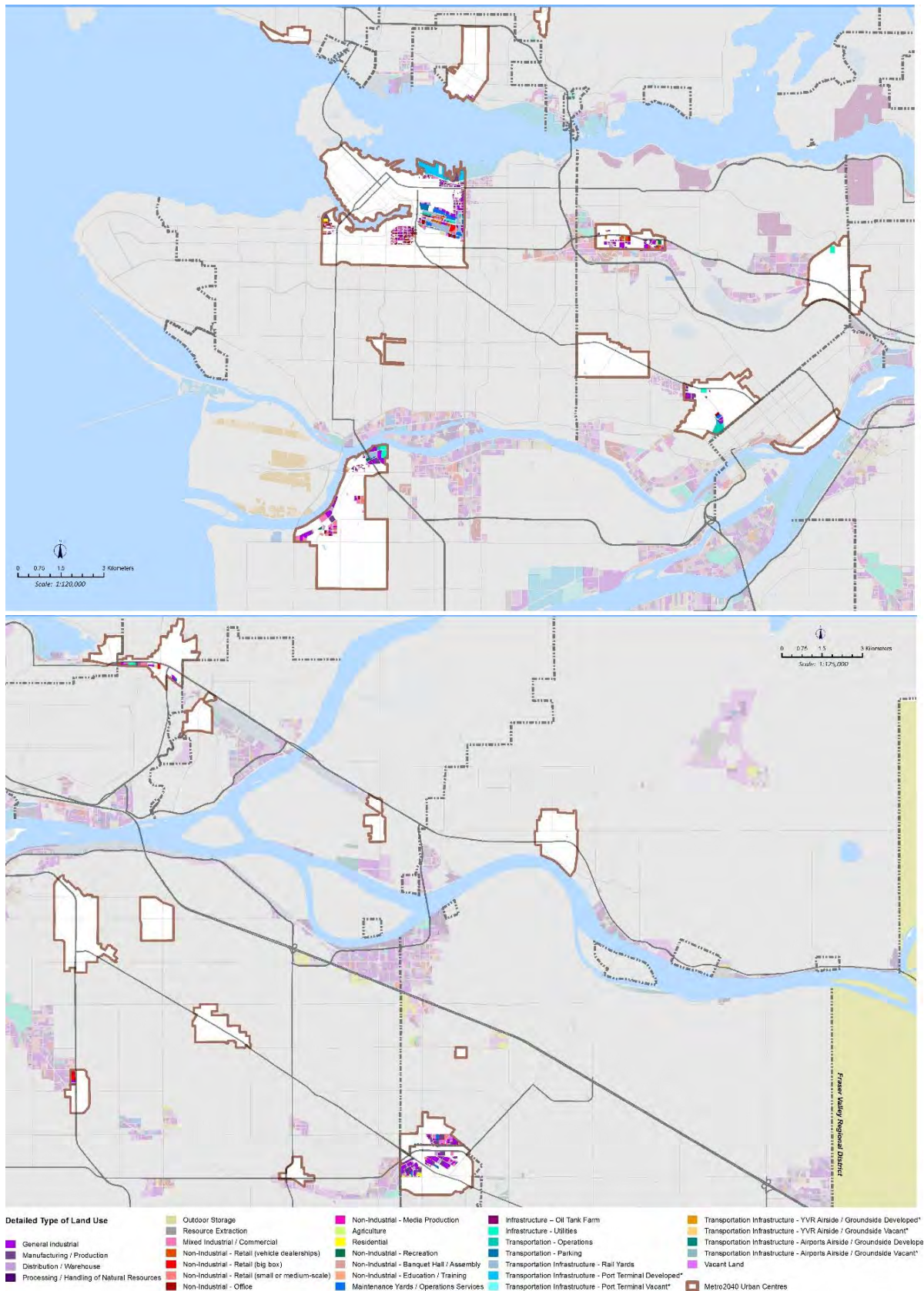
RGS Designation	RGS Urban Centre	RGS Non Centre	Total
Con Rec		119	119
Rural		202	202
Agricultural		50	50
General Urban	220	661	880
Mixed Emp	90	2,479	2,569
Industrial	253	7,428	7,681
Total	563	10,939	11,502

The following figures show that while most Inventory lands were located outside of Urban Centres, some 'Building Intensive Industrial', 'Retail', and 'Large-Scale Infrastructure / Transportation' uses were located within Urban Centre overlays. A higher proportion of industrial lands in the City of Vancouver were located within Urban Centres (i.e. the large Metro Core).

Figure 4.9: Urban Centre Overlay by Consolidated Land Use Classifications (Ha)**Figure 4.10: Urban Centre Overlay by Sub-Region (Ha)**

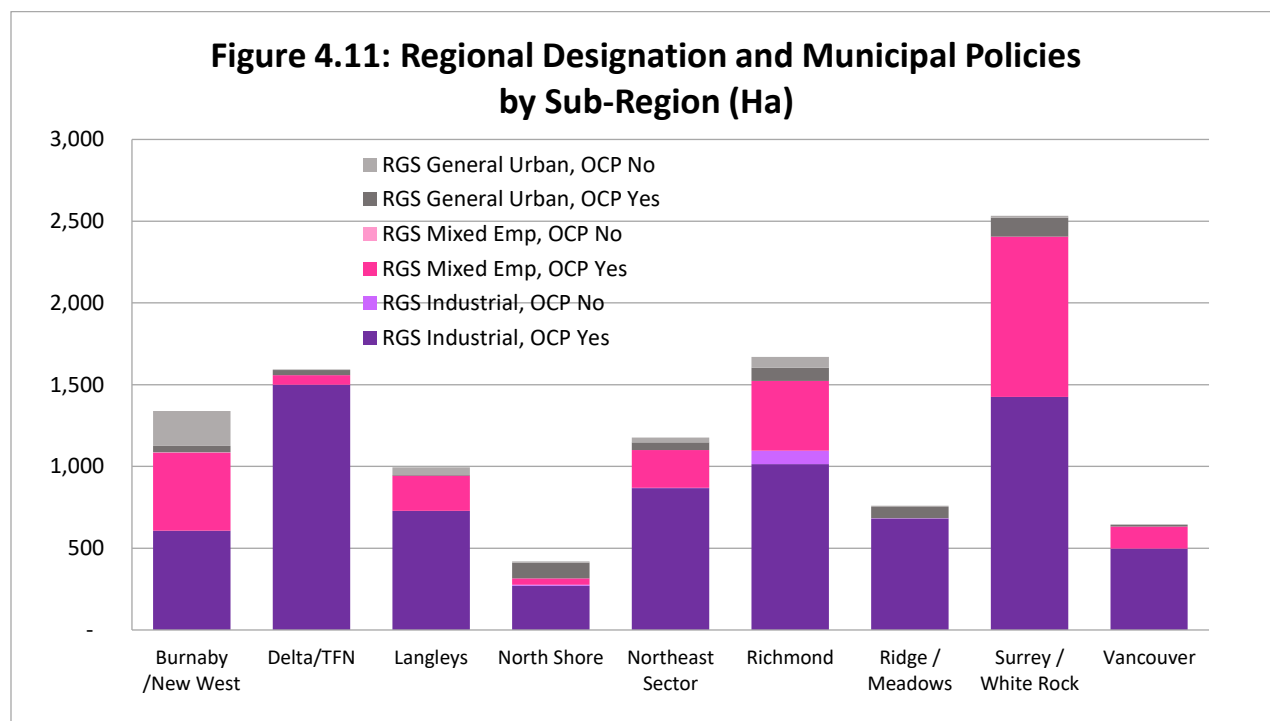
The following map profiles Inventory lands located within regional Urban Centres.

Map 4.4: Inventory within Regional Urban Centres



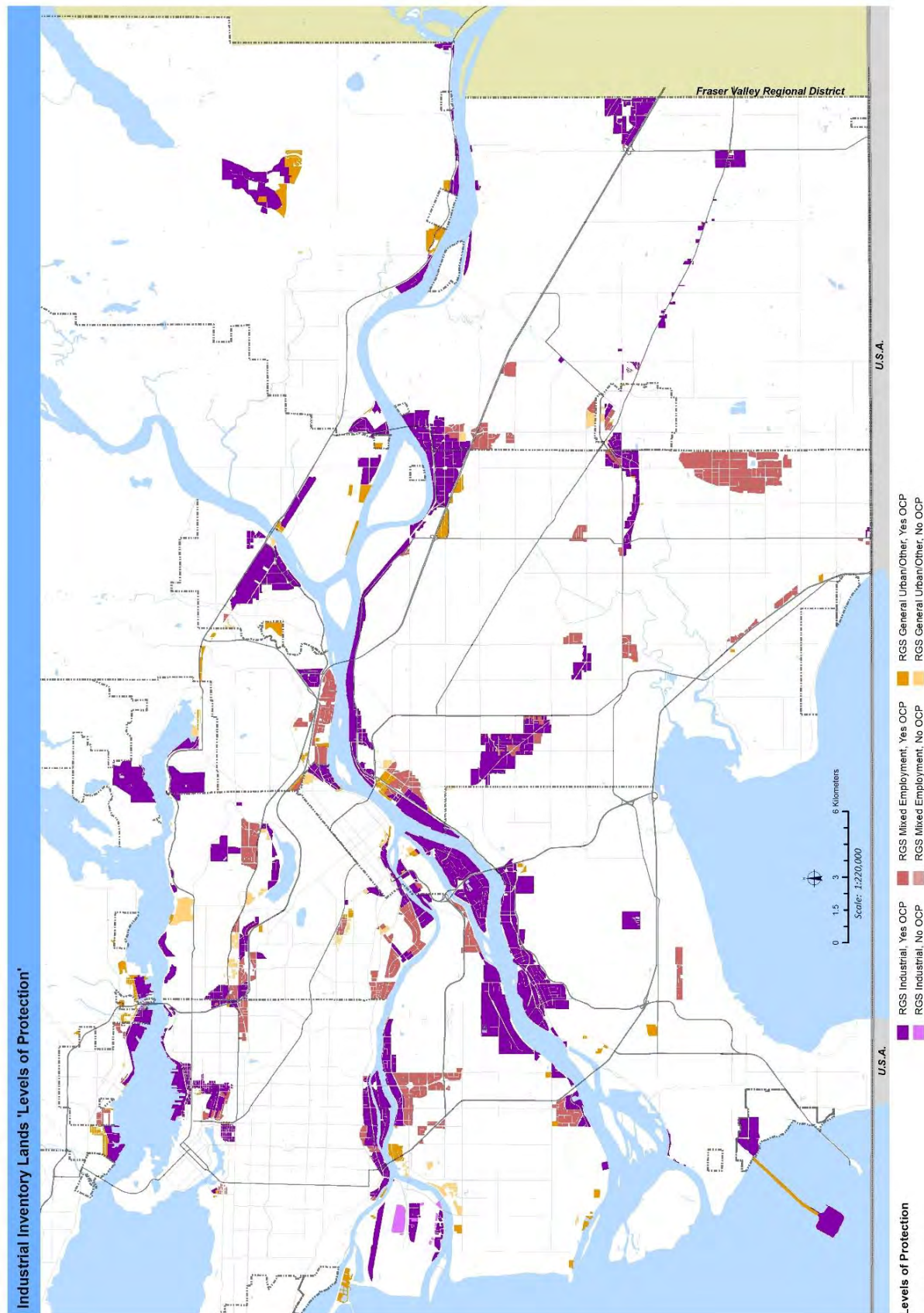
Regional and Municipal Land Use Designations

The following figure shows both regional and municipal land use designations, independent of zoning. Notably, most of the lands in Delta / Tsawwassen First Nation were regionally designated 'Industrial' and also municipally designated industrial; whereas 45% of the lands in Burnaby / New Westminster and 39% in Surrey were regionally designated 'Mixed Employment'.



The following map shows the Inventory by regional and municipal land use designations. The lands with the greatest level of land use designation policy protection are shown in dark purple, while the lands in pink and orange are intended or are at greater likelihood to convert to other uses.

Map 4.5: Inventory Level of Policy Protection



Vacant Lands

Specifically for the 'Other / Vacant' component of the Inventory (2,115 ha), 56% were regionally designated as 'Industrial' and 28% as 'Mixed Employment'. Over half (57%) of the 'Other / Vacant' lands had municipal industrial designations, but did not have industrial zoning, as shown in following figure and associated tables.

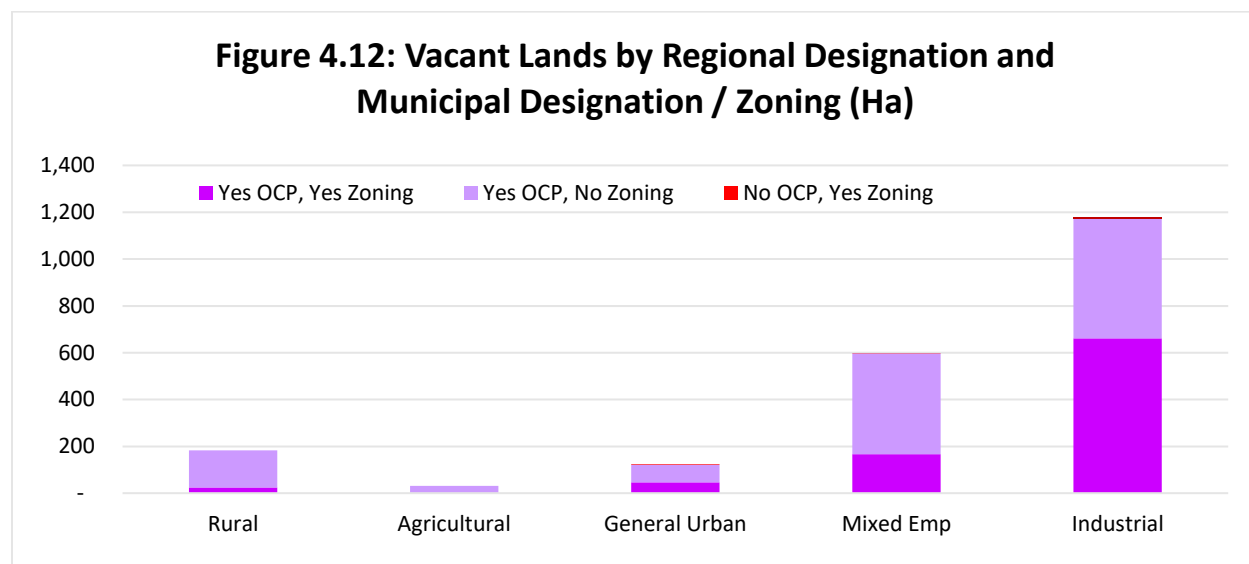


Table 4.9: Developed and Other/Vacant Lands by Regional Designation

RGS Designation	Developed	Vacant	Total	% of Total Land
Con Rec	119		119	1%
Rural	18	183	202	2%
Agricultural	19	31	50	0%
General Urban	756	125	880	8%
Mixed Emp	1,971	597	2,569	22%
Industrial	6,503	1,179	7,681	67%
Total	9,387	2,115	11,502	100%

Table 4.10: Other/Vacant Lands by Regional Designation and Municipal Designation / Zoning

RGS Designation	Yes OCP, Yes Zoning	Yes OCP, No Zoning	No OCP, Yes Zoning	Total
Rural	25	159		183
Agricultural	1	30		31
General Urban	46	76	3	125
Mixed Emp	166	431	1	597
Industrial	662	510	7	1,179
Total	899	1,205	10	2,115

Table 4.11: Other/Vacant Lands by Municipal Designation / Zoning by Sub-Region

Sub Region	Yes OCP, Yes Zoning	Yes OCP, No Zoning	No OCP, Yes Zoning	Total
Burnaby/New West	35	7	0	42
Delta/TFN	228	84		313
Langley	25	149	2	176
North Shore	20	1		21
Northeast Sector	23	33	0	56
Richmond	264		6	271
Ridge/Meadows	83	510	1	593
Surrey/White Rock	194	421	1	616
Vancouver	27			27
Total	899	1,205	10	2,115

Table 4.12: Other/Vacant Lands by Detailed Land Use Classification and by Sub-Region

Sub Region	Burnaby / New West	Delta/TFN	Langley	North Shore	Northeast S	Richmond	Ridge / Meadows	Surrey / White	Vancouver	Total
Agriculture	0		4					135		139
Residential	5	1	74	1	2	4	27	102	6	223
Resource Extraction		66		1	5	41	106	13		232
YVR Vacant						62				62
Airports Vacant (excl. YVR)		21	10							31
Port Terminal Vacant	4	12		1		97		1	3	118
Vacant Land	33	212	88	18	48	66	460	365	18	1,309
Total	42	313	176	21	56	271	593	616	27	2,115

Table 4.13: Other/Vacant Lands by Detailed Land Use Classification and Regional Designation

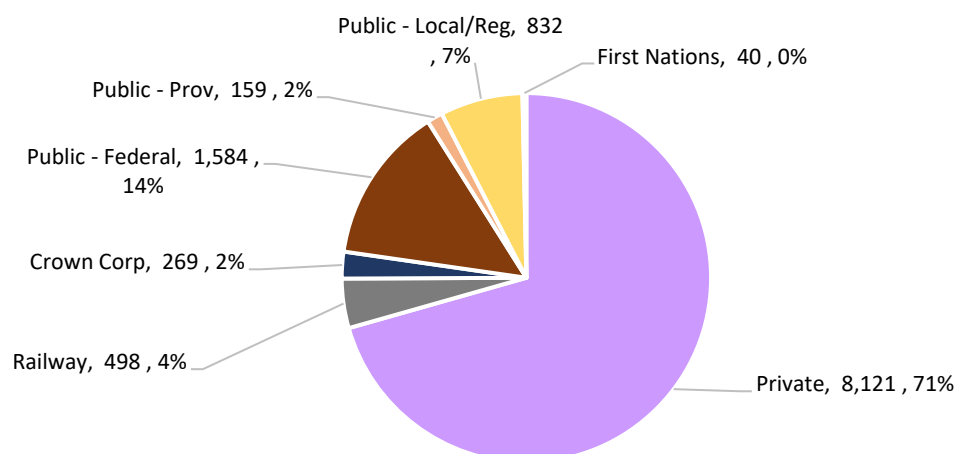
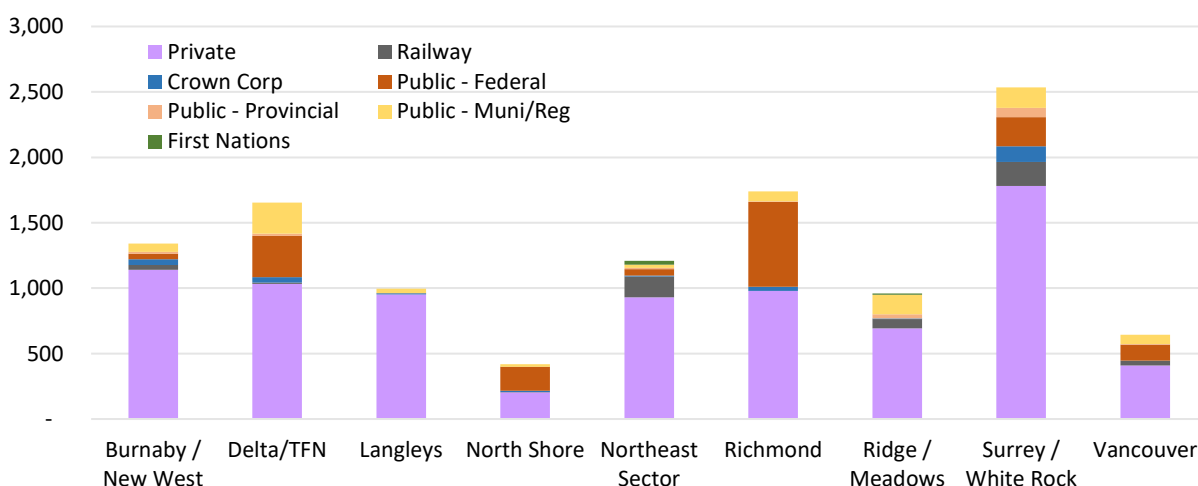
RGS Designation	General					Total
	Rural	Agricultural	Urban	Mixed Emp	Industrial	
Agriculture				133	6	139
Residential	19		42	115	47	223
Resource Extraction	9		5	18	200	232
YVR Vacant					62	62
Airports Vacant (excl. YVR)				21	10	31
Port Terminal Vacant			8		109	118
Vacant Land	154	31	69	310	744	1,309
Total	183	31	125	597	1,179	2,115

4.1.5 Land Ownership Type

71% of the lands in the Inventory were privately owned, with an additional 4% owned by railways. The balance of lands (25%) were owned by various levels of government:

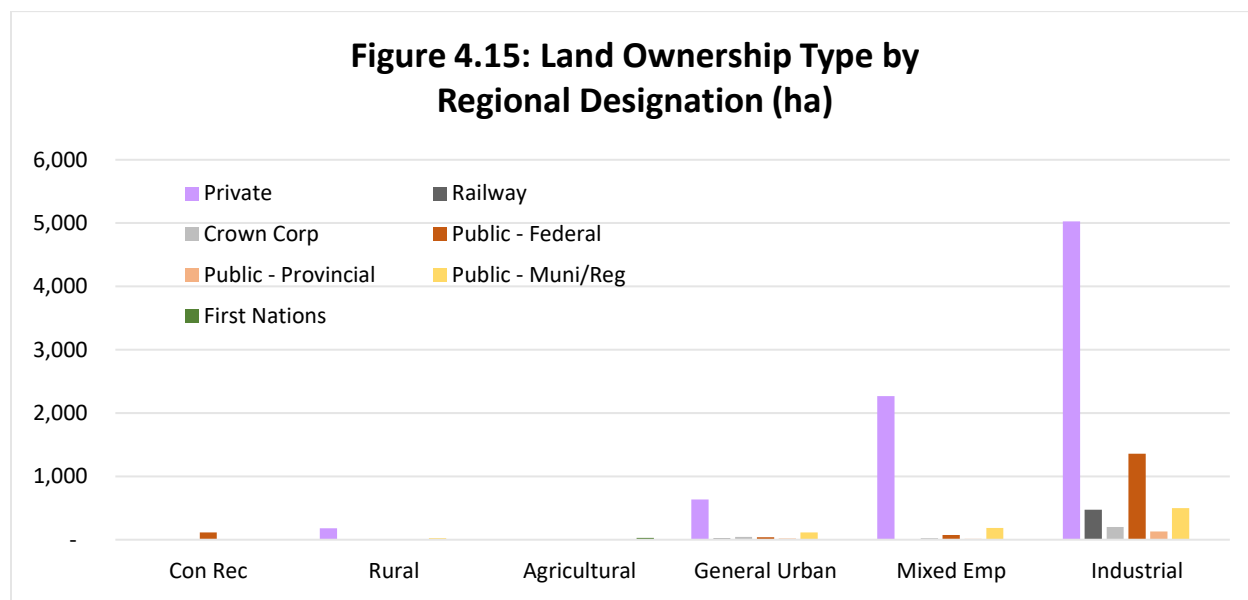
- 14% federal government (including port and airport lands);
- 2% provincial government; and
- 7% local government (municipal, regional, and TransLink).

This is illustrated in the following two figures and table.

Figure 4.13: Inventory by Land Ownership Type (Ha)

Figure 4.14: Land Ownership Type by Sub-Region (Ha)

Table 4.14: Land Ownership Type by Consolidated Land Use Classification

Ownership Type	Building - Industrial	Land - Industrial	Large-Scale Infra / Transp	Transp Opts / Parking	Retail	Commercial	Other / Vacant	Total
Private	4,443	808	729	20	425	383	1,312	8,121
Railway	17	2	462				16	498
Crown Corp	29	13	198			7	22	269
Public - Federal	49	20	1,270		6	3	237	1,584
Public - Prov	8	20	2	12	0	2	115	159
Public - Local/Reg	93	110	178	58	8	12	374	832
First Nations							40	40
Total	4,639	975	2,839	90	439	406	2,115	11,502

The following figure shows the Inventory by land ownership type relative to regional designation. Virtually all federal and railway owned lands were regionally designated as 'Industrial' (noting that local government regulations do not apply to lands under federal jurisdiction), whereas a significant proportion of the privately owned lands were designated 'Mixed Employment' or 'General Urban'.



The following map shows the Inventory by land ownership type. Most of the Inventory was privately owned, shown in light pink. On the subsequent map, federal lands (such as the port and airport) are shown in dark pink, and private rail yards shown in green.

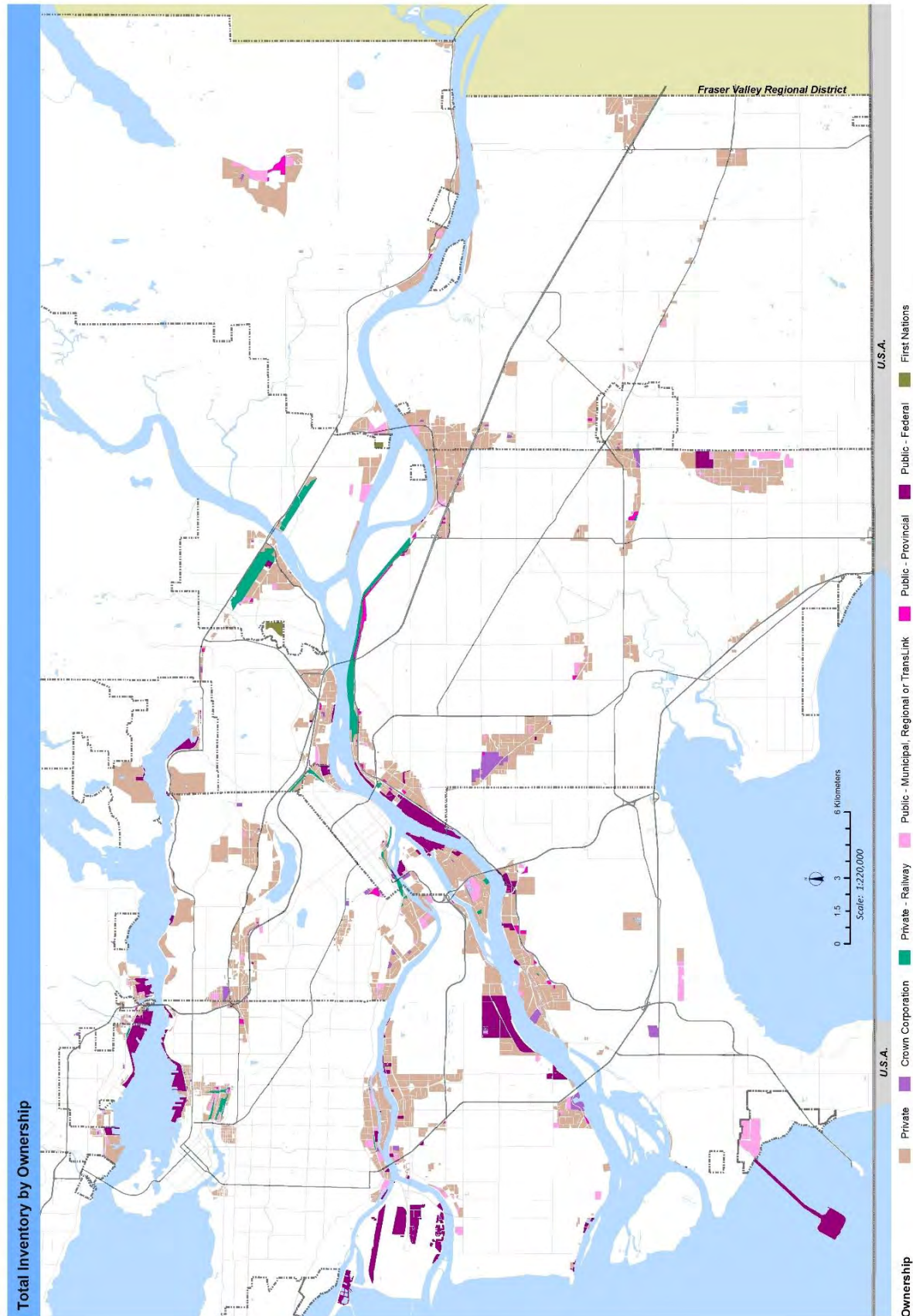
Details of the Inventory lands by ownership are shown in the following figure and maps, notably:

- 71% of the Inventory was privately owned;
- 14% was owned by the federal government (including various agencies such as port and airport);
- nearly all (97%) rail lands were 'Developed'; and
- most (84%) privately owned lands were 'Developed'.

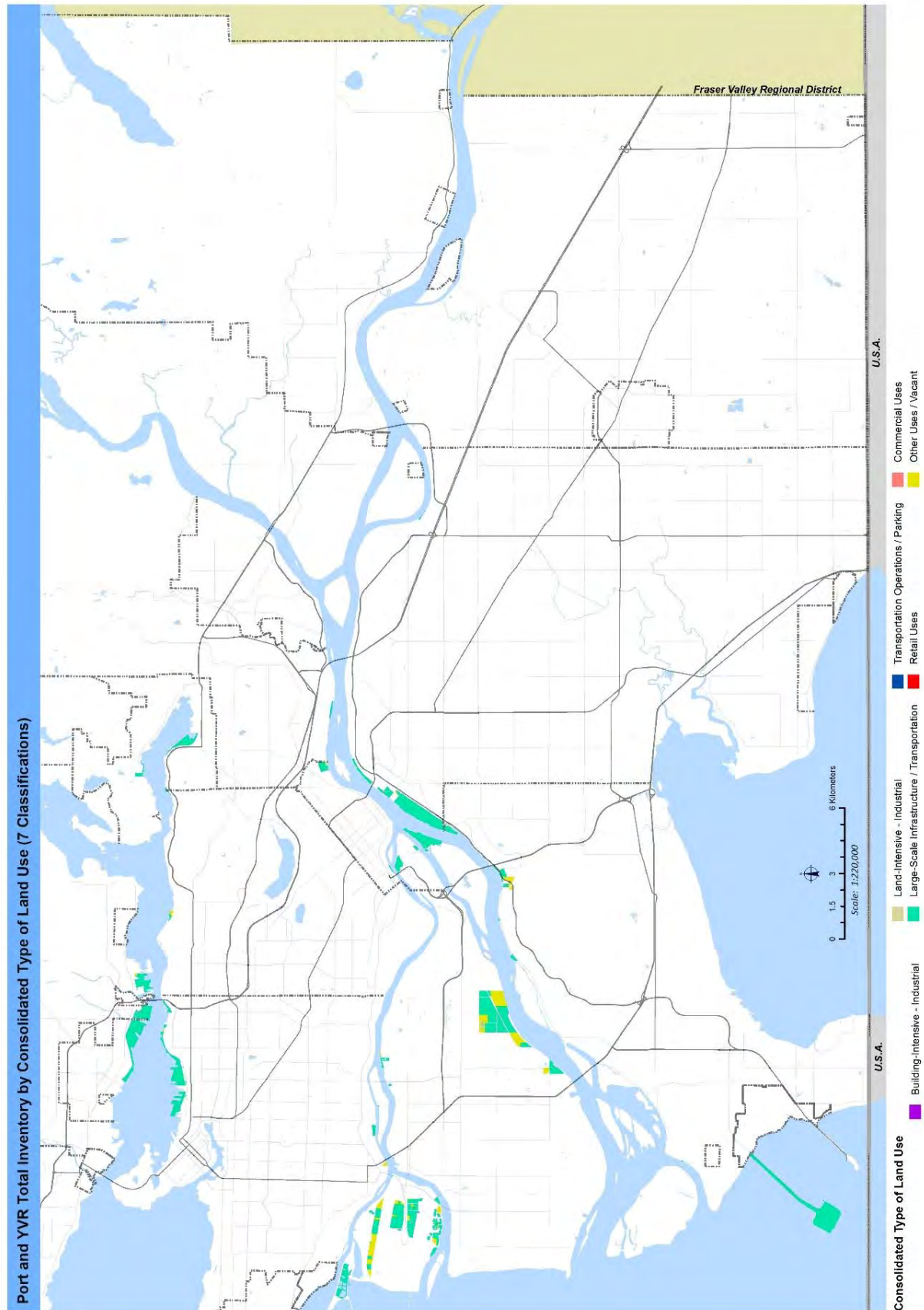
Table 4.15: Developed and Other/Vacant Lands by Land Ownership Type

Ownership Type	Developed	Vacant	Total	% of Total Lands
Private	6,808	1,312	8,121	71%
Railway	482	16	498	4%
Crown Corp	248	22	269	2%
Public - Federal	1,348	237	1,584	14%
Public - Prov	44	115	159	1%
Public - Local/Reg	458	374	832	7%
First Nations		40	40	0%
Total	9,387	2,115	11,502	100%

Map 4.6: Inventory by Land Ownership Type



Map 4.7: YVR and Port Lands by Consolidated Type of Land Use

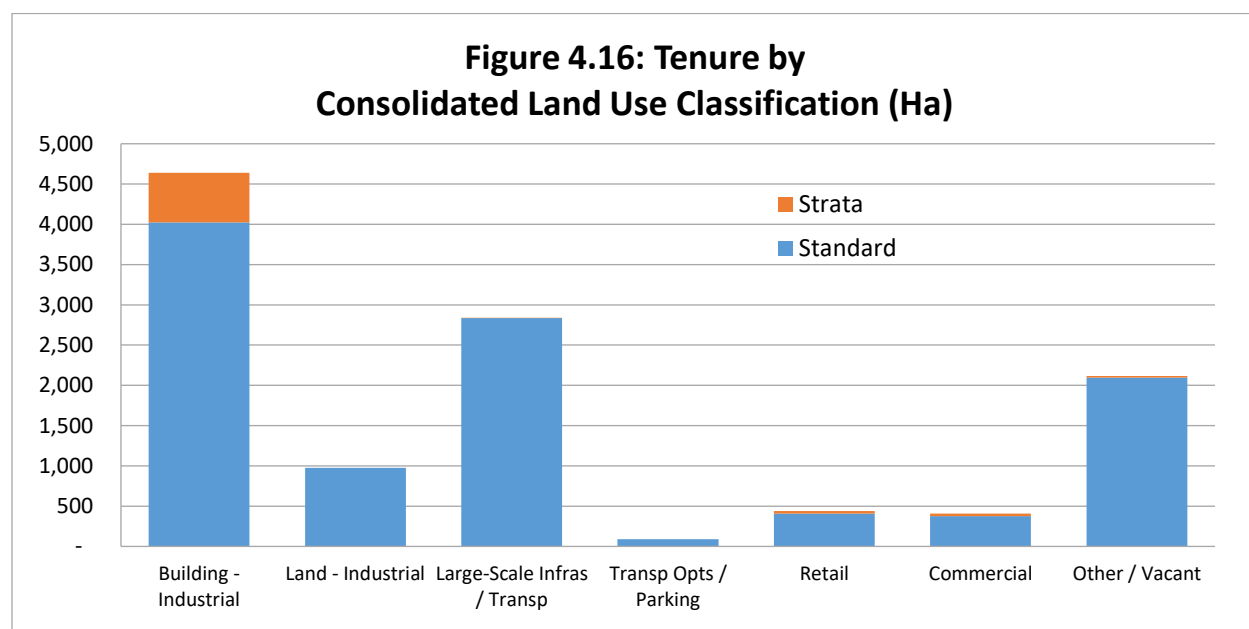


4.1.6 Land Tenure

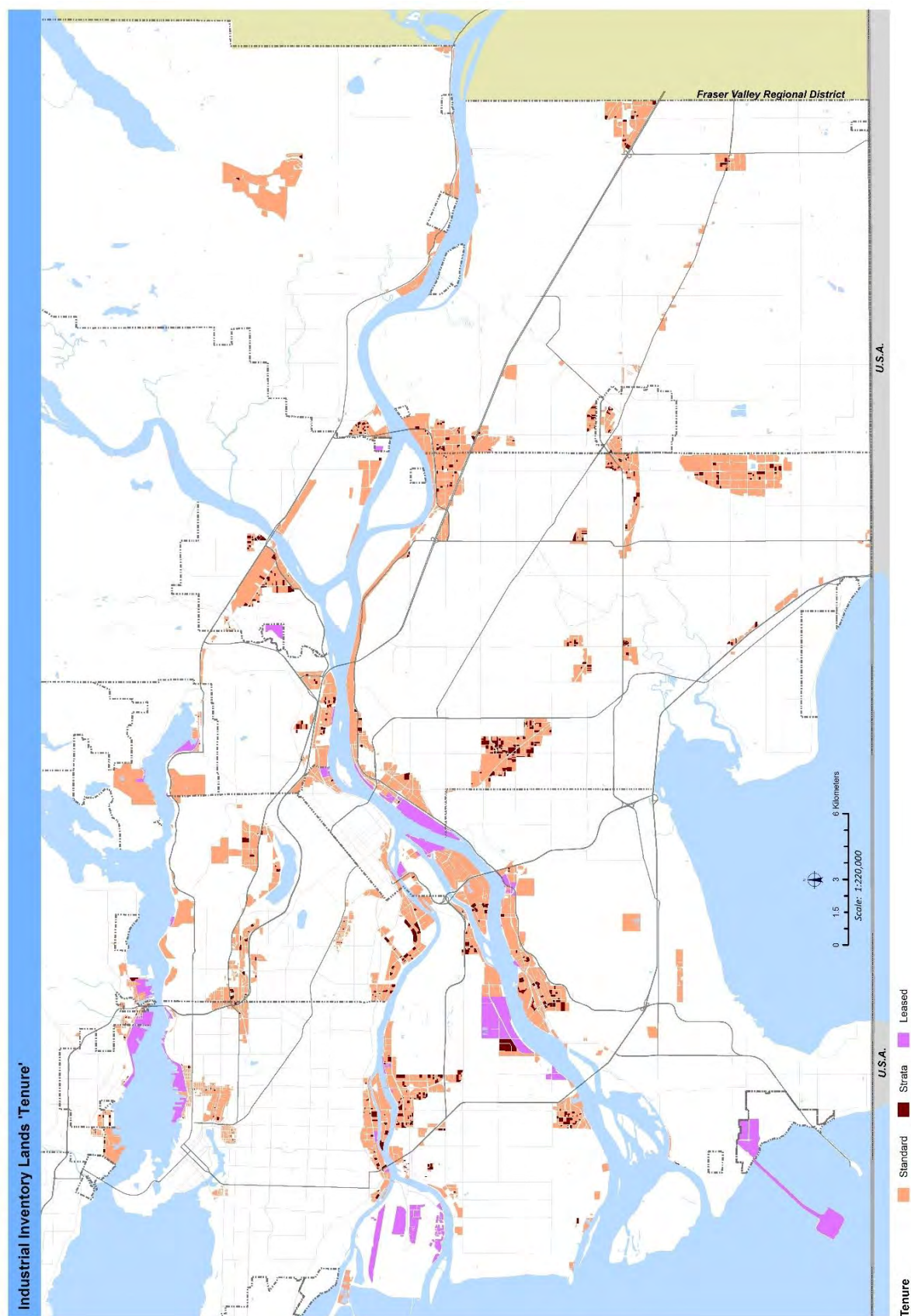
In terms of land tenure, 700 ha or 6% of the Inventory was strata tenure, with a higher rate of 10% for 'Mixed Employment' designated lands. The balance was 'standard' tenure, which includes both fee simple and lease lands. Multiple ownership of properties can impact future redevelopment potential of the sites. Details are shown in the following table, figure, and map.

Table 4.16: Land Tenure Type by Regional Designation

RGS Designation	Standard	Strata	Total
Con Rec	119		119
Rural	200	2	202
Agricultural	50		50
General Urban	848	32	880
Mixed Emp	2,302	267	2,569
Industrial	7,282	399	7,681
Total	10,802	700	11,502



Map 4.8: Inventory by Tenure



4.1.7 Site Sizes

Of the Inventory, 34% of the lands were within sites under 2 ha in size, and 22% within sites over 20 ha. The rest of the Inventory (44%) was within sites 2-20 ha in size. In some cases, abutting sites could be consolidated to create larger developable sites to accommodate larger industrial users. Details by site size category are shown in the following tables.

Table 4.17: Site Size Distribution of Inventory by Vacancy Percentage

Site Size	Developed	Vacant	Total	% of Total	% of Lands
				Lands	Vacant
less than 1 HA	1,880	210	2,090	18%	10%
1 to 1.99 HA	1,574	225	1,798	16%	13%
2 to 4.99 HA	2,037	330	2,367	21%	14%
5 to 9.99 HA	1,146	380	1,525	13%	25%
10 to 19.99 HA	734	469	1,204	10%	39%
20 HA and over	2,016	501	2,517	22%	20%
Total	9,387	2,115	11,502	100%	18%

The Inventory of larger sites (both ‘Developed’ and ‘Other / Vacant’) over 20 ha (50 ac) was geographically distributed as follows:

- 24% in North East Sector
- 18% in Delta / Tsawwassen First Nation
- 16% in Surrey / White Rock
- 14% in Ridge / Meadows

Table 4.18: Site Size Distribution of Inventory by Sub-Region

Site Size	Burnaby /		Langley	North Shore	Northeast		Ridge -	Surrey /	Vancouver	Total
	New West	Delta / TFN			Sector	Richmond	Meadows	White Rock		
less than 1 HA	291	192	251	73	154	301	81	510	235	2,090
1 to 1.99 HA	248	220	239	37	136	269	48	513	89	1,798
2 to 4.99 HA	329	364	307	45	150	403	109	551	109	2,367
5 to 9.99 HA	178	261	121	38	99	259	155	330	83	1,525
10 to 19.99 HA	81	162	78	42	70	290	222	221	37	1,204
20 HA and over	214	455		185	601	218	345	408	91	2,517
Total	1,342	1,655	996	420	1,209	1,741	960	2,534	644	11,502

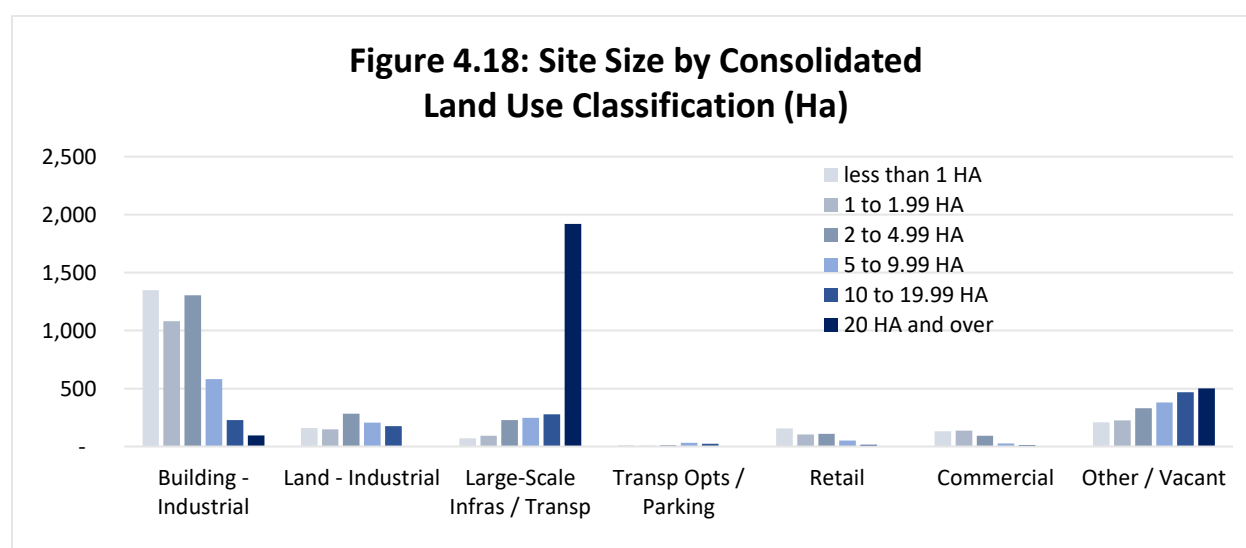
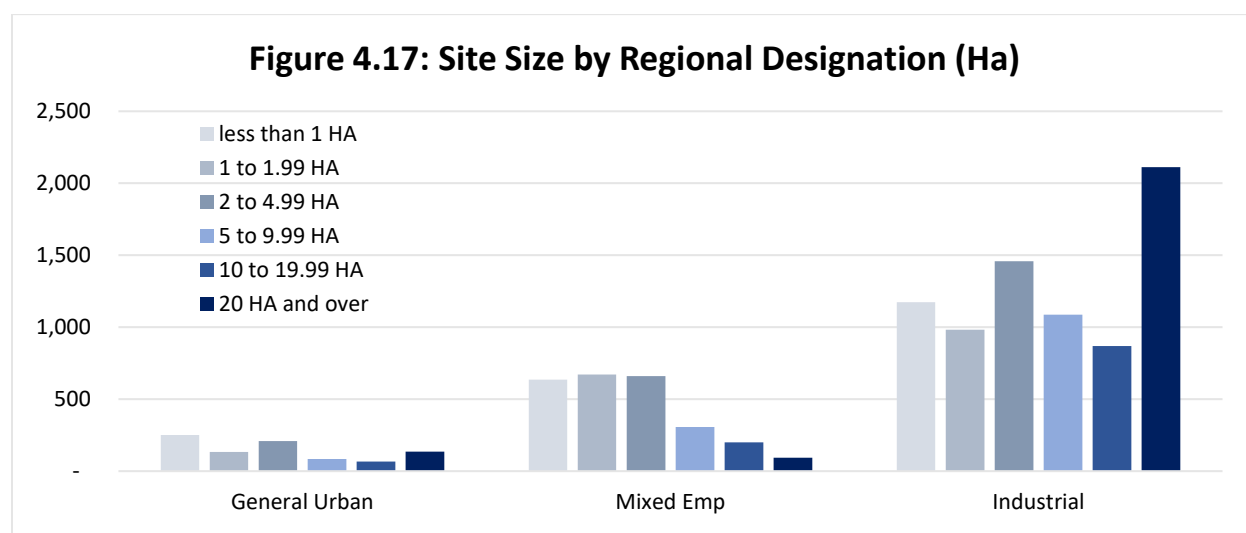
Table 4.19: Site Size Distribution of Inventory by Consolidated Land Use Classification

Site Size	Large-Scale				Retail	Commercial	Other /	Total
	Building - Industrial	Land - Industrial	Infras / Transp	Transp Opts / Parking			Vacant	
less than 1 HA	1,348	159	72	12	157	132	210	2,090
1 to 1.99 HA	1,081	148	93	8	105	138	225	1,798
2 to 4.99 HA	1,306	284	228	14	111	94	330	2,367
5 to 9.99 HA	581	207	246	33	50	28	380	1,525
10 to 19.99 HA	228	175	279	23	16	14	469	1,204
20 HA and over	95		1,921				501	2,517
Total	4,639	975	2,839	90	439	406	2,115	11,502

Table 4.20: Site Size Distribution of Inventory by Regional Designation

Site Size	Con Rec	Rural	Agricultural	General			Industrial	Total
				Urban	Mixed Emp			
less than 1 HA	3	20	5	252	636		1,174	2,090
1 to 1.99 HA	2	9		134	671		983	1,798
2 to 4.99 HA	2	32	5	210	661		1,458	2,367
5 to 9.99 HA		37	10	84	307		1,088	1,525
10 to 19.99 HA		70		66	200		868	1,204
20 HA and over	112	34	30	135	94		2,111	2,517
Total	119	202	50	880	2,569		7,681	11,502

Site size distribution also varies by regional designation and land use classification, as shown on the following figures. Larger sites tend to be regionally designated 'Industrial' (84%), and used for 'Large-Scale Infrastructure / Transportation' (76%) activities.



The range in site sizes is also illustrated through the calculation of average site sizes. Average sizes (consolidated properties, where applicable) vary greatly by sub-region and by sector classification, as illustrated by these observations, supposed by the following tables:

- By geography, most sites range from 1.0 – 2.0 ha in size, with outliers:
 - 0.4 ha in Vancouver
 - 3.1 ha in Ridge-Meadows
- By consolidated land use classification, most sites range from 0.9 - 1.2 ha in size, with outliers:
 - 6.6 ha for 'Large-scale Infrastructure / Transportation' sector
 - 1.9 ha for 'Other / Vacant' sites

Table 4.21: Average Site Size by Sub-Region

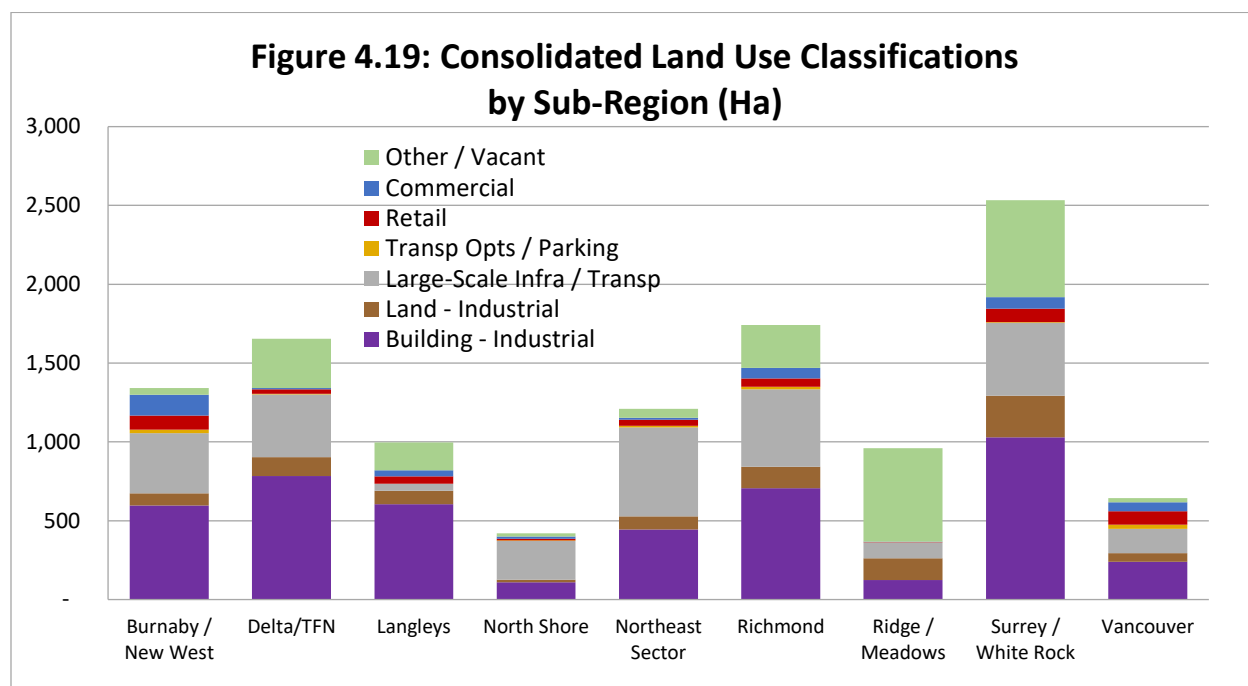
Sub-Regions	# of Parcels	Area - HA	Avg Parcel Size - HA	% of Total Lands
Burnaby/New West	1317	1,342	1.0	12%
Delta/TFN	720	1,655	2.3	14%
Langley	809	996	1.2	9%
North Shore	444	420	0.9	4%
Northeast Sector	582	1,209	2.1	11%
Richmond	1118	1,741	1.6	15%
Ridge/Meadows	306	960	3.1	8%
Surrey/White Rock	1823	2,534	1.4	22%
Vancouver	1450	644	0.4	6%
Total	8569	11,502	1.3	100%

Table 4.22: Average Site Size by Consolidated Land Use Classification

Land Use Category	# of Parcels	Area - HA	Avg Parcel Size - HA	% of Total Lands
Building - Industrial	5122	4,639	0.9	40%
Land - Industrial	648	975	1.5	8%
Large-Scale Infrs / Transp	429	2,839	6.6	25%
Transp Opts / Parking	63	90	1.4	1%
Retail	629	439	0.7	4%
Commercial	583	406	0.7	4%
Other / Vacant	1095	2,115	1.9	18%
Total	8569	11,502	1.3	100%

4.2 Findings at the Sub-Regional Level

This section provides information and commentary to characterize the nine geographic sub-regions, after the illustrative figure showing consolidated land use classifications by sub-region. The profile of industrial land uses varies significantly by sub-region, from some inner urban areas being largely built out with proportionally more 'General Industrial' uses, to other areas having more 'Large-Scale Infrastructure / Transportation' uses and 'Other / Vacant' lands.



The following are notable observations about the Inventory lands in each of the sub-regions.

Vancouver – 644 ha

- Mostly 'Developed' lands
- Many 'General Industrial' classified lands
- Significant port terminals
- Smallest average parcel size (0.4 ha)
- Highest proportion (99%) of lands in 'Industrial' or 'Mixed Employment' regional designation

Burnaby / New Westminster – 1,342 ha

- 391 ha of large scale industrial / transportation
- 260 ha 'Oil Tank Farms'
- 90 ha 'Office'
- Largest share (28%) of region's Transportation – Operations lands

North East Sector (Coquitlam, Port Coquitlam, Port Moody) – 1,209 ha

- 150 ha rail yards – in Port Coquitlam
- 369 ha 'Oil Tank Farms' – in Port Moody

Pitt Meadows / Maple Ridge – 960 ha

- 460 ha 'Vacant' land; much of which are located in north-east Maple Ridge
- Smallest share (4%) of region's developed lands
- Second largest share (28%) of region's vacant lands
- Largest average parcel size (3.1 ha)
- Lowest share (2%) of their Inventory is on strata lots
- Lowest proportion (71%) of lands in 'Industrial' or 'Mixed Employment' regional designation

North Shore (North Vancouver City, North Vancouver District) – 420 ha

- 166 ha port terminals
- Limited 'Vacant' land supply
- Smallest share (4%) of region's industrial lands
- Smallest share (1%) of region's vacant lands

Richmond (including YVR Sea Island) – 1,741 ha

- Includes lands at YVR International Airport
- Includes notable retail sites within industrial areas
- 271 ha 'Other / Vacant' (97 ha vacant port lands; 62 ha vacant YVR airside / groundside lands, and 66 ha as vacant lands)
- Largest share (9%) of their Inventory is on strata lots

Delta / Tsawwassen First Nation – 1,655

- Many industrial lands on Annacis Island and River Road area / corridor
- Roberts Bank Terminal is a significant part of Inventory (282 ha) as 'Developed Port Terminal'
- 313 ha 'Other / Vacant'; 66 ha peat extraction site in central Delta
- Largest share (28%) of region's Distribution / Warehouse lands
- Largest share (20%) of region's Manufacturing / Production lands
- Largest share (26%) of region's developed Port lands

Surrey – 2,534 ha

- Surrey has the largest amount of industrial lands in the region
- Major industrial areas include: Newton (including BC Hydro electrical sub-station lands), South Westminster, Port Kells, Campbell Heights
- 616 'Other / Vacant' (365 ha vacant land; 135 ha 'Agriculture'; 102 ha 'Residential')
- Largest share (20%) of region's developed lands
- Largest share (29%) of region's vacant lands
- Largest share (38%) of region's Outdoor Storage lands

Langley (City and Township) – 996 ha

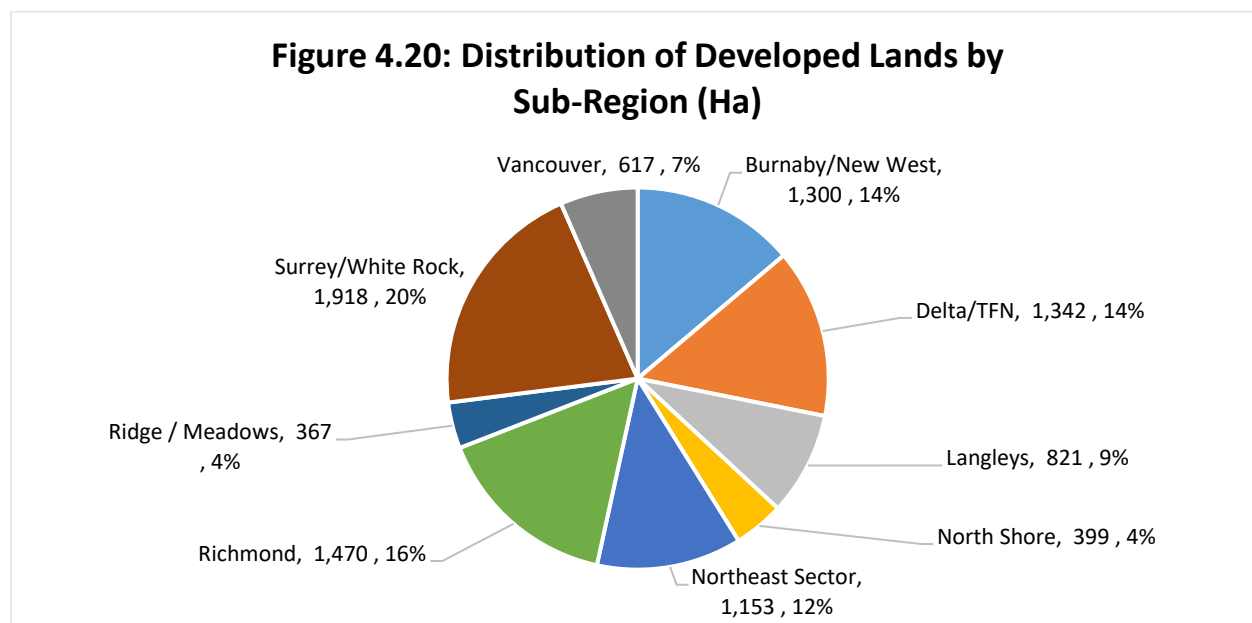
- Port Kells area mostly 'Developed'
- Gloucester Estates mostly 'Developed' as 'General Industrial'
- Smaller industrial sites along Fraser Highway
- Second largest share (20%) of region's Distribution / Warehouse lands

4.3 'Developed' Inventory

This section documents the 'Developed' lands, which comprise 82% of the Inventory or 9,387 ha.

4.3.1 Geographic Sub-Regions

Of the 'Developed' lands, much are located in Surrey (20%), followed by Richmond (16%), as shown in the figure.

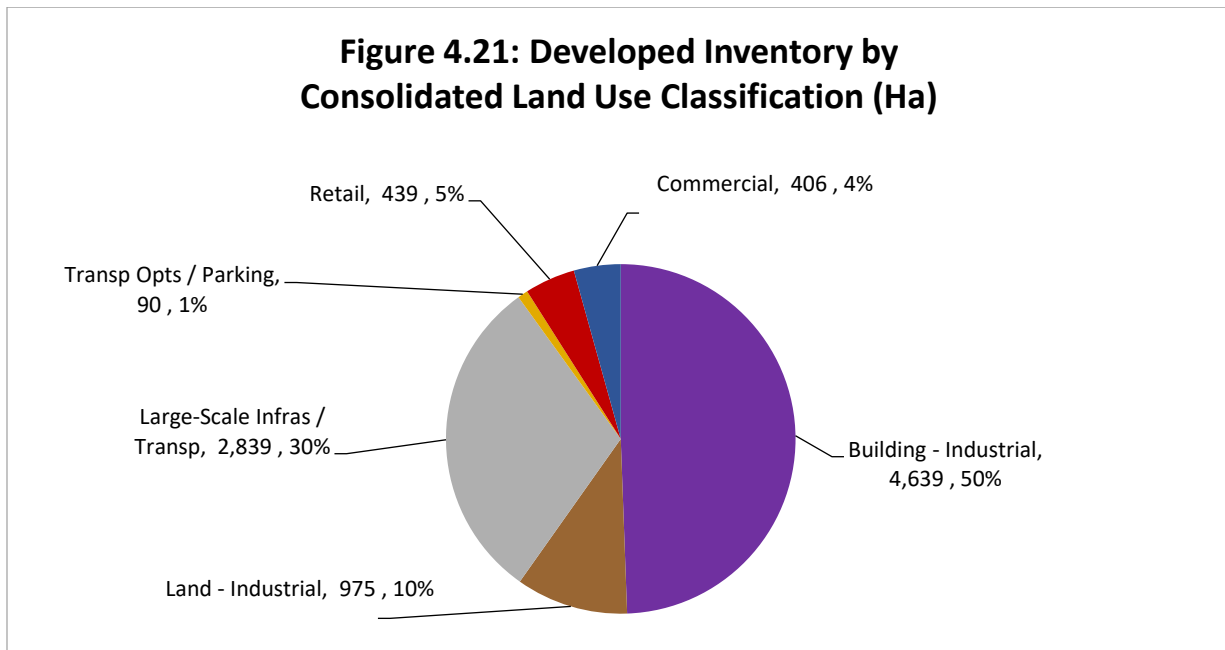


4.3.2 Land Use Classifications

Of the 'Developed' Inventory, the largest two land use classifications were: 40% 'Building Intensive Industrial' and 25% 'Large-Scale Infrastructure / Transportation', with more information in the following table and figure. The other land use classifications make up a relatively small part of the Inventory. The following table and figure provide this information as well as the classification by sub-region.

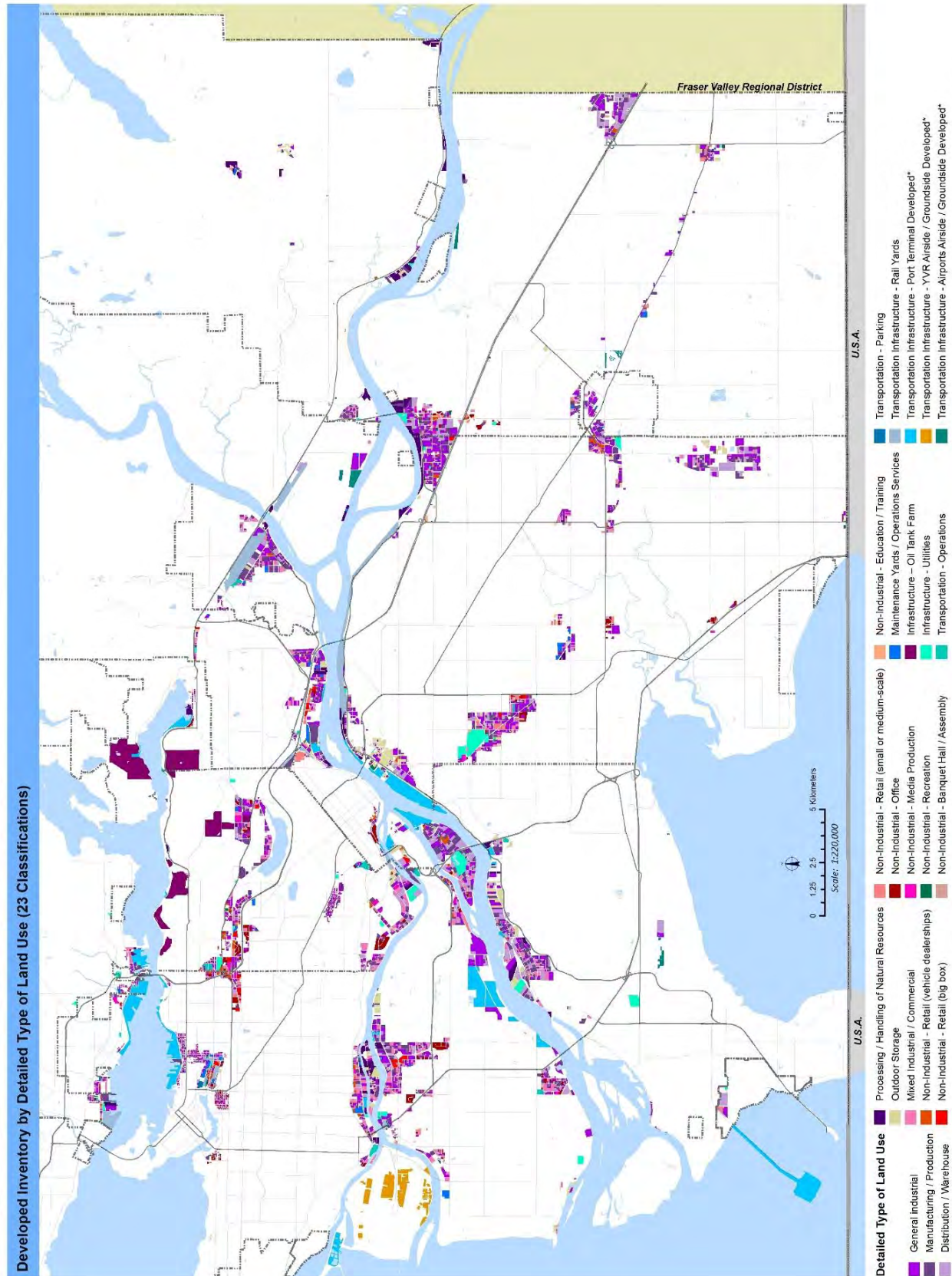
Table 4.23: Inventory by Sub-Region and Consolidated Land Use Classification

Sub-Regions	Building - Industrial	Land - Industrial	Large-Scale Infra / Transp	Transp Opts / Parking	Retail	Commercial	Other / Vacant	Total - HA	% of Total
Burnaby/NewWest	597	78	380	23	89	133	42	1,342	12%
Delta/TFN	783	120	397	5	29	8	313	1,655	14%
Langley	605	85	44		46	40	176	996	9%
North Shore	110	16	244	5	10	14	21	420	4%
Northeast Sector	445	82	565	9	39	12	56	1,209	11%
Richmond	707	136	490	17	53	68	271	1,741	15%
Ridge/Meadows	124	138	101		3	1	593	960	8%
Surrey/WhiteRock	1,029	264	462	5	84	74	616	2,534	22%
Vancouver	239	55	155	26	85	57	27	644	6%
Total	4,639	975	2,839	90	439	406	2,115	11,502	100%
% of Total	40%	8%	25%	1%	4%	4%	18%	100%	

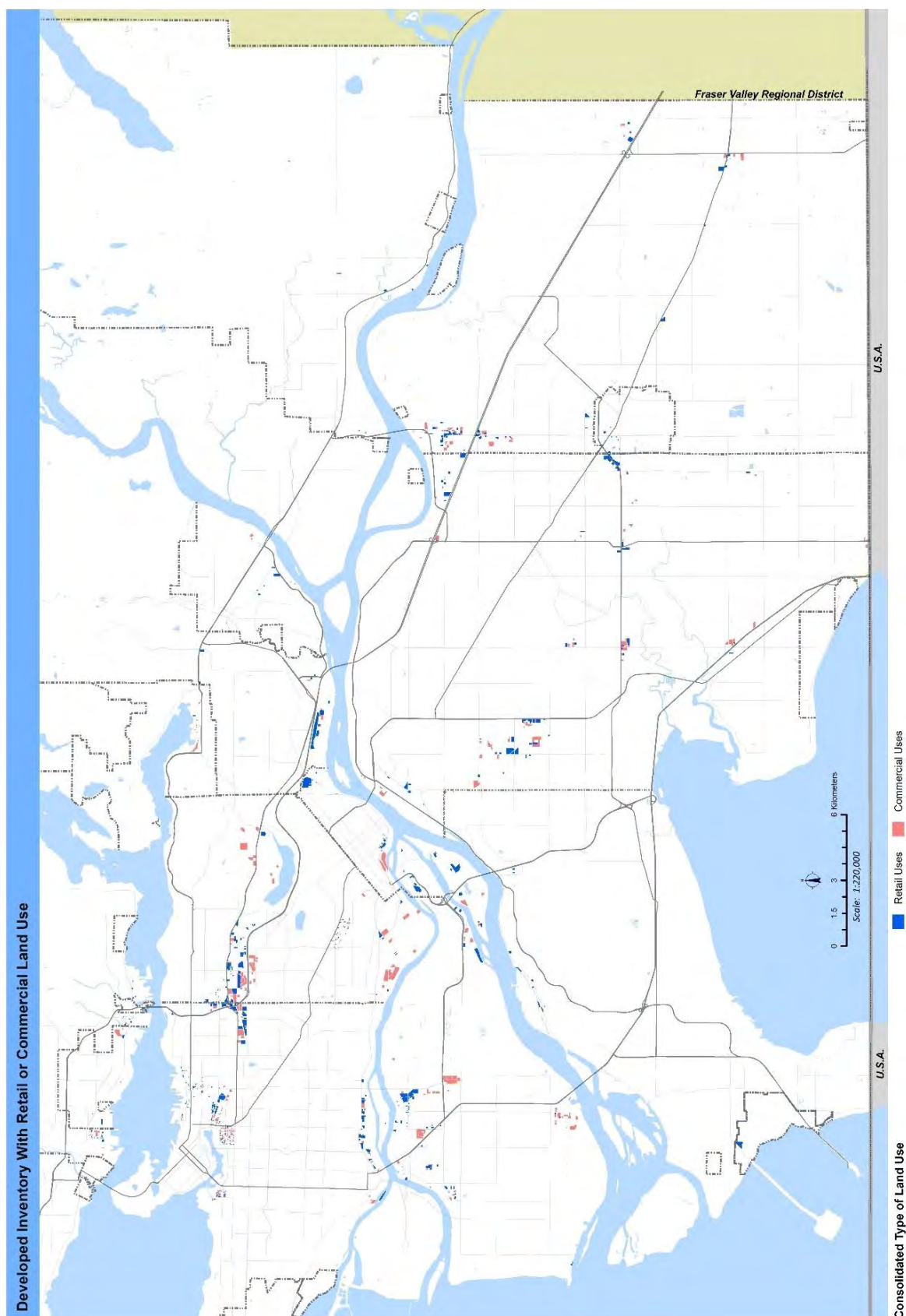


The following map shows the 'Developed' lands by detailed land use classification. Much of the Inventory was 'General Industrial', shown as dark purple, as well as large infrastructure / utility sites and port terminals. The subsequent map shows 'Commercial' and 'Retail' uses occurring on industrial lands.

Map 4.9: Developed Inventory by Detailed Type of Land Use (18 Classifications)



Map 4.10: Inventory with Retail or Office Land Use



4.3.3 Site Size

The following tables and figure analyze ‘Developed’ and ‘Other / Vacant’ lands by site size. There were many sites (comprising 20% of ‘Developed’ and 10% of ‘Other / Vacant’) between 0 and 2.0 ha in size, and also a significant amount (21% and 24% respectively) comprising sites over 20 ha in size. By sector, the larger (20 ha and over) sites were mostly in the ‘Large-Scale Infrastructure / Transportation’ land use classification.

Table 4.24: Distribution Size of Sites by Percentage of Lands

Site Size	Developed	% of Total Lands	Vacant	% of Total Lands
less than 1 HA	1,880	20%	210	10%
1 to 1.99 HA	1,574	17%	225	11%
2 to 4.99 HA	2,037	22%	330	16%
5 to 9.99 HA	1,146	12%	380	18%
10 to 19.99 HA	734	8%	469	22%
20 HA and over	2,016	21%	501	24%
Total	9,387	100%	2,115	100%

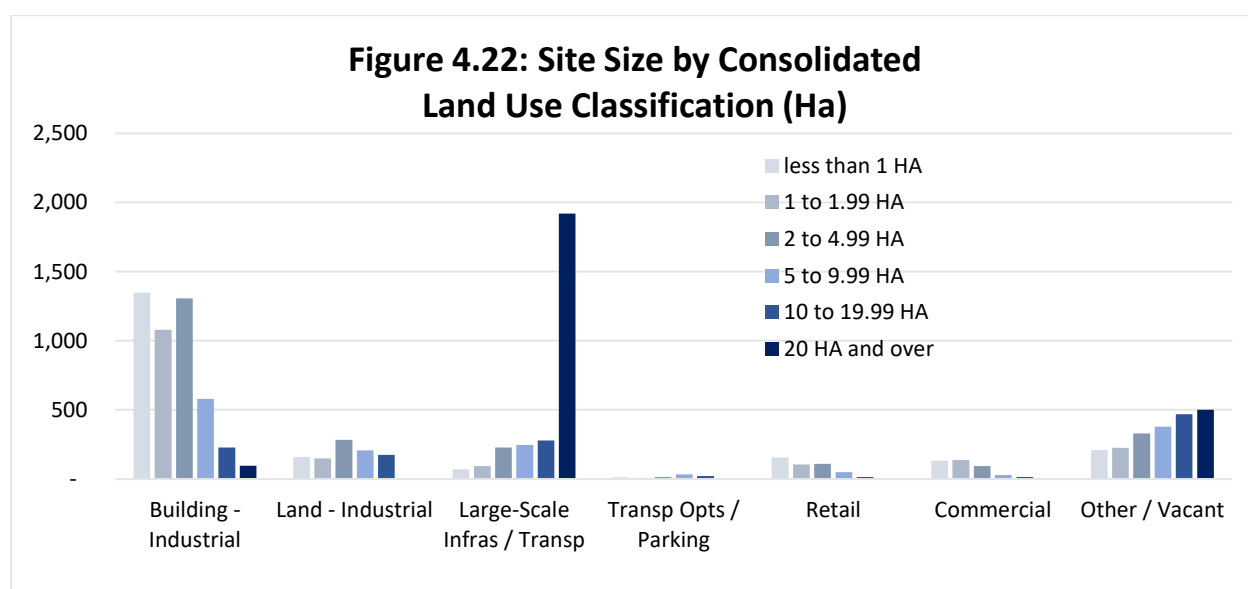


Table 4.25: Site Size Distribution of Lands by Consolidated Land Use Classification

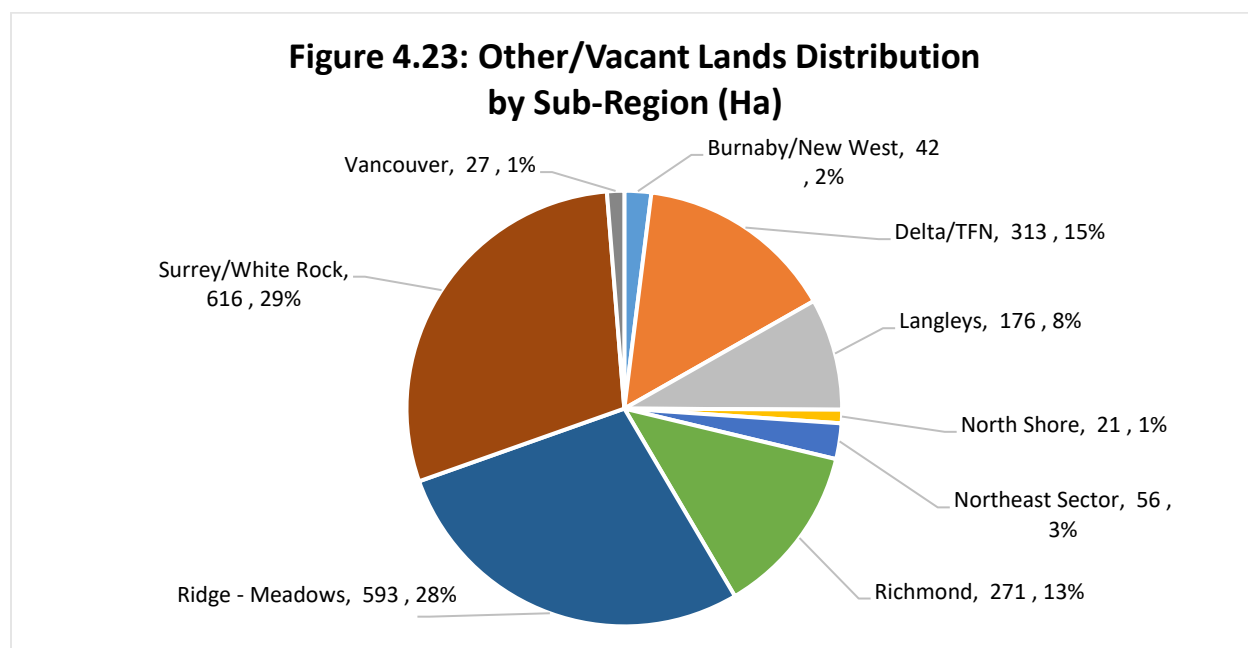
Site Size	Building - Industrial	Land - Industrial	Large-Scale		Retail	Commercial	Other / Vacant	Total
			Infras / Transp	Transp Opts / Parking				
less than 1 HA	1,348	159	72	12	157	132	210	2,090
1 to 1.99 HA	1,081	148	93	8	105	138	225	1,798
2 to 4.99 HA	1,306	284	228	14	111	94	330	2,367
5 to 9.99 HA	581	207	246	33	50	28	380	1,525
10 to 19.99 HA	228	175	279	23	16	14	469	1,204
20 HA and over	95		1,921				501	2,517
Total	4,639	975	2,839	90	439	406	2,115	11,502

4.4 'Other / Vacant' Inventory

This section documents the Inventory's 'Other / Vacant' lands, which comprise 18% of the Inventory or 2,115 ha. The 'Other / Vacant' category includes lands that are completely vacant, as well as those that have non-industrial uses with the potential to redevelop to industrial uses.

4.4.1 Geographic Sub-Regions

By sub-region, for the 'Other / Vacant' Inventory, 29% was located in Surrey, 28% in Ridge / Meadows, 15% in Delta / Tsawwassen First Nation, and 13% in Richmond, as seen in the figure.

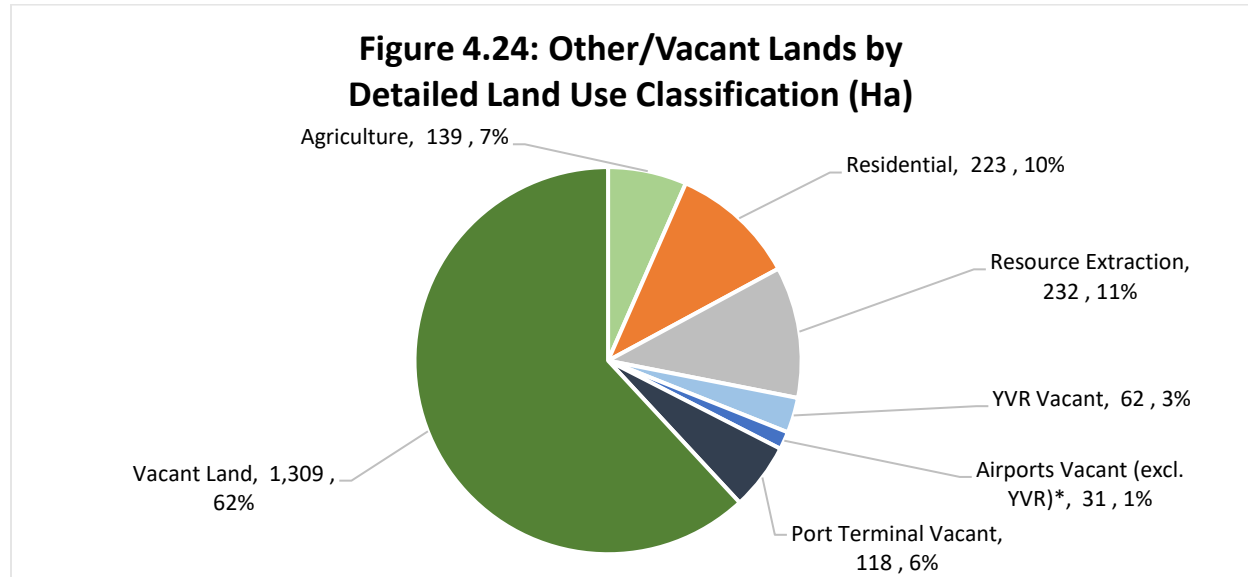


Specific notable major 'Other / Vacant' lands include:

- Tsawwassen First Nation lands that abut the Roberts Bank Terminal and that are accessible by the South Fraser Perimeter Road (SFPR);
- Campbell Heights in south-east Surrey;
- North-east Maple Ridge, which is located far from transportation infrastructure; and
- Some smaller sites in Richmond, Delta, Surrey, Langley, and Pitt Meadows.

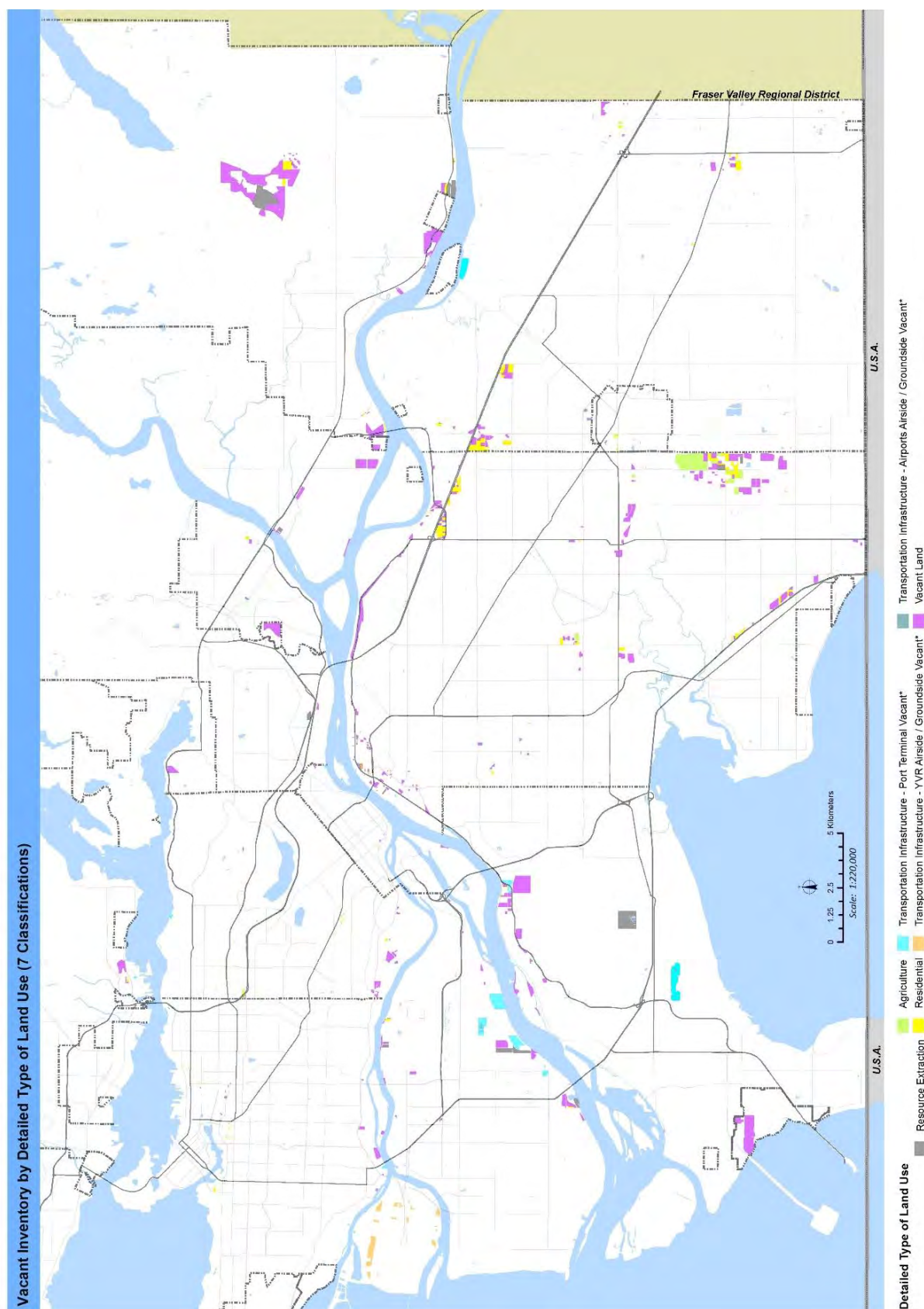
4.4.2 Land Use Classification

'Other / Vacant' lands comprise six land use categories: 62% were completely vacant, 11% 'Resource Extraction' 10% 'Residential', and 7% 'Agriculture', as seen in the figure. These lands offer future opportunities for industrial development.



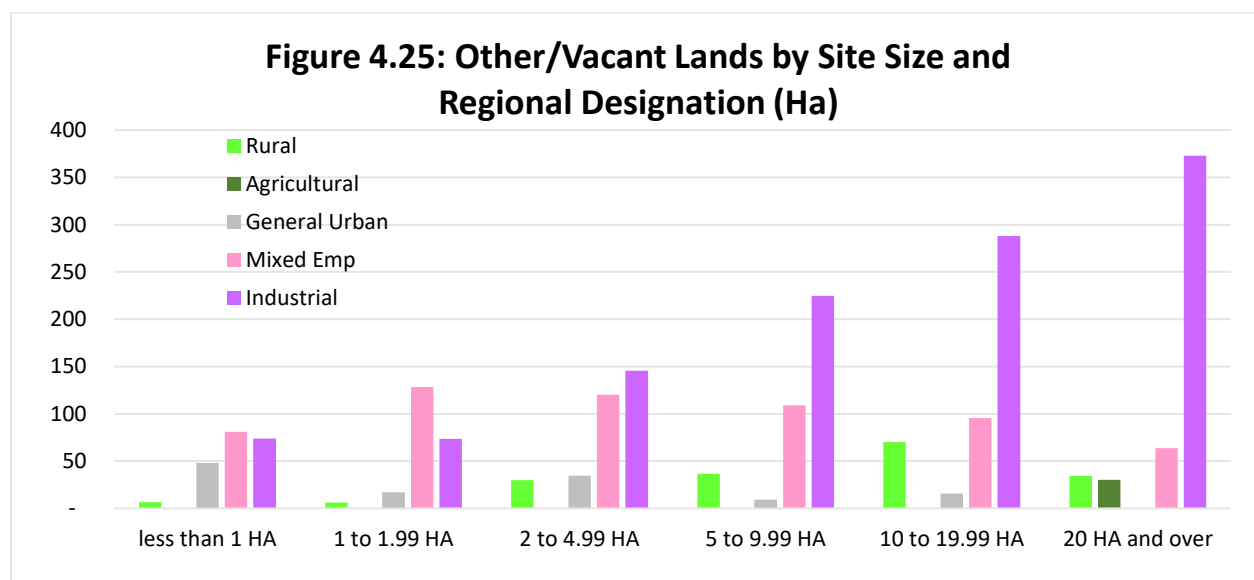
The following map shows the 'Other / Vacant' lands, by the six categories of uses. The lands were distributed throughout the region, with large resource extraction sites in Richmond, Delta, and Maple Ridge, and numerous residential uses in Surrey and Langley Township.

Map 4.11: Other/Vacant Inventory by Detailed Type of Land Use (6 Classifications)

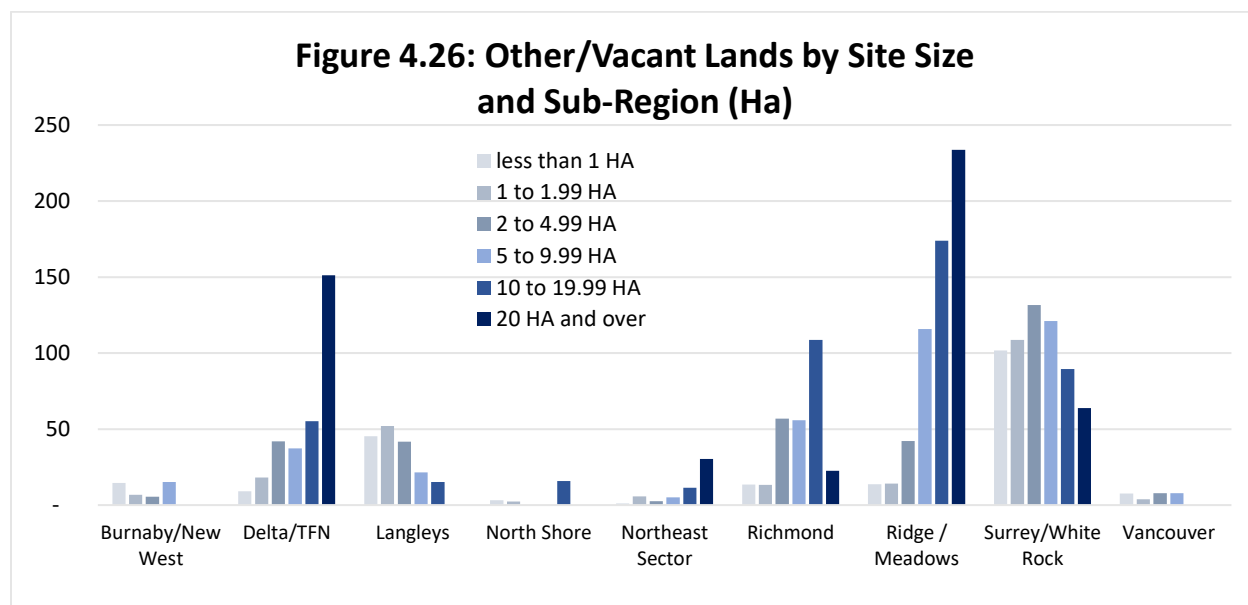


4.4.3 Site Size

For the 'Other / Vacant' lands (2,115 ha), the following figure shows the site size distribution by regional designation. Larger sites tend to be regionally designated 'Industrial', whereas many mid-sized sites were 'Mixed Employment', and smaller sites had a higher proportion of 'General Urban' designation.



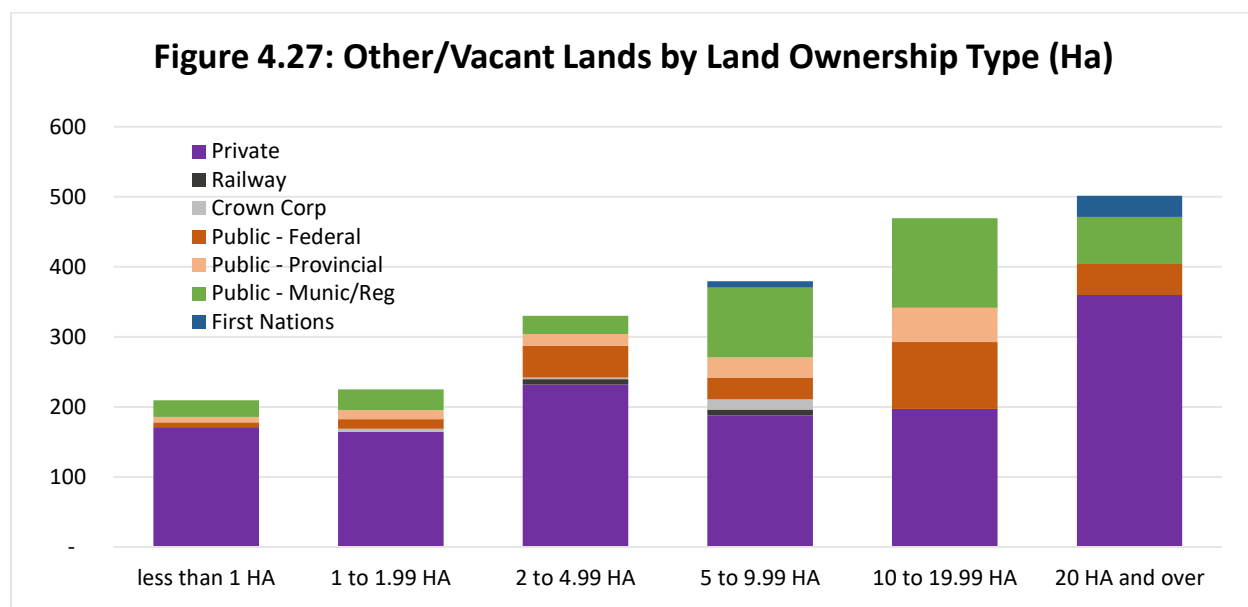
The following figure shows the distribution of 'Other / Vacant' lands by sub-region by site size. Most of the larger 'Other / Vacant' industrial sites were located in Surrey, Richmond, Delta / Tsawwassen First Nation, and Ridge / Meadows.



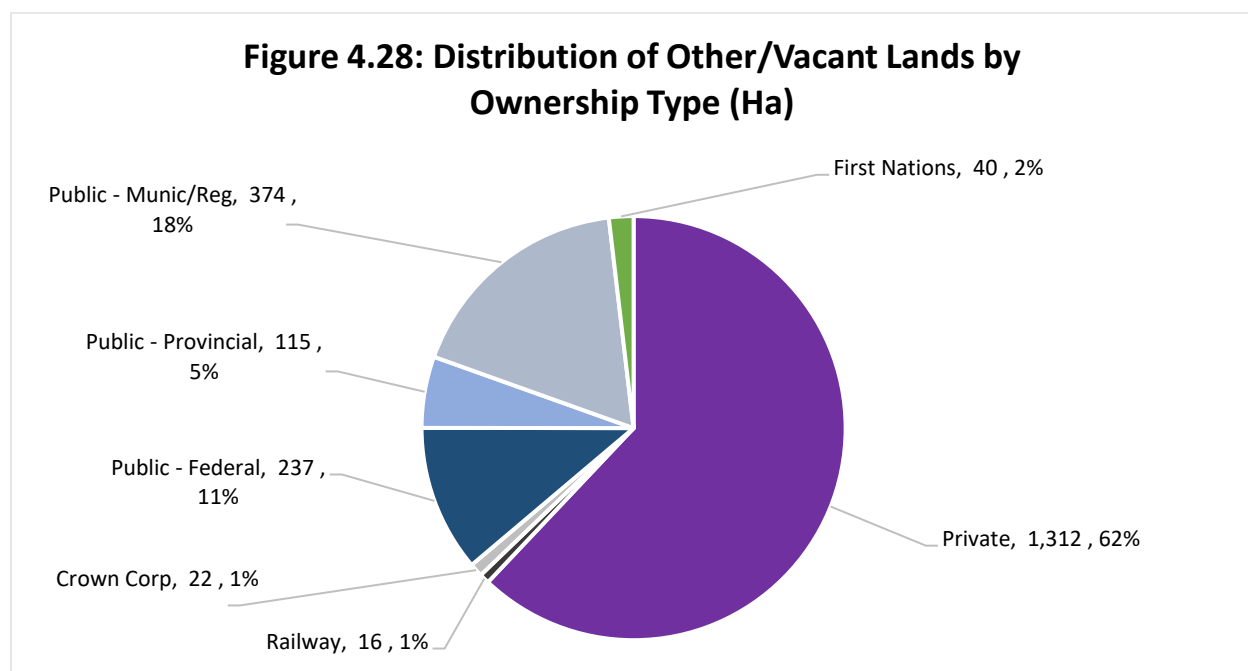
4.4.4 Land Ownership Type

In most size categories, the majority of lands were privately owned, however for the 8.0 to 20.0 ha size range, there were more municipal / regional government and federal government owned lands,

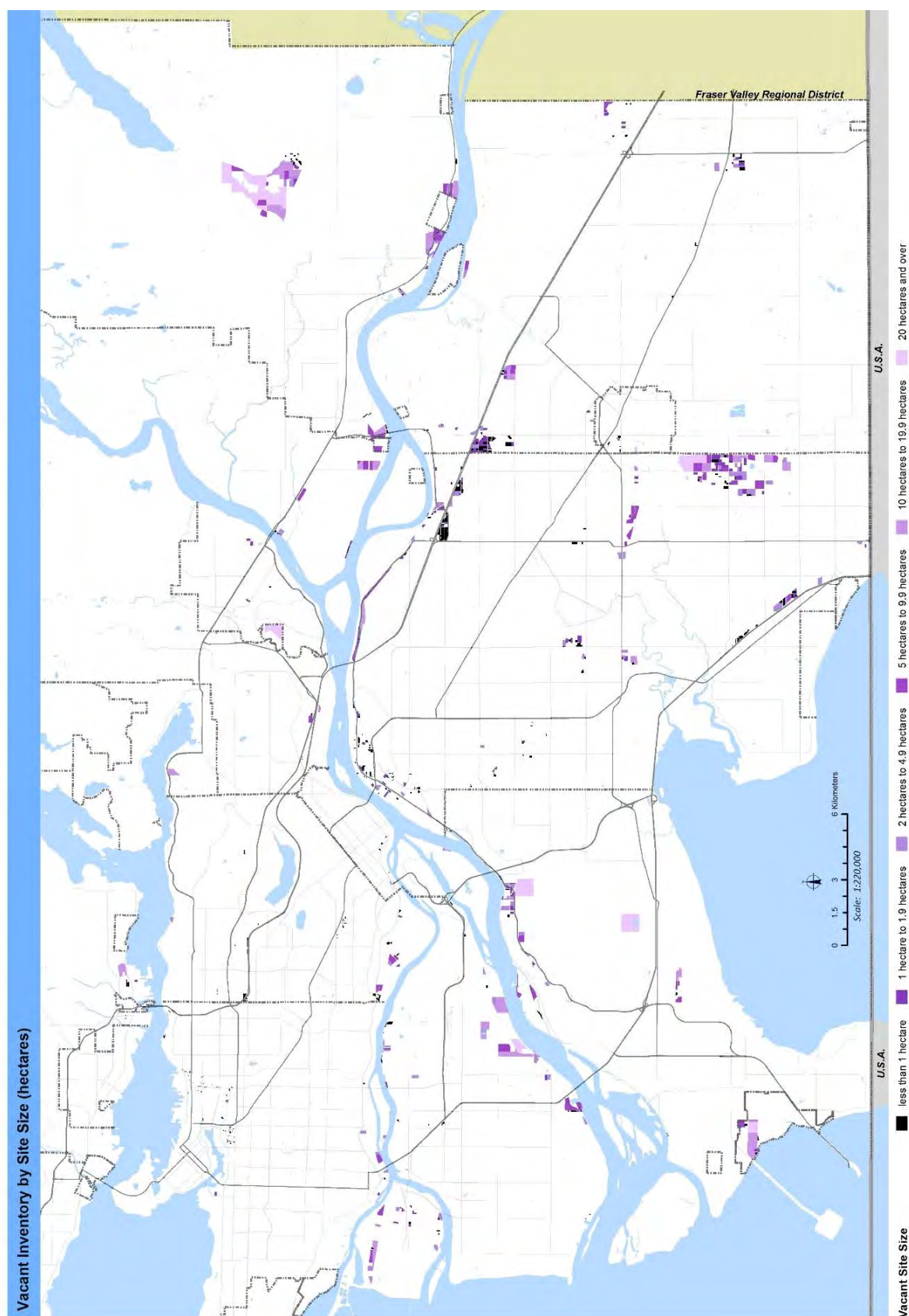
as illustrated in the figure. Particularly, of the 1,312 ha of 'Other / Vacant' privately owned lands, 360 ha (27%) were large sites (20+ ha).



In terms of 'Other / Vacant' lands, 62% were privately owned, 11% owned by the federal government, 5% by the provincial government, and 18% by municipal / regional governments, as illustrated in the following figure and map.



Map 4.12: Other/Vacant Inventory by Site Size Range



4.4.5 Detailed Vacant Inventory Analysis

The 'Other / Vacant Lands' total 2,115 ha, distributed over seven different categories. Three of the categories (totalling 212 ha) are unique in that they are associated with airports and the Port, which have different jurisdictions, tenures, and user needs. There are also lands within the Inventory used for Agriculture (139 ha), Residential (223 ha), and Resource Extraction (232 ha) that are designated for industrial uses and generally expected to convert to such cover time.

This subset of the Inventory is detailed in the following tables, with notable observations:

- 56% were regionally designated 'Industrial', and 28% were designated 'Mixed Employment'.
- 29% of the 'Other / Vacant' land were in Surrey and 25% in Maple Ridge.
- Nearly all of the lands associated with port and airport were owned by the federal government.
- Of the 1,309 ha of 'Other / Vacant Land', 60% (791 ha) were privately owned.

Table 4.26: Other/Vacant Lands by Regional Designation and Detailed Land Use Classification

	General					Total
	Rural	Agricultural	Urban	Mixed Emp	Industrial	
Agriculture				133	6	139
Residential	19		42	115	47	223
Resource Extraction	9		5	18	200	232
YVR Airside / Groundside Vacant					62	62
Airports Vacant (excluding YVR)				21	10	31
Port Terminal Vacant			8		109	118
Vacant Land	154	31	69	310	744	1,309
Total	183	31	125	597	1,179	2,115

Table 4.27: Other/Vacant Lands by Municipality and Detailed Land Use Classification

Row Labels	Agriculture	Residential	Resource Extraction	YVR Airside / Groundside Vacant	Airports Vacant (excl. YVR)	Port Terminal Vacant	Vacant Land	Total
Burnaby	0	5				3	31	39
Coquitlam		0	5				3	8
Delta		1	66		21	12	127	228
Langley City		3					1	3
Langley Township	4	71			10		87	172
Maple Ridge		27	102				398	527
New Westminster		0				1	2	3
North Vancouver District		1	1			1	18	21
Pitt Meadows			4				62	66
Port Coquitlam		2					34	36
Port Moody		0					11	11
Richmond		4	41	62		97	66	271
Surrey	135	102	13			1	365	616
Tsawwassen First Nations							84	84
Vancouver		6				3	18	27
Total	139	223	232	62	31	118	1,309	2,115

Table 4.28: Other/Vacant Lands by Detailed Land Use Classification and Ownership Type

	Private	Private - Railway	Crown Corp	Public - Federal	Public - Prov	Public - Muni/Reg	First Nations	Total
Agriculture	86			53				139
Residential	206				1	16		223
Resource Extraction	219	4	8		1			232
YVR Airside / Groundside Vacant				62				62
Airports Vacant (excluding YVR)	10					21		31
Port Terminal Vacant				118				118
Vacant Land	791	12	14	3	113	337	40	1,309
Total	1,312	16	22	237	115	374	40	2,115

5 Inventory Change Over Time

The Metro Vancouver 2020 Regional Industrial Lands Inventory was prepared to allow for comparison with past Inventories (namely the revised 2015 Inventory). Although using a consistent methodology, it is important to note that the Inventories use various data sources as well as in some cases professional judgment to estimate the Inventory as of a specific point in time. As the 2010 and 2005 Inventories used a different methodology than the 2015 (revised) and 2020 Inventories, comparing the more recent Inventories with older Inventories is not advised.

The work associated with the 2020 Inventory included some adjustments to the 2015 Inventory. Accordingly, the revised 2015 Inventory numbers included within this report have been adjusted from the previously published report to reflect the application of the edits to the methodology, and are thus more comparable with the 2020 Inventory results (see Appendix 10 for greater details).

5.1 Components of Change

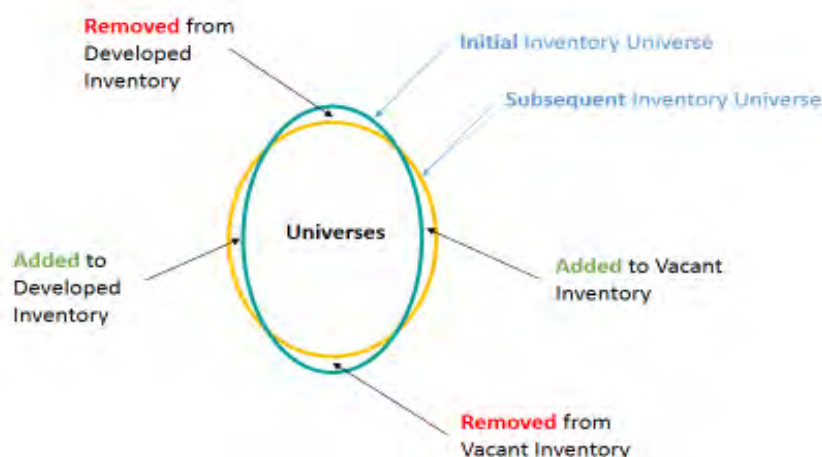
There are two sets of ‘moving parts’ associated with comparing multiple Inventories:

- Changes in total Inventory area (‘Lands Added’ and ‘Lands Removed’) between the periods; and
- Lands that became ‘Developed’ (i.e. absorbed) or became ‘Vacant’ between the periods.

In terms of net changes, there are both gross additions to the Inventory and gross removals. While 97% of the Inventory remained unchanged between 2015 and 2020, lands were added in some areas, and lands were removed in other areas.

The following figure conceptually illustrate that most of the ‘universe’ or scope of lands included in the Inventory remained constant between the 2015 and 2020 Inventories, however there were some changes. Some lands were added to, and some lands were removed from, the preceding 2015 Inventory. These land additions and removals included both ‘Developed’ and ‘Other / Vacant’ lands.

Figure 5.1: Conceptual Illustration of Changes in the Inventory Universes



In terms of changes in Inventory composition ('Developed' and 'Other / Vacant' status – as defined elsewhere in this report) between periods, the following figures conceptually illustrate that most lands retained their earlier classification, with some properties converting between developed or vacant classifications, and some properties were added or removed from the Inventory.

Figure 5.2: Conceptual Illustration of Changes in Inventory Developed and Vacant Areas

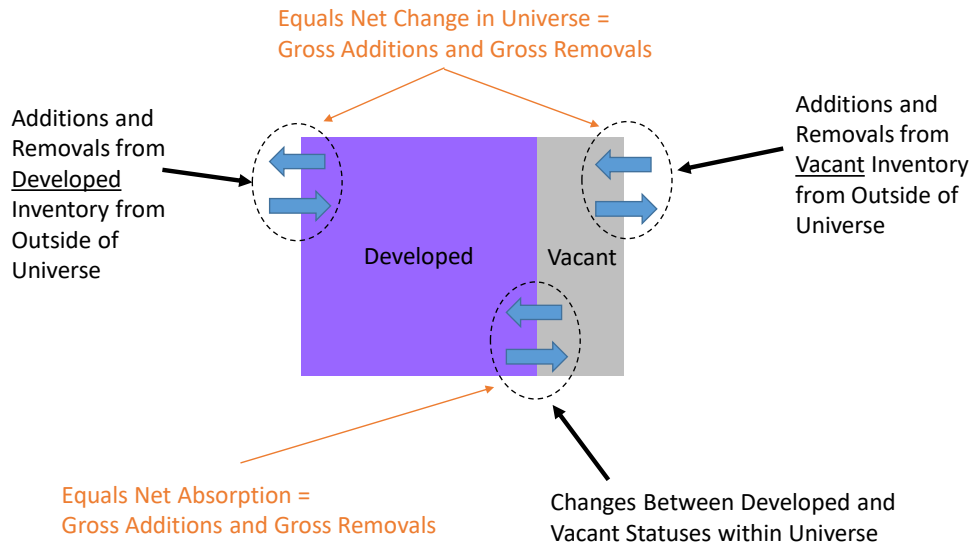
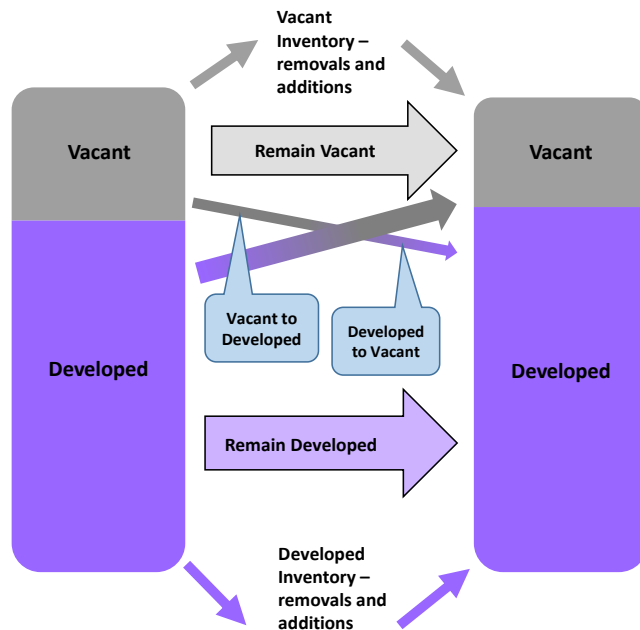


Figure 5.3: Conceptual Illustration of Changes in Inventory Composition



5.2 Revised 2015 Inventory

Along with preparation of the detailed 2020 Inventory, some refinements were made to the 2015 Inventory to maintain consistency and allow for comparison between the 2015 (revised) and 2020 results (but no changes were made to the 2010 and 2005 Inventories). The revised 2015 Inventory results reflect adjustments made to the original published Inventory that account for and neutralize varying municipal staff interpretation in comparison to the 2020 Inventory. All numbers in this report reflect the revised 2015 Inventory.

5.3 Geographic Areas of Change from 2015 to 2020

Between 2015 and 2020 there were some notable additions and removals to the Inventory. These changes in the study universe of industrial lands are independent of their land use status (i.e. 'Developed' or 'Other / Vacant'). These changes between Inventories are documented in the following series of tables.

323 ha (798 ac) of land were added to the Inventory, mostly in Maple Ridge, Delta, and Port Coquitlam, and 70 ha (174 ac) were removed from the Inventory. These two sets of changes resulted in a net increase of 252 ha (624 ac) of land over the 2015 to 2020 period.

(As an aside, since mid-2011 when *Metro 2040* was adopted to mid-2020, there has been a net reduction or conversion of 7.4 ha (18 ac) of 'Industrial' and 'Mixed Employment' regionally designated lands. Much of this change was from adjustments / refinements associated with processing municipal regional context statements received after the adoption of the regional growth strategy and was anticipated as part of the process of aligning municipal and regional plans.)

Table 5.1: Industrial Land Additions and Removals by Municipality, 2015-2020

Municipality	Lands Added		Lands Removed		NET Lands Added/Removed	
	Area (Ha)	Area (Ac)	Area (Ha)	Area (Ac)	Area (Ha)	Area (Ac)
Burnaby	0	1	13	33	-13	-32
Coquitlam	7	17	2	5	5	12
Delta	63	155	2	5	61	150
Langley City	0	0	2	4	-2	-4
Langley Township	12	29	7	18	5	12
Maple Ridge	182	449	0	0	182	449
New Westminster	0	0	11	27	-11	-27
North Vancouver City	0	0	0	1	0	-1
North Vancouver District	3	7	4	9	-1	-3
Pitt Meadows	10	26	0	0	10	26
Port Coquitlam	30	75	3	8	27	67
Port Moody	0	0	1	4	-1	-4
Richmond	6	14	4	9	2	4
Surrey	11	26	13	33	-3	-7
TFN	0	0	3	8	-3	-8
Vancouver	0	0	4	10	-4	-10
Total Added Lands	323	798	70	174	252	624

Major additions to the Inventory occurred in parts of Maple Ridge, some of which are located away from the region's major transportation infrastructure network.

Table 5.2: Notable Industrial Land Additions by Major Industrial Area, 2015-2020

Municipality	Area (Ha)	Area (Ac)
Maple Ridge (256th Street Industrial Area)	109	270
Maple Ridge (Southeast Waterfront)	70	174
Delta (Nordel)	63	155
Port Coquitlam (Mary Hill)	30	75
Pitt Meadows (Airport)	10	26
Surrey (Campbell Heights)	9	22
Langley Township (200 St Business Park)	7	18
Coquitlam (Pacific Reach/Cape Horn)	7	17
Richmond (Fraser Port)	6	14
Other	11	28
Total Added Lands	323	798

Of the 70 ha (174 ac) of lands removed from the Inventory, 19 ha (48 ac) or 27% were located within regionally identified Urban Centres. Notable additions to the Inventory occurred in parts of Burnaby (Still Creek), New Westminster (Queensborough), Surrey (Campbell Heights), and Langley Township (Willoughby).

Table 5.3: Notable Industrial Land Removals by Major Industrial Area, 2015-2020

Major Industrial Area	Area (Ha)	Area (Ac)
Burnaby (Still Creek)	11	26
New Westminster (Queensborough)	9	23
Surrey (Campbell Heights)	6	15
Langley Township (Willoughby)	5	13
North Shore	4	10
Surrey (South Westminster)	4	10
TFN	3	8
Port Coquitlam (Mary Hill)	3	7
Vancouver (Mt Pleasant)	2	6
Burnaby (Kingsway-Beresford)	2	5
Richmond (Brighthouse/Van Horne)	2	5
Delta (Tilbury)	2	5
Other	16	38
Total Removed Lands	70	174

Lands were removed from the Inventory for several reasons, mostly due to municipal policy changes (such as OCP designation changes or lands being rezoned and developed for non-industrial uses), as shown in the following table.

Table 5.4: Reasons for Industrial Lands Removals, 2015-2020

Reason	Area (Ha)	Area (Ac)
Road Right-of-Way	15	36
Municipal Policy - Zoning Change	32	79
Municipal Policy - OCP Change	12	30
Municipal Policy - Zoning and OCP Change	11	28
Total Removed Lands	70	174

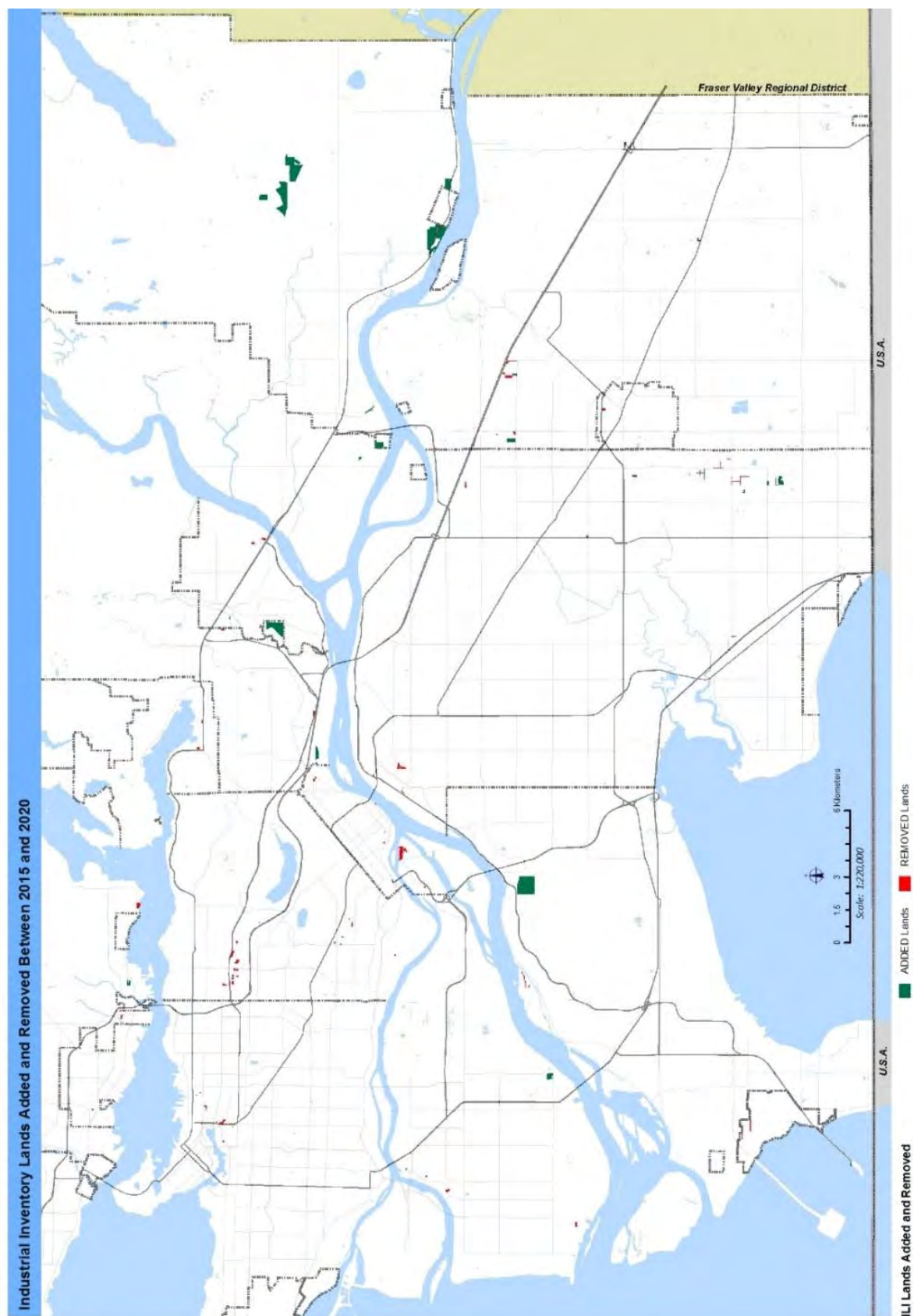
60% (43 ha) of the lands removed from the Inventory were regionally designated as 'General Urban', and therefore expected to turnover to a non-industrial use in the future. Unexpectedly however, 20% (14 ha) of the removals were regionally designated 'Industrial' and 'Mixed Employment', which are identified for industrial uses.

Table 5.5: Regional Designations of Industrial Lands Removals, 2015-2020

RGS Designation	Area (Ha)	Area (Ac)	Percent
Agricultural	0	0	0%
Con Rec	0	0	0%
General Urban	43	105	61%
Industrial	14	34	20%
Mixed Emp	14	34	20%
Total Removed Lands	70	174	100%

The following map shows the additions (in green) and removals (in red) to the Inventory lands between 2015 and 2020. Notable removals can be seen in Still Creek in Burnaby, Queensborough in New Westminster, Campbell Heights in Surrey, and Willoughby in Langley. Notable additions were in the 256th Street industrial area in Maple Ridge, Southeast Waterfront in Maple Ridge, Nordel in Delta, and Mary Hill in Port Coquitlam (on the Kwikwetlem Reserve).

Map 5.1: Inventory Lands Added and Removed Between 2015 and 2020



Of the 323 ha of lands added to the Inventory over the 2015-2020 period, 23 ha (7%) were 'Developed' by 2020, while 300 ha (93%) were added to the 'Other / Vacant' category (noting the different detailed categories). These newly added lands were mostly (79%) in the vacant land use classification, with an additional 9% being residential, as shown in the following table.

Table 5.6: Gross Lands Added to the 2020 Inventory by Land Use Classification

Developed Lands - Type of Use	Area (Ha)	% Share
Distribution / Warehouse	5	2%
General industrial	7	2%
Maintenance Yards / Operations Services	7	2%
Manufacturing / Production	2	1%
Outdoor Storage	1	0%
Processing / Handling of Natural Resources	2	0%
Sub-Total	23	7%
Vacant Lands - Type of Use	Area (Ha)	% Share
Agriculture	1	0%
Residential	29	9%
Resource Extraction	9	3%
Transportation Infrastructure - Port Terminal Vacant	6	2%
Vacant Land	256	79%
Sub-Total	300	93%
TOTAL	323	100%

5.4 2015 to 2020 Change in Inventories

This section compares the totals ('Developed' and 'Other / Vacant') for the 2015 (revised) and 2020 Inventories. Lands were both added to and removed from the 'Other / Vacant' and 'Developed' categories between the Inventory periods. It is important to note that this differs from 'absorption', which tracks actual lands that convert between 'Other / Vacant' and 'Developed' status over the period (see Section 5.5).

Table 5.7 shows the change between the Inventory totals, resulting in the following changes to the Inventory:

- a 5% (456 ha) increase in 'Developed' industrial lands (from 8,931 ha to 9,387 ha)
- a 9% (211 ha) decrease in 'Other / Vacant' lands (from 2,326 ha to 2,115 ha)
- a net increase of 245 ha (from 11,257 ha to 11,502 ha)

Table 5.7: Net Change in Inventories Between 2015 (revised) and 2020

Hectares	Revised 2015	2020	NET Change 2015-2020
Developed	8,931	9,387	456
Vacant	2,326	2,115	(211)
TOTAL	11,257	11,502	245

Acres	Revised 2015	2020	NET Change 2015-2020
Developed	22,069	23,196	1,127
Vacant	5,747	5,226	(521)
TOTAL	27,816	28,422	606

The following points further explain the changes in the Inventory over the 2015-2020 period:

- Of the 8,931 ha of 'Developed' lands in the 2015 Inventory, 8,674 ha (97%) remained 'Developed', 211 ha (2%) became 'Other / Vacant', and 46 ha (1%) were removed from the Inventory by 2020.
- Of the 2,326 ha of 'Other / Vacant' lands in the 2015 Inventory, 1,845 ha (79%) were still 'Other / Vacant' in 2020, 456 ha (20%) were 'Developed', and 24 ha (1%) were removed from the Inventory by 2020.

(Note: The data shown in Table 5.7 is different than the data shown in Table 5.8, where the latter only shows the lands within the Inventories converting from 'Other / Vacant' to 'Developed' (absorption) and vice versa over the 5-year period, and excludes lands added to and removed from the Inventories (both 'Other / Vacant' and 'Developed') over the 5-year period.)

5.5 2015 to 2020 Land Development / Absorption

This section explains industrial land absorption (i.e. development), which differs from additions and removals to the Inventory.

Net absorption reflects two components, for only the lands that were included in the 2015 (revised) Inventory to 2020:

- Gross lands that changed from 'Other / Vacant' status to 'Developed' status;
minus
- Gross lands that changed from 'Developed' status to 'Other / Vacant' status over the same period.

Together, these two gross components provide for a net absorption. Although most activity consists of lands going from 'Other / Vacant' to 'Developed', some 'Developed' lands do become vacant before redeveloping. It is important to note that this absorption of land represents industrial lands as defined in the report.

The Inventory does not consider lands in the process of being developed unless or until visible construction activity (i.e. buildings, improvements) has occurred at the time of the Inventory date. Accordingly, for lands that were purchased / leased with development plans but not yet built, they were classified as vacant -- including them as 'Developed' would yield a higher recorded development or land absorption over the period.

It is important to note that documented 'absorption' or development rates are not the same as land demand. If more lands were available, particularly large sites in desired locations, the amount of land consumed or absorbed would be greater.

The following summarizes the land absorption for the Inventory periods:

- From 2015 to 2020, there was a gross positive land absorption of 507 ha (1,253 ac), and a gross negative land absorption of 23 ha (58 ac), providing for a net of 484 ha (1,196 ac), or 97 ha (239 ac) per year on average.
- The average annual absorption in the previous periods was: 76 ha (188 ac) for 2010-2015 and 93 ha (230 ac) for 2005-2010.

Notably, the land absorption rate was lower between the 2005-2010 and 2010-2015 periods, as illustrated in the following figure and table, which is generally consistent with industrial building growth over the periods. This difference in land absorption by periods could potentially be due to significant development of large industrial areas in the former period, and in the latter period less land supply available for development, and more efficient development and use of lands.

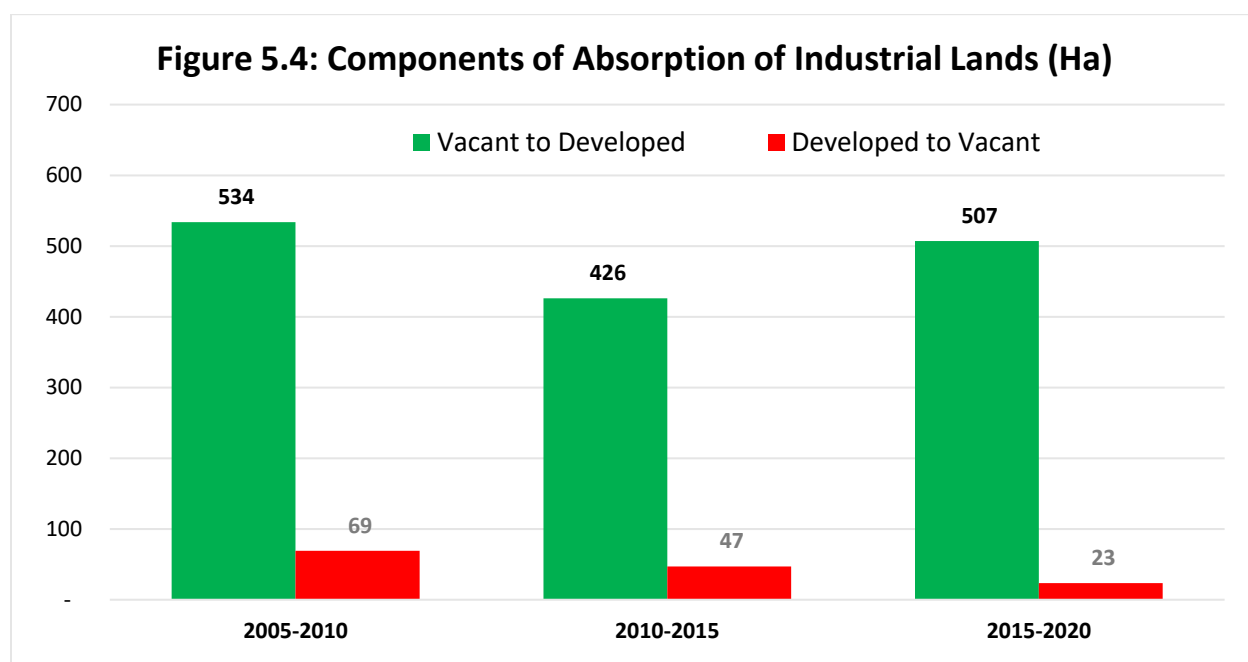


Table 5.8 shows the total lands ('Other / Vacant' and 'Developed') in both the 2015 (revised) and 2020 Inventories. The resulting difference between the 2015 and 2020 Inventories reflect two separate dynamics over the 2015-2020 period:

- Lands within the Inventories converting from 'Other / Vacant' to 'Developed' (absorption) and vice versa over the period; and
- Lands added to and removed from the Inventories (both 'Other / Vacant' and 'Developed') over the same period.

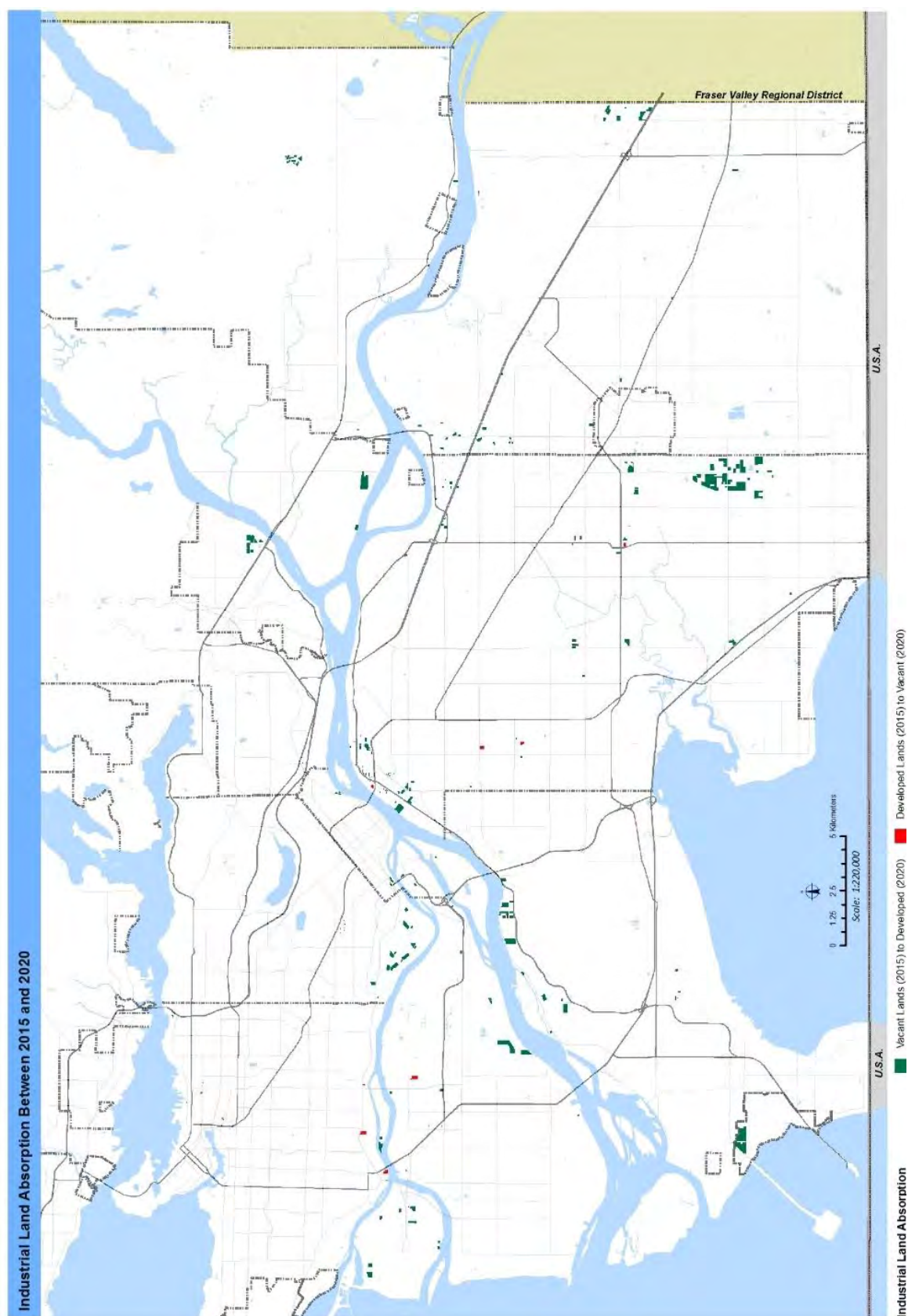
This differs from the data shown in Table 5.7, which shows the net change in Inventories between 2015 (revised) and 2020.

Table 5.8: Absorbed Inventory Lands, 2005-2010, 2010-2015, 2015-2020

<i>Hectares</i>	2005-2010	2010-2015	2015-2020
Other/Vacant to Developed	534	426	507
Developed to Other/Vacant	69	47	23
Net Absorption	465	379	484
<i>Average Annual Net Absorption</i>	93	76	97
<i>Acres</i>	2005-2010	2010-2015	2015-2020
Other/Vacant to Developed	1,320	1,054	1,253
Developed to Other/Vacant	170	116	58
Net Absorption	1,150	938	1,196
<i>Average Annual Net Absorption</i>	230	188	239

The following map shows the land absorption (positive and negative) activity between 2015 and 2020 as summarized in the above table. Absorbed lands are distributed throughout the region, most notably in Surrey (Campbell Heights and South Westminster), Langley Township (Willoughby and Gloucester), Delta (Tilbury), Burnaby (Big Bend), Port Coquitlam (Mary Hill), Maple Ridge (256th Street Industrial Area), and TFN and parts of Richmond.

Map 5.2: Inventory Lands Absorption Between 2015 and 2020



5.6 Types of Lands Absorbed between 2015 and 2020

For the purposes of the Inventory, land absorption is defined as the rate at which land is converted from 'Other / Vacant' status to 'Developed' status (as defined) for only the lands that were included in the 2015 (revised) Inventory. Over the 2015-2020 period, 507 ha (1,253 ac) of lands went from 'Other / Vacant' to 'Developed' status, while 23 ha (58 ac) of lands went from 'Developed' to 'Other / Vacant'. This yielded a net absorption of 484 ha (1,196 ac) of lands over the five-year period, for an annual average of 97 ha (239 ac).

The 507 ha of lands that were 'Developed' over the 2015-2020 period were distributed across the following land use classifications: 35% were added to the 'General Industrial' classification, followed by 20% in Distribution / Warehouse, 10% in Outdoor Storage, 8% in Mixed Industrial / Commercial, and 7% in Manufacturing / Production. The other categories, including some non-industrial uses, were smaller, as shown in the following table.

Table 5.9: Lands Developed over the 2015-2020 Period by Land Use Classification (as of 2020)

Type of Use	Area (Ha)	% Share
General industrial	178	35%
Distribution / Warehouse	99	20%
Outdoor Storage	53	10%
Mixed Industrial / Commercial	41	8%
Manufacturing / Production	38	7%
Transportation Infrastructure - Port Terminal Developed	23	5%
Transportation Infrastructure - YVR Airside / Groundside Developed	21	4%
Non-Industrial - Retail (small or medium-scale)	15	3%
Non-Industrial - Office	9	2%
Non-Industrial - Retail (vehicle dealerships)	6	1%
Processing / Handling of Natural Resources	5	1%
Infrastructure - Utilities	5	1%
Transportation Infrastructure - Rail Yards	4	1%
Transportation Infrastructure - Airports Airside / Groundside Developed (excluding YVR)	4	1%
Transportation - Parking	2	0%
Non-Industrial - Banquet Hall / Assembly	2	0%
Non-Industrial - Recreation	1	0%
Maintenance Yards / Operations Services	1	0%
TOTAL	507	100%

The amount of 2015 Inventory 'Other / Vacant' lands decreased by 531 ha (1,311 ac) during the 2015-2020 period: 507 ha (96%) became 'Developed' via absorption while 23 ha (4%) were entirely removed from the Inventory (due to municipal designation changes or land use changes).

5.7 Comparing Industrial Lands Inventory with Market Industrial Buildings Inventory

According to research from a local brokerage firm, the amount of tracked market industrial building floor space in the Metro Vancouver region was as shown in the following table for the noted years:

Table 5.10: Change in Building Floor Area Inventory

Building Inventory (mid year)	Total SQ FT	5 Year Change	Annual Average
2005	149,434,284		
2010	172,407,878	22,973,594	4,594,719
2015	186,173,719	13,765,841	2,753,168
2020	203,722,554	17,548,835	3,509,767

Source: Colliers Market Reports - End of Q2 reports.

Metro Vancouver Region, excluding Abbotsford.

The industrial building floor space growth rate for the 2005-2010 period was approximately 23.0 million sq ft; for the 2010-2015 period was 13.8 million sq ft; and for the 2015-2020 period 17.5 million sq ft. Within these five-year periods, the amount of development and absorption varied by year depending on a number of economic and market factors.

Over the period from 2015 to 2020, according to the 2020 Regional Industrial Lands Inventory there was industrial land absorption / development of 484 ha (1,195 ac).

The industrial building floor area increases over the three periods are generally in line with amount of industrial land developed for each period. These two data sets document the significant ongoing industrial development occurring in the region, along with some intensification, reflecting continued demand, on a limited land supply base.

However, it is not possible to accurately combine these two sets of numbers to calculate building/land density floor area ratios (FAR) due to a number of methodological and data limitation issues, namely:

- The growth in the amount of reported industrial building floor space is only that tracked by market reports, not all forms of industrial development.
- The growth in the amount of reported industrial building floor space occurred on both lands that were previously developed (infill / redevelopment) and newly developed lands (absorbed).
- Net land area is less than gross land area.

5.8 Possible Future Industrial Land Adsorption

This report is not intended to provide a detailed industrial land demand and development or absorption forecast. However, a general ‘theoretical’ estimate of the number of years of potential supply can be made using historical demand and absorption rates.

Past trends and input from the development and brokerage industry have generally suggested that historic rates of industrial land absorption have been between 100 and 160 ha (250 and 400 ac) per year. A 2015 study for the Port of Vancouver indicated that demand continues to be strong for industrial land, and annual demand for logistics industrial lands is forecast to increase from 40 ha (100 ac) to 65 ha (160 ac) or 85 ha (210 ac) due to increases of container throughput associated with the anticipated completion of Roberts Bank Terminal 2.

The Port’s study estimated a need for 1,000 ha (2,500 ac) of well-located developable industrial land by 2035 for Roberts Bank Terminal 2, even with dramatically improved operational efficiency, plus 1,200 ha (3,000 ac) for non-port industrial land demand. Some of the demand for industrial lands is trade related, and some is local serving or not directly dependent on the transportation network.

A 2021 report by Colliers consulting estimated industrial land demand during the 2018-2020 period at 95 ha (235 ac) per year, and noted that employment-based industrial demand forecast estimated the potential need for between 80 and 110 ha (200 - 275 ac) of industrial land per year between 2020 and 2050.

Applying estimated industrial land absorption rates to the 2020 Inventory lands can be used to estimate the hypothetical lifespan of the available lands. Using the estimated ‘Other / Vacant’ Inventory of 2,100 ha (5,220 ac), and simply assuming an annual land absorption of 100 ha (250 ac), for example, provides for slightly over 20 years of land supply.

However, a complex set of factors affect industrial land supply, demand, use, utilization, and absorption rates, and thus there are a number of important qualifiers with any estimates:

- Potential development constraints could affect the availability and development potential of the industrial land supply. The Inventory of ‘Other / Vacant’ lands includes some lands with non-industrial uses as well as site challenges that may limit their development and yield.
- The development potential of a portion of the lands will be hindered by factors such as location, current uses, accessibility, lot assembly, market considerations, soil conditions, need for pre-loading, or high development costs.
- Based on these various constraints, the possible supply of net developable lands will be lower than the theoretical gross supply and is not determined in this report. (The references in the Inventory and report are all to gross land areas, not net areas.)
- Some lands in the Inventory classified as ‘Other / Vacant’ were in the development process and are already ‘spoken for’, in some cases with specific tenants proposed or building on speculation. These allocated lands may not be available for future development.

- Industrial lands in the region have different location and site attributes, and thus potential for different types of industrial users. Thus, not all of the industrial lands are usable or available for all forms of industrial users. This is particularly the case for trade-oriented uses that need access to major transportation infrastructure.
- If future port trade activity and the volume of container traffic grows at a faster pace, the region could see stronger demand and further scarcity of industrial lands would occur sooner.
- This lifespan calculation would be further impacted if existing industrial lands are converted to other uses.
- On the other hand, if intensity and redevelopment increases, land would be needed at a slower rate.
- Similarly, if additional industrial lands were added to the Inventory, the supply of the (enlarged) Inventory could be extended.

Furthermore, a buffer of free space is required to accommodate redevelopment and vacancy and other forms of transition. As land demand and development reaches saturation or full capacity, the remaining supply will include smaller, scattered remnant parcels that may not be viable for larger industrial developments due to limited size, site constraints, and/or poor location and access.

At the same time however, land absorption rates will also be affected by the redevelopment of under-utilized properties and intensification of developed industrial areas, which could extend the lifespan of the land supply.

Further study of utilization, development, redevelopment and intensification of industrial lands, as well industrial land demand, possibly by type or sector, could be completed in separate studies.

6 Conclusion

The Metro Vancouver 2020 Regional Industrial Lands Inventory provides a comprehensive summary of the quantity and quality of industrial and associated lands in the Metro Vancouver region as of mid-2020. This work supports the implementation and objectives of the regional growth strategy and Regional Industrial Lands Strategy to protect and intensify industrial lands. Inventory highlights, key findings, and possible further work are outlined in the following sections.

6.1 2020 Inventory Highlights

Building on past Inventories completed for 2005, 2010, and 2015, the 2020 Regional Industrial Lands Inventory quantifies the Metro Vancouver region's lands as follows:

- In mid-2020 there were 11,502 hectares (28,422 acres) of lands within the Inventory study universe, as defined.
- 82% (9,387 ha) of lands were 'Developed' and 18% (2,115 ha) were 'Other / Vacant', as defined.
- Despite industrial lands being earmarked in municipal plans / policies for 'industrial use', the notion of 'Developed' does not imply all are (fully) developed and used for 'industrial purposes'. 'Other / Vacant' includes lands that have non-industrial uses. These uses impact the industrial capacity of the lands.
- Most of the lands in the Inventory are located in the southern and eastern parts of the region: 22% in Surrey, 15% in Richmond, and 14% in Delta / Tsawwassen First Nation.
- 40% of lands were classified as 'Building Intensive Industrial' use, with a range of industrial uses, along with associated accessory uses.
- 25% of the lands were used for 'Large Scale Infrastructure / Transportation' (utilities, port, airport, rail yards), which are not tracked by the market. The Inventory also included lands with non-industrial uses such as 'Retail' (4%) and 'Commercial' (4%).
- Of the 'Other / Vacant' lands in the Inventory, 3% were used for 'Resource Extraction', 2% for 'Residential', 1% for 'Agriculture', and 11% were undeveloped or fully vacant. These lands will serve as the future supply of industrial development.
- In terms of site sizes, 24% of 'Other / Vacant' industrial lands were on sites larger than 20 ha (50 ac), which are often associated with trade-oriented uses, although some sites may not be well-located for trade-oriented uses. The available site size impacts the types of industrial users that can be accommodated.
- Long-term protection in the form of regional and/or municipal policy for industrial lands varies, with 89% of the Inventory regionally designated as either 'Industrial' (67%) or 'Mixed Employment' (22%). At the municipal level, 82% were both zoned industrial and designated industrial. Of the 'Developed' lands, most (85-95% depending on the land use) were protected with both municipal industrial designation and industrial zoning. Some 3% (390 ha) of the Inventory had municipal industrial zoning but not municipal industrial designation, thus are at greater risk for conversion into non-industrial use in the coming years.

6.2 Notable Changes Between 2015 and 2020

Change in Inventory Universe Size

- In terms of inclusion (additions) or exclusion (removals) from the Inventory universe (which is separate from 'vacant' or 'developed' land use status) between 2015 (revised) and 2020: 323 ha (798 ac) of land were added, and 70 ha (174 ac) were removed. These two sets of changes resulted in a net increase of 252 ha (624 ac) of land over the five-year period.
- Most of the Inventory additions occurred in: Maple Ridge, Delta, and Port Coquitlam. Notable removals from the Inventory occurred in: Still Creek in Burnaby, Queensborough in New Westminster, Campbell Heights in Surrey, and Willoughby in Langley.
- Lands were removed from the Inventory due to a number of reasons, but mostly municipal policy changes (such as OCP designation changes or lands being rezoned and developed for non-industrial uses). Of the 70 ha (174 ac) of lands removed from the Inventory, 19 ha (48 ac) or 27% were located within regionally identified Urban Centres.

Change in Inventory 'Developed' and 'Other / Vacant' Lands Components

- Of the 8,931 ha of 'Developed' lands in the 2015 Inventory (revised), 8,674 ha (97%) remained 'Developed', 211 ha (2%) became 'Other / Vacant', and 46 ha (1%) were removed from the Inventory by 2020.
- Of the 2,326 ha of 'Other / Vacant' lands in the 2015 Inventory (revised), 1,845 ha (79%) were still 'Other / Vacant', 456 ha (20%) were 'Developed', and 24 ha (1%) were removed from the Inventory by 2020.
- Of the 323 ha of new lands added to the Inventory over the 2015-2020 period, 23 ha (7%) were 'Developed' by 2020, while 300 ha (93%) were added to the 'Other / Vacant' category (noting the different detailed categories). These newly added lands were mostly (79%) in the vacant classification, with an additional 9% being residential and 6% on Port terminal lands.
- From 2015 to 2020, there were the following changes to the Inventory:
 - a 5% (456 ha) increase in 'Developed' industrial lands (from 8,931 ha to 9,387 ha)
 - a 9% (211 ha) decrease in 'Other / Vacant' lands (from 2,326 ha to 2,115 ha)
 - a net increase of 245 ha (from 11,257 ha to 11,502 ha)

Industrial Lands Absorption

- In terms of absorption (vacant lands becoming developed, or vice versa) over the 2015 to 2020 period, 507 ha (1,253 ac) went from 'Other / Vacant' to 'Developed' status, while 23 ha (58 ac) of lands went from 'Developed' to 'Other / Vacant' status. This yielded a net absorption of 484 ha (1,196 ac) of lands over the five-year period, for an annual average of 97 ha (239 ac).
- The annual average net absorption of 97 ha during the 2015-2020 period was higher than the previous 2010-2015 and 2005-2010 periods where it averaged 76 ha and 93 ha, respectively.
- The amount of 'Other / Vacant' lands decreased by 531 ha (1,311 ac) during the 2015-2020 period: 507 ha (96%) became 'Developed' via absorption, while 23 ha (4%) were entirely removed from the Inventory (due to municipal designation changes or land use changes).

6.3 Important Considerations

Inventory methodology limitations are important considerations

The land use classification definitions reference the predominant or primary use of the site, including normally associated on-site accessory / ancillary uses (including parking and loading areas), as of mid-2020. Properties may include multiple or overlapping and non-discrete uses, in which case the predominant use is considered for the classification.

The classification process cannot be perfectly accurate, given the variety of different data sources and currency. This limitation in terms of selecting a single classification for each site is particularly acute in cases where there is a wider range of uses on lands or multiple level buildings.

The 2020 Inventory includes 30 detailed land use classifications, which are in some cases consolidated into 7 categories for reporting, spread over 9 sub-regions. Current land use classifications are independent of future-oriented land use designations / policies.

Qualitative attributes of lands matter

The Inventory comprises lands used and intended for industrial. The Inventory includes traditional and new types of industrial activities, quasi-industrial functions, and non-industrial uses on the lands. This may be in the form of various industrial uses of different types and scales; infrastructure and utilities that are not tracked by the market; commercial and retail uses that may have been pre-existing in an area or added more recently; and vacant and holding uses that may be temporary until the lands are developed for industrial as intended in the relevant land use plans.

It is important to note that the lands inventoried and amounts reported are gross areas; various types of constraints or limitations will reduce the net developable amount of land.

There is a wide range of types of industrial lands and industrial uses, which have different attributes and user needs. Industrial lands are not homogeneous and readily interchangeable or replaceable. The quality of lands, such as attributes like size, location, and site features, are as important as quantity of lands. For example, there may be vacant industrial lands available, but if they are located far away from major transportation infrastructure or have topographic constraints, it may not be viable for some or many types of industrial users. Thus, nuance is required when reviewing the statistics.

The 'Other / Vacant' lands category includes both lands that are completely vacant, and some other temporary holding uses such as agricultural, residential, and resource extraction, which may eventually be redeveloped in the form of industrial.

At the same time, 'Developed' lands have opportunity over time to redevelop to higher density / intensity forms of industrial buildings / uses. Industrial intensification / densification is a means to increase the industrial capacity of lands in a region with a limited land supply.

Increasing amounts of industrial lands are used for non-industrial purposes

Conversion of industrial lands can occur in different ways. Some industrial lands are re-designated and removed from the Inventory as per municipal plans, while other lands with flexible industrial designations are rezoned to allow for non-industrial uses. Some of these other types of uses support industrial activities, while others may threaten industrial areas, such as commercial and retail beyond those accessory or supporting industrial uses.

Some municipal plans include 'mixed employment' designations and zones that permit a wide range of industrial and commercial uses, which allows for more non-industrial uses in industrial areas, such as stand-alone retail, office, and other commercial. Allowing non-industrial uses in industrial areas reduces the land supply for industrial users and also can increase land prices and create land-use conflicts. These issues can destabilize industrial areas and compromise the ability for industrial growth.

Continued competing priorities for limited lands

The Metro Vancouver regional growth strategy and Regional Industrial Lands Strategy include industrial and other long range regional planning goals, such as accommodating population and employment growth, focusing commercial and housing development in Urban Centres, protecting agricultural and environmental lands, and supporting sustainable transportation forms. Because of these multiple objectives, at both the regional and local levels, there are in some cases competing or even conflicting policy priorities. For example, while protecting industrial lands is important, development of lands for housing and employment in Urban Centres and near rail rapid transit stations is also important.

Most but not all industrial lands are secured for long-term protection

Municipal policies (land use designations and zoning) and regional land use designations secure the long-term industrial use of industrial lands. These protective regional designations cover 82% of the lands in the Inventory. Lands that do not have such policy protection are more likely to convert and redevelop to other uses, particularly lands located in Urban Centres. Although in some cases this change may be consistent with local and regional plans, such conversions further reduce the supply of lands available for industry.

Lands added to and removed from the Inventory have different locational and site attributes

From 2015 to 2020, there was a net increase in the Regional Industrial Lands Inventory of 245 ha. During this period, 323 ha of land were added to the Inventory, mostly in Surrey, Langley, and Maple Ridge, and 70 ha were removed from throughout the region.

This figure reflects the fact that the amount of 'Other / Vacant' lands decreased by 9% (211 ha); some of which became 'Developed' (507 ha) and some of which were removed from the Inventory due to conversion to other uses (23 ha). Lands were removed from the Inventory due to a number of reasons, but mostly due to municipal policy changes (such as OCP designation changes or lands being rezoned and developed for non-industrial uses).

Much of the lands added to the Inventory were in locations not well served relative to the region's major transportation infrastructure networks / goods movement corridors nor have other key attributes desired by the market, whereas some of the lands removed had good accessibility. This reiterates the point that lands do not all have the same attributes, and quantitative as well as qualitative considerations are both important.

The conversion of industrial land reduces opportunities for industrial development and industrial business expansion, and the limited land supply and higher land prices may push some industrial activity to other jurisdictions, with transportation, economic, employment, and taxation implications for the region.

Few available large sites for 'trade-oriented' logistics uses

There are few vacant sites available for 'trade-oriented' logistics users, namely large sites with minimal constraints and close to major transportation infrastructure. Most of the 'best' sites have already been developed. More industrial development, particularly logistics related activities occurring at increasingly farther away locations relative to the port terminals due to lack of available closer lands, may create longer truck trips (drayage) and associated traffic congestion and environmental impacts.

More industrial land intensification is expected over time

Most of the developed lands are substantially used, with limited immediate opportunity for redevelopment and intensification. Nevertheless, as these lands redevelop there will be potential to densify and intensify. In some cases, abutting smaller properties can be consolidated and redeveloped in order to create larger sites for larger tenants.

The industrial land absorption rate declined due to limited raw land supply

The net land absorption (lands changing from 'Other / Vacant' to 'Developed' status) was 484 ha over the 2015-2020 period, or 97 ha per year on average. This rate was higher than the previous periods of 2005-2010 (average annual absorption rate of 93 ha) and 2010-2015 (76 ha). However, it is important to note that although recorded development / absorption activity is a reflection of industrial demand, it is in fact limited by the amount of land supply, so it is not a true reflection of total demand. If more lands were available, more lands would be developed.

Difficult to estimate lifespan of available vacant lands

Assumptions about the future absorption rate impact the calculation of the estimated lifespan of the existing supply of industrial lands. The amount of development will be impacted not just by demand but also increasingly by the limited supply of available vacant industrial lands that can be brought to market, as well as redevelopment and intensification activity. Using a theoretical absorption forecast model, the 'Other / Vacant' industrial land supply might be substantially absorbed in the 2030s. However, it is important to note that before full depletion, the remaining land supply would be small, scattered parcels that would not be viable for larger industrial development.

6.4 Further Study Topics

The 2020 Regional Industrial Lands Inventory can be considered and analyzed through different ‘lenses’ or ‘filters’ from different perspectives. Accordingly, building on the Inventory results, further study is possible, such as: industrial intensification, market readiness, regional land use assessment, industrial typologies, and other topics related to industrial lands, employment, economy, and transportation.

Intensification / Redevelopment Potential

Redevelopment and intensification are also an important way to extend the lifespan of the limited supply of industrial lands in the region. Further work can identify the lands with the greatest potential for redevelopment and intensification / densification. Specifically, this could consider and categorize the different factors that impact the potential of industrial lands to redevelop and intensify.

Market Readiness Timing

Not all ‘vacant’ lands can be readily developed in the short-term. Further work can categorize the different types of constraints / opportunities and considerations to estimate ‘market readiness’ or potential timing for the industrial development of lands.

This analysis could supplement reports that review in detail a sub-set of the Inventory in terms of site specific constraints and development potential. The methodology for the analysis consists of assessing and categorizing the development potential of ‘vacant’ industrial lands by select features.

Regional Land Use Assessment

A regional land use assessment would comprise preparing a regional ‘land budget’ model of current supply and anticipated demand by land use category, for all land uses not just industrial. The technical assessment, prepared in collaboration with member jurisdictions and other stakeholders, would look to identify the ‘best’ locations for uses / typologies based on land capacity and a set of criteria (current and future). The comprehensive regional land use assessment would further enhance the understanding of the lands in the region by attribute, use potential (current supply) and land needs criteria (long-term demand), so as to support regional growth planning. The assessment could result in identifying opportunities for more optimized locations and uses of land to support regional policy objectives, infrastructure investments, refine growth targets, and inform policy changes.

Industrial Land Typologies

Develop and define industrial land typologies and their associated characteristics to provide for a refined and nuanced understanding of the industrial lands in the region, as well as of the needs of industrial users by different sectors. By defining industrial land typologies and associated intensity measures, this work could support the development of a more accurate and realistic understanding of the industrial lands reflecting the different users of land, and how this relates to possible changes in land uses.

In some cases these typologies are somewhat linear, as in a continuum / spectrum, from 'lower intensity / density' to 'higher intensity / density', while for others there are more variables and simple singular measures do not tell the full story.

Industrial Employment

Industrial lands contain over one-quarter of the employment in the region. The form of industrial activity and associated employment types and densities are evolving with the changing economy. Some forms of industrial uses, such as modern warehouses, have efficient operations supported by automation and fewer employees, whereas other types of industry, such as manufacturing and assembly, have a much greater density of employees (per building floor space or per land area). These industry trends could be further studied to determine the implications on industrial land demand and uses.

Other Potential Topics

Other areas for potential further study include:

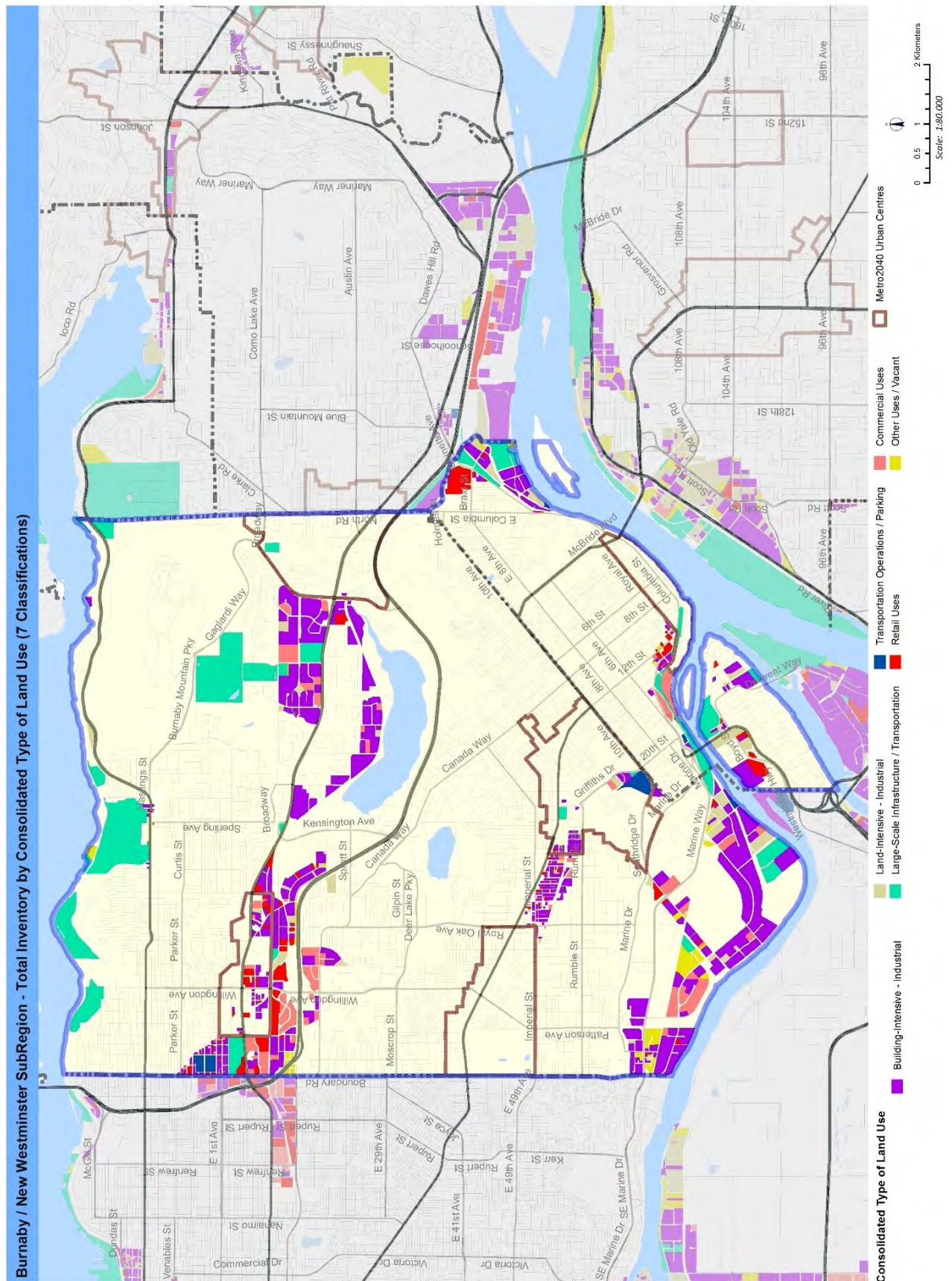
- Industrial land demand scenarios and absorption forecasts
- Quantify economic impact of industrial land development and use activities
- Industrial economic and employment activities lost to other jurisdictions
- Goods movement / logistics transportation infrastructure supporting industry
- Growth of e-commerce impacts on industrial lands
- Comprehensive study on origins and destinations to find potential efficiencies in the system
- Document employment on industrial lands to provide a better understanding of trip generation
- Industrial parking supply and demand
- Industrial lands governance experiences in other jurisdictions
- Innovative building design examples / best practices

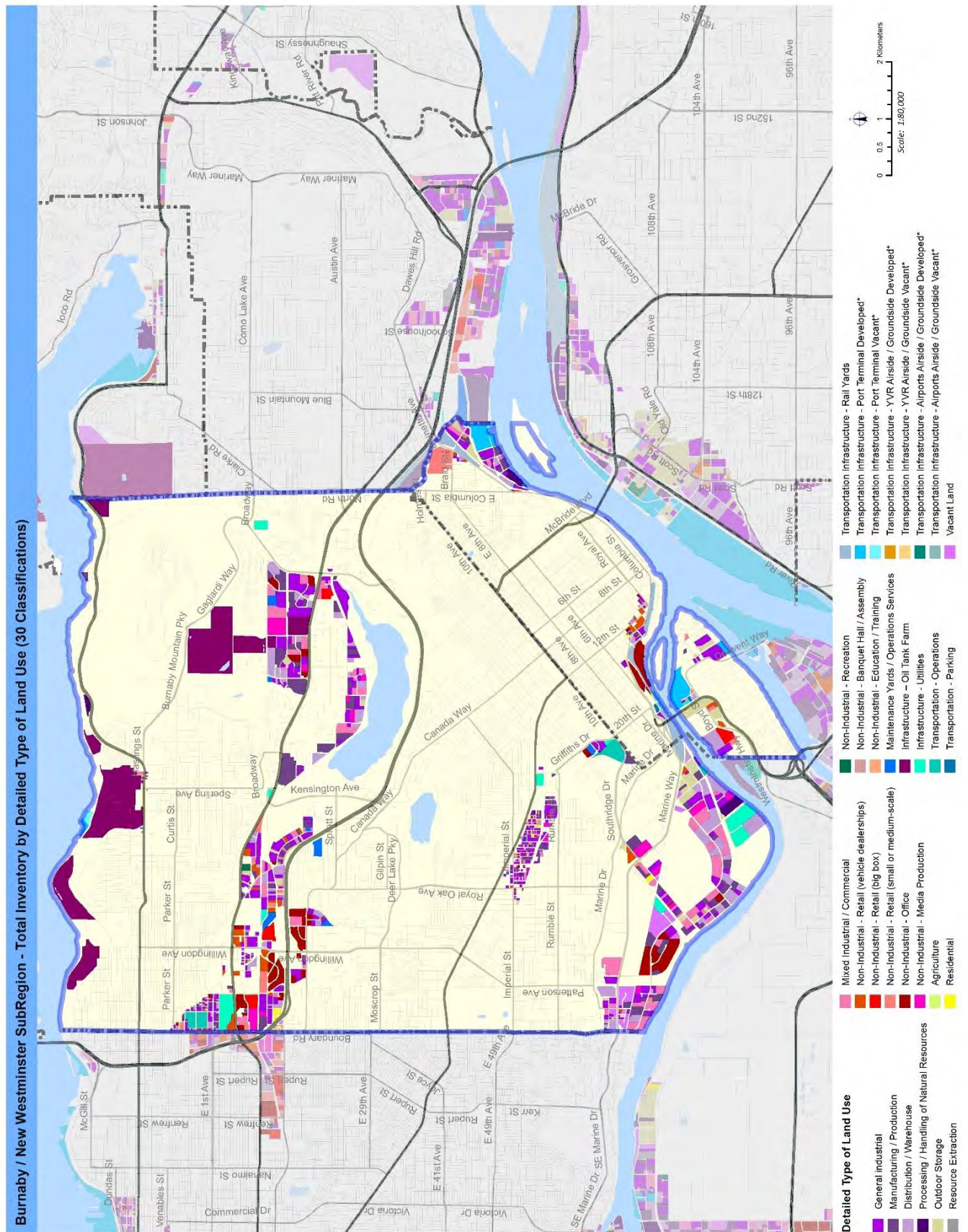
6.5 Closing

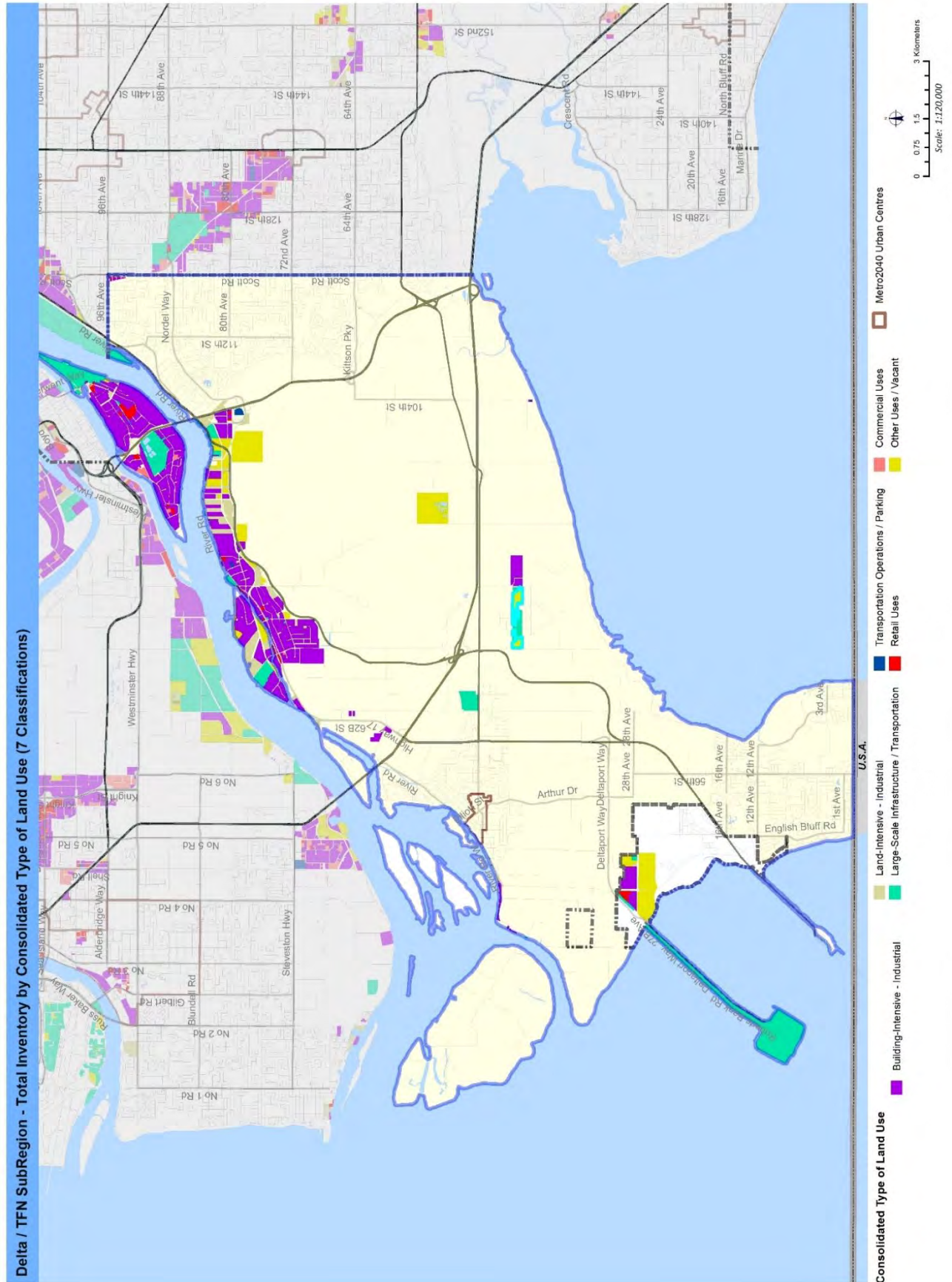
Metro Vancouver is a high growth region and the documentation and protection of industrial land is one of many important regional objectives. Undertaking the 2020 Regional Industrial Lands Inventory entailed working with member municipalities, agencies, and industry to create an updated and detailed inventory of industrial and associated lands in the region. The Inventory results can assist in advancing the implementing of the regional growth strategy and the Regional Industrial Lands Strategy, support municipalities in their efforts to protect and intensify industrial lands, and provide public agencies and the development community with additional information about available industrial lands and opportunities. The Inventory will be updated periodically and the results will be used as the basis for further analysis, information sharing, and engagement.

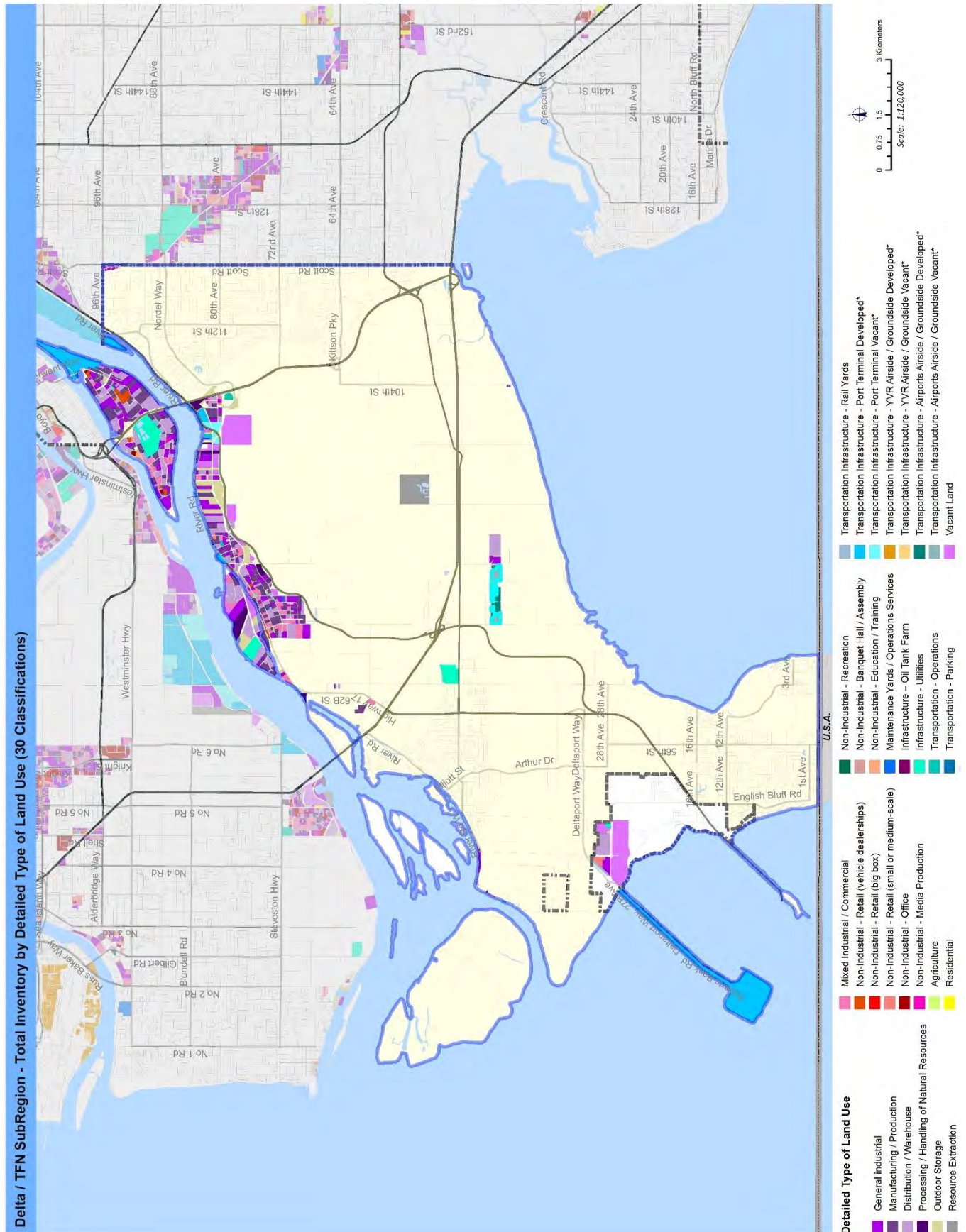
Appendix 1: Sub-Regional Inventory Maps

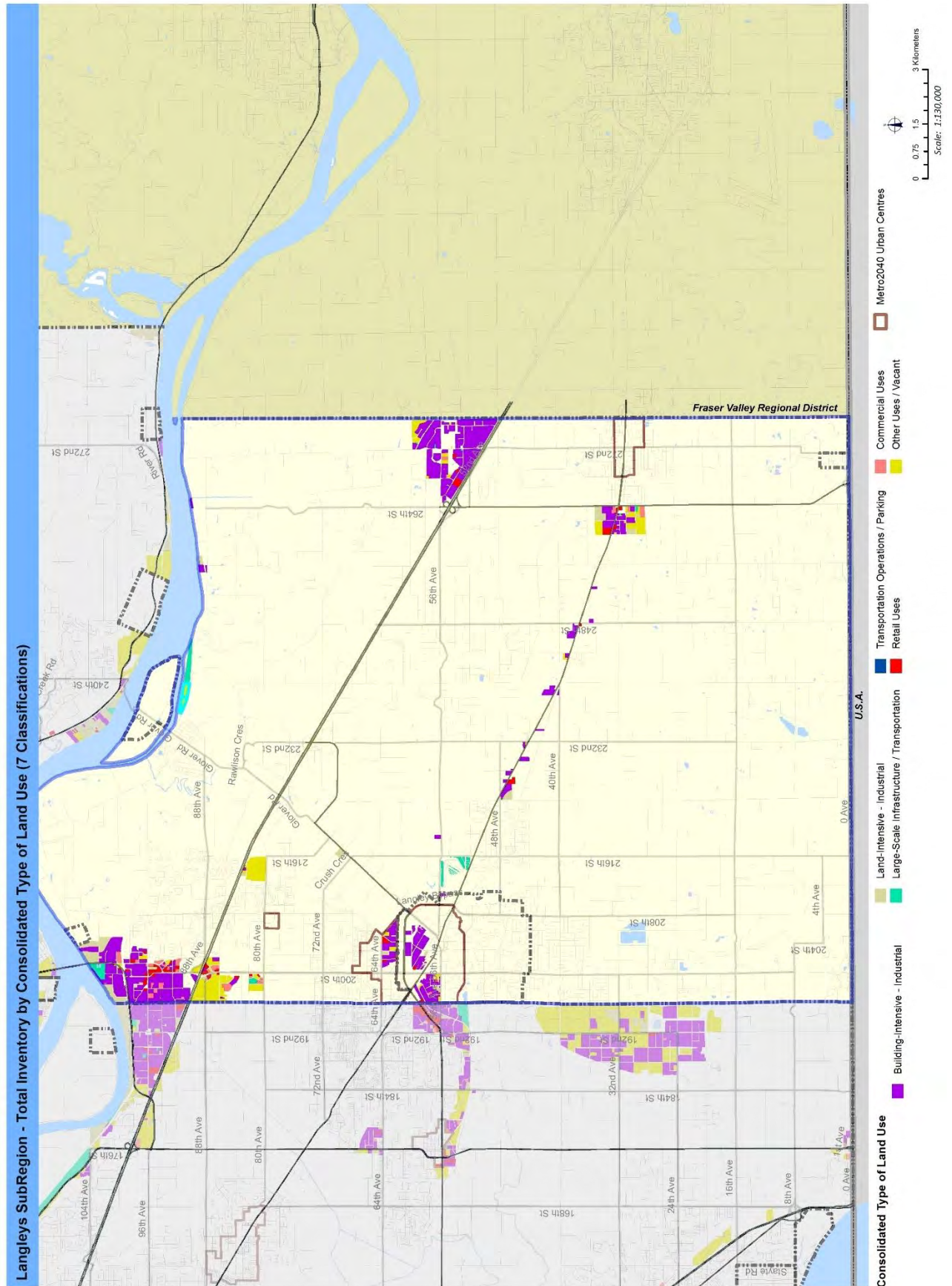
- Burnaby / New Westminster
- Delta / Tsawwassen First Nation
- Langleys (City of Langley, Township of Langley)
- North-East Sector (City of Port Moody, City of Coquitlam, City of Port Coquitlam)
- North Shore (City of North Vancouver, District of North Vancouver)
- Richmond (including YVR / Sea Island)
- Ridge / Meadows (City of Maple Ridge, City of Pitt Meadows)
- Surrey / White Rock
- Vancouver

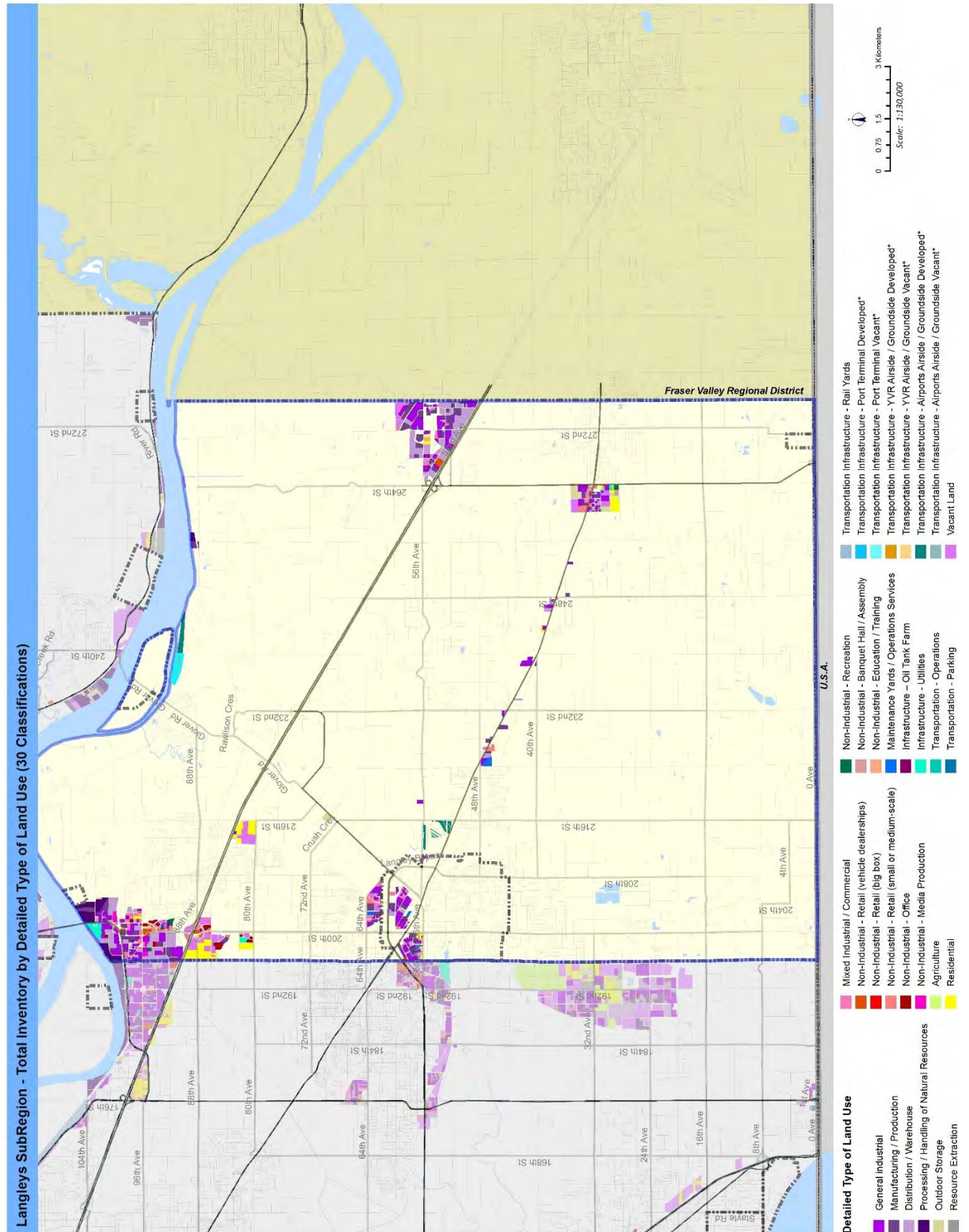


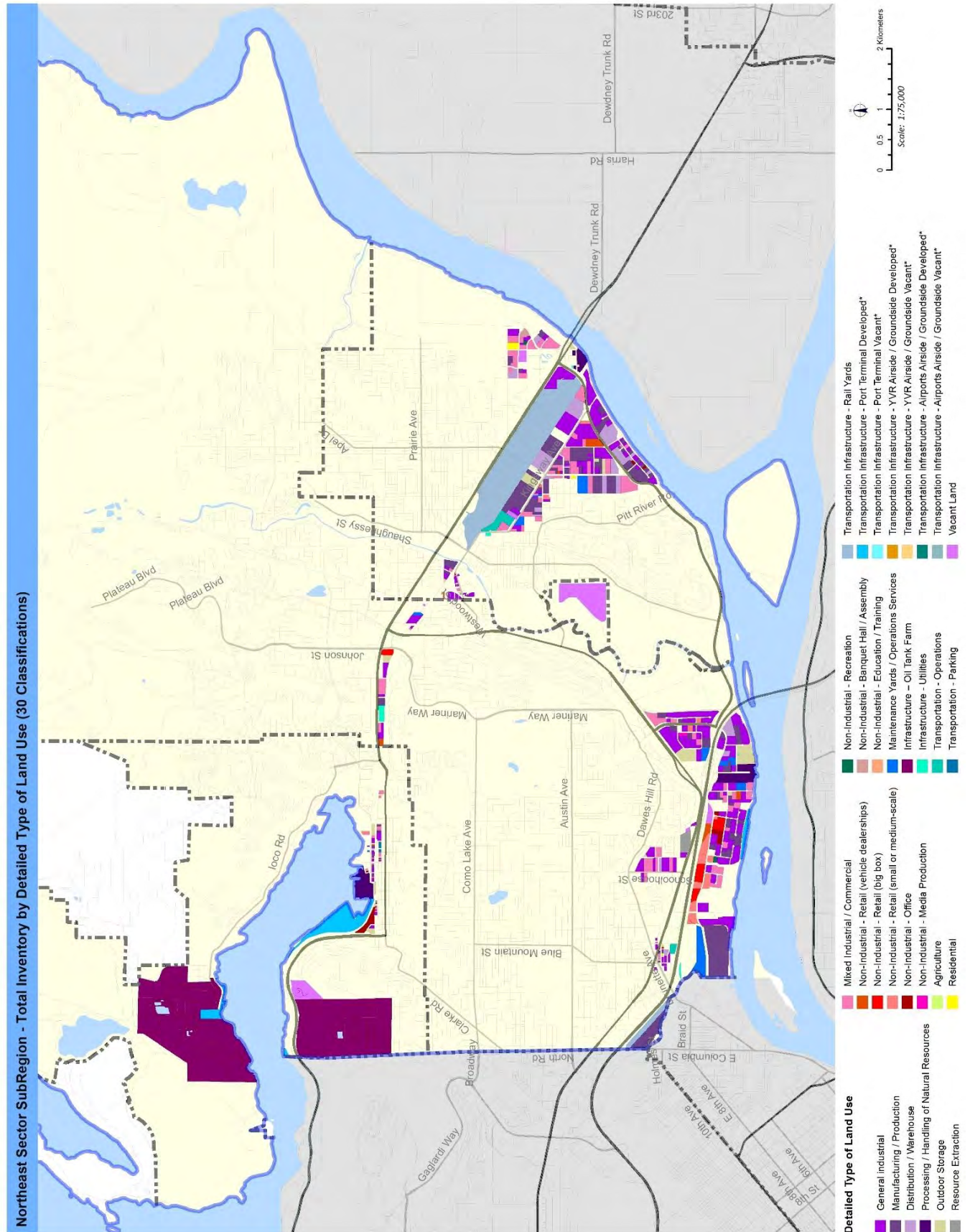


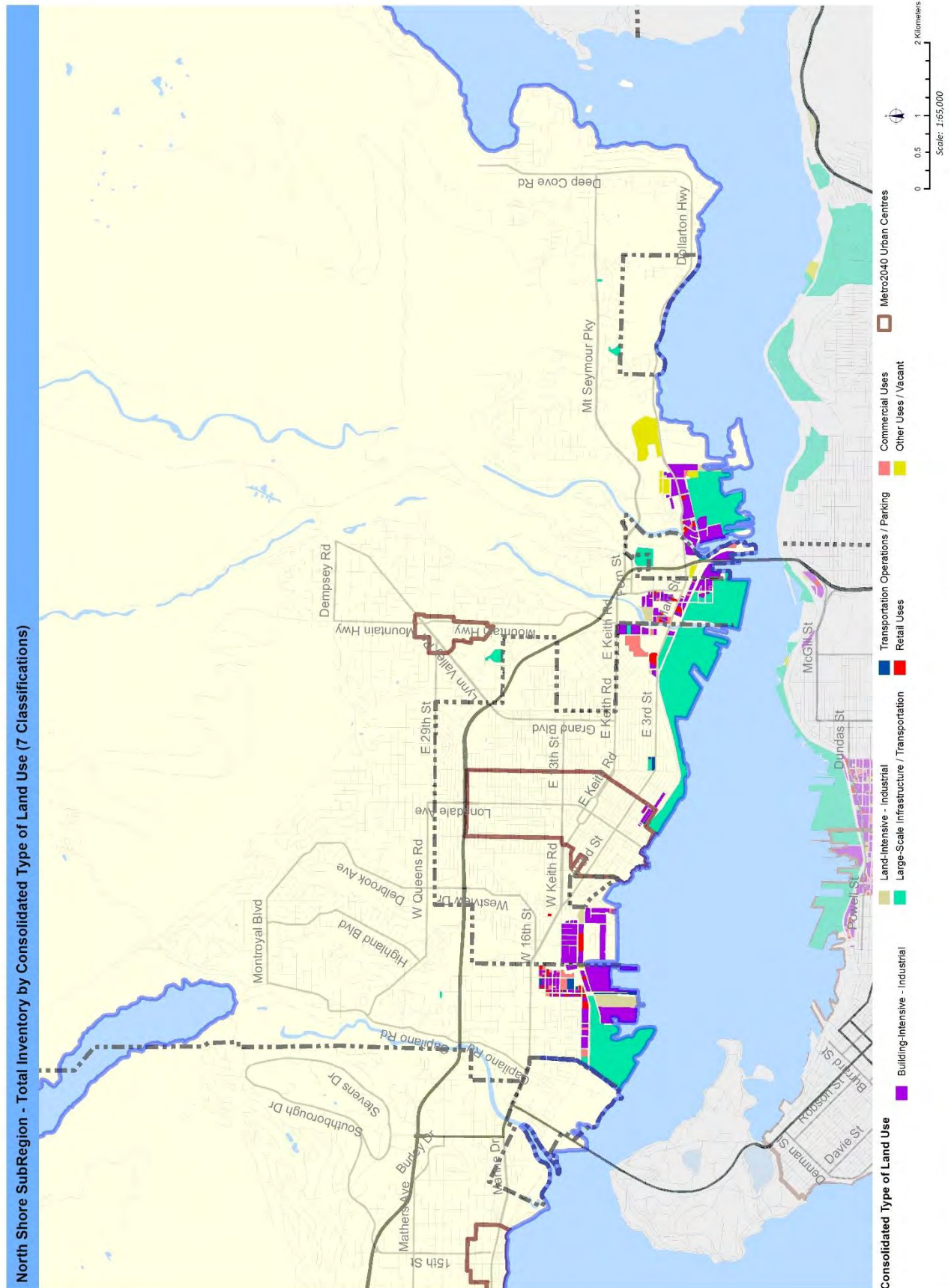


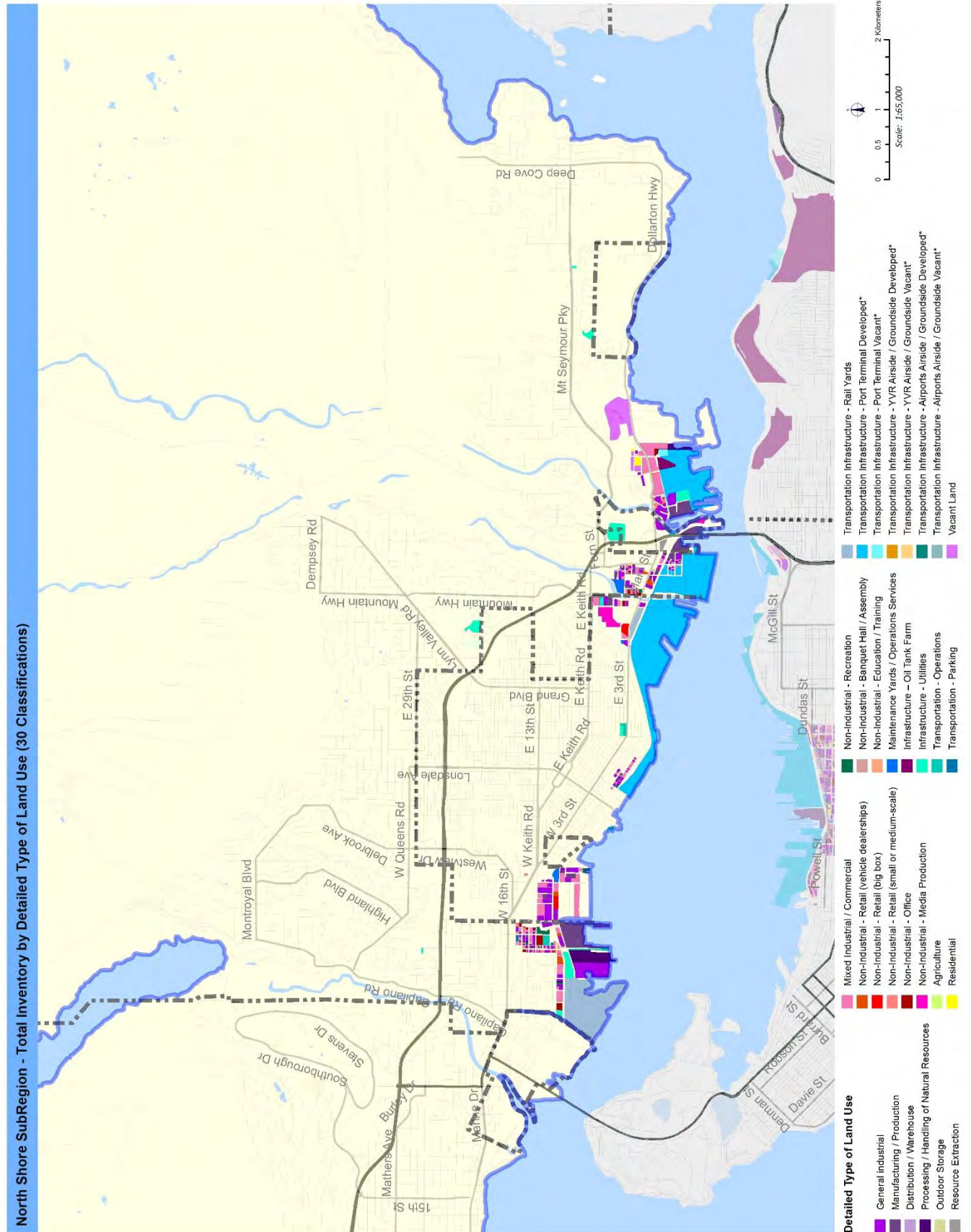


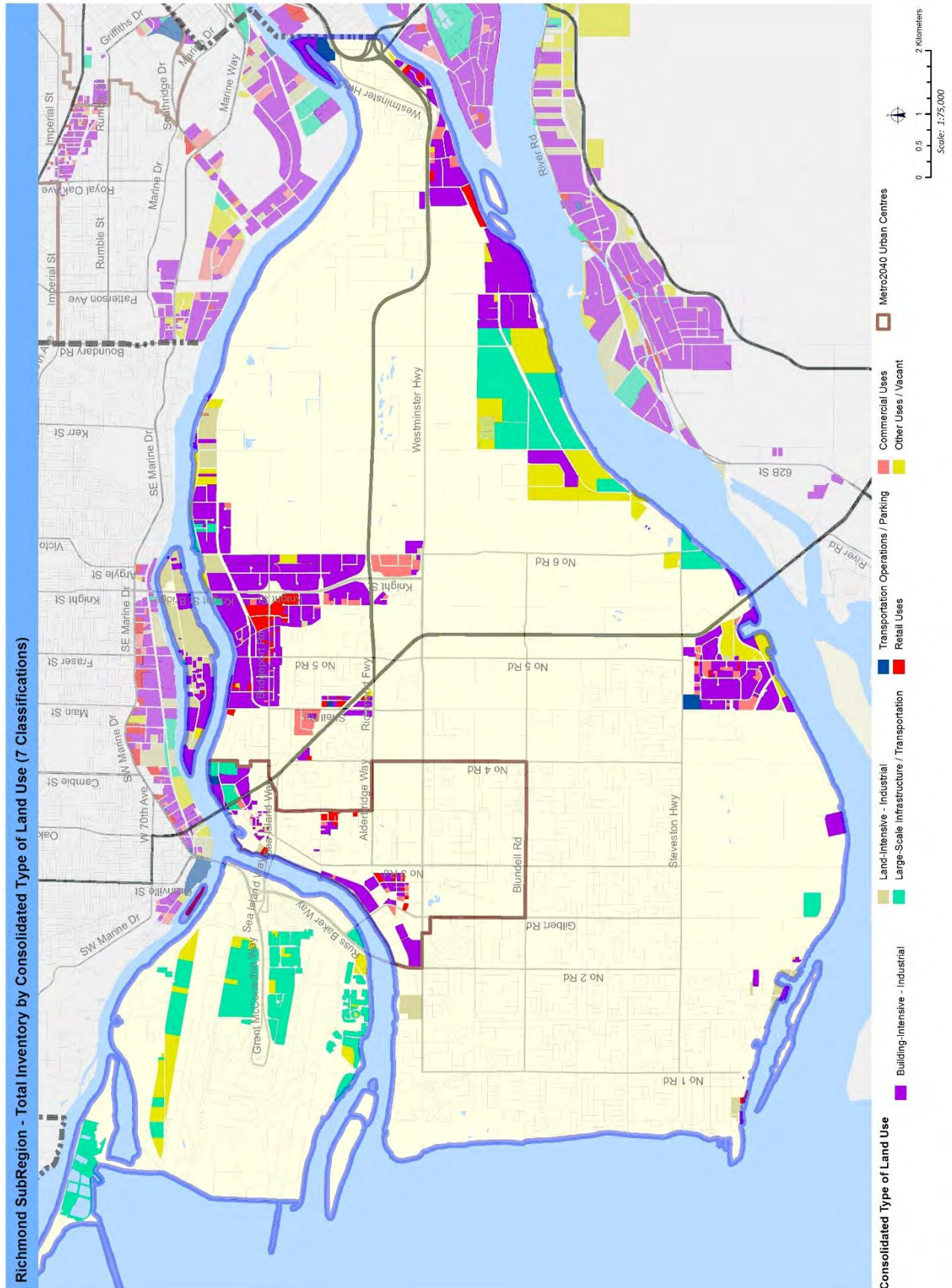


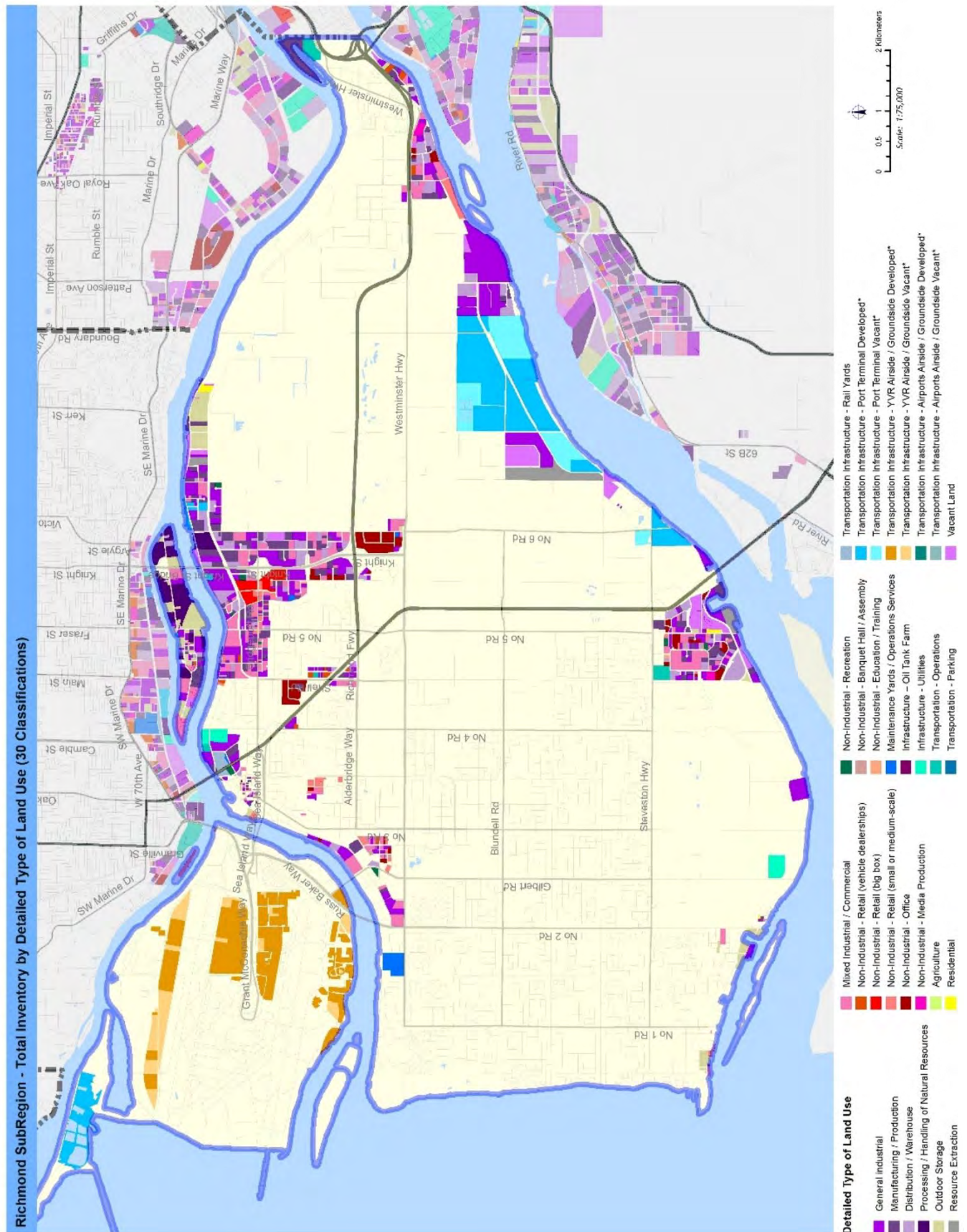


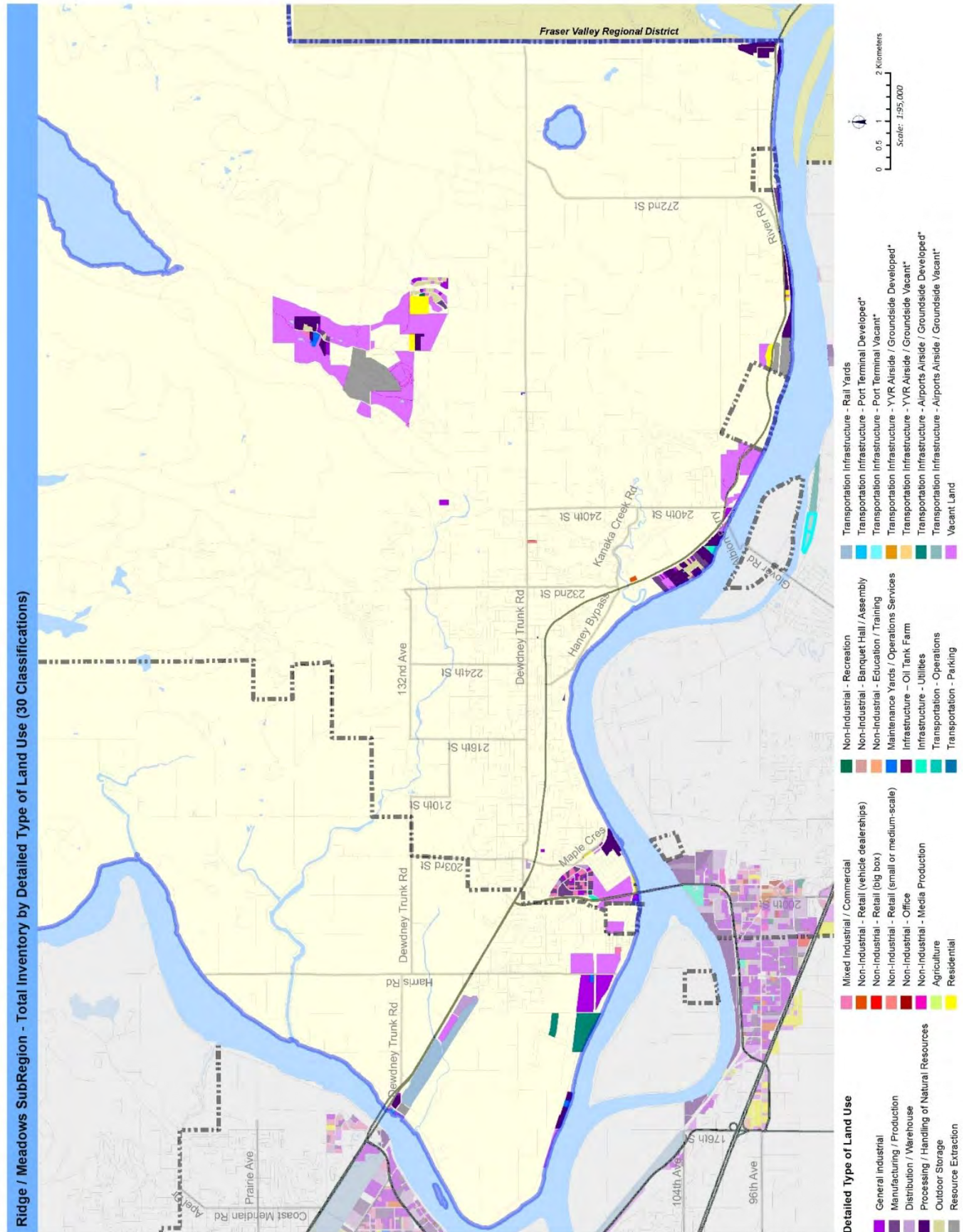


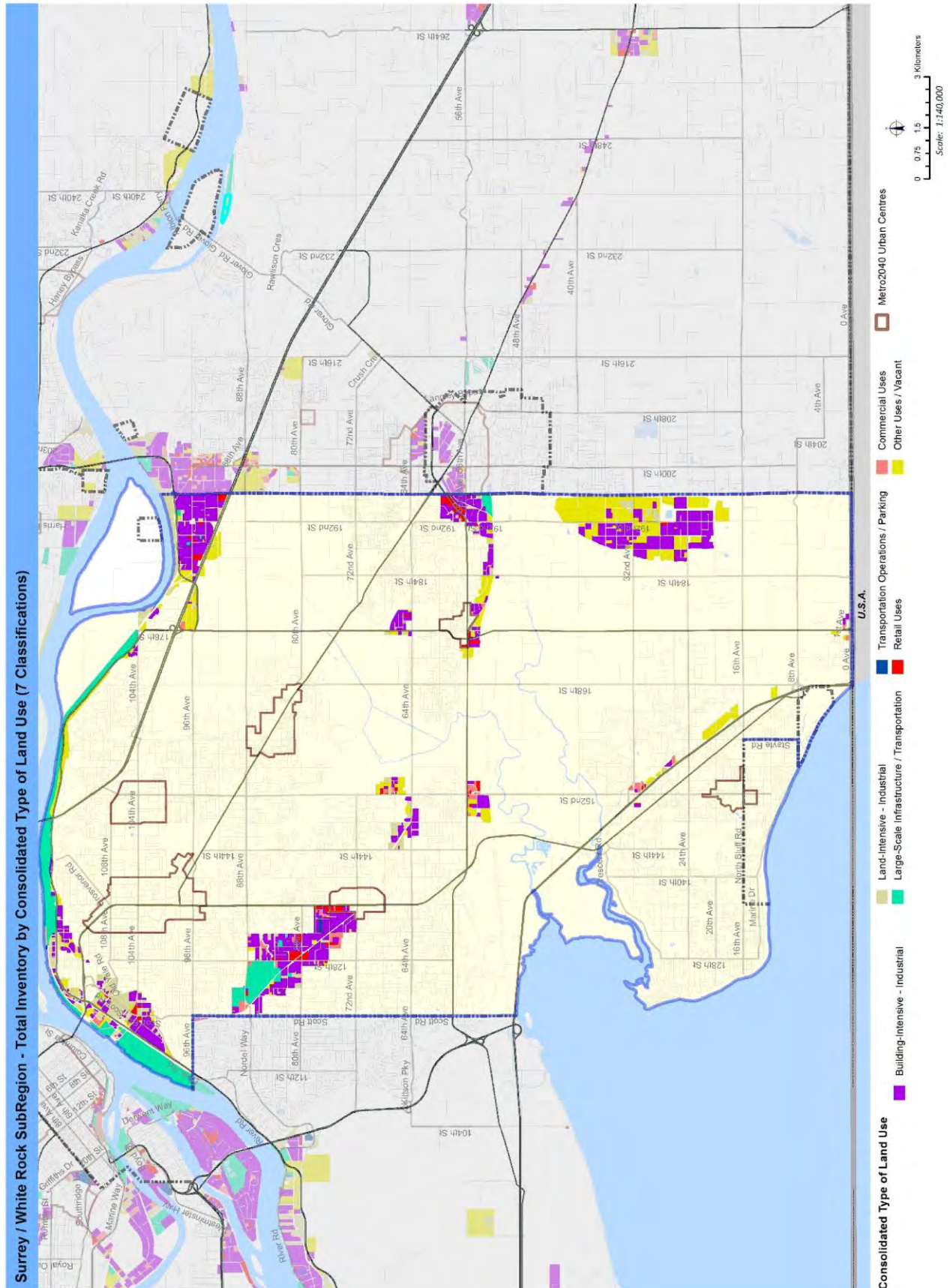


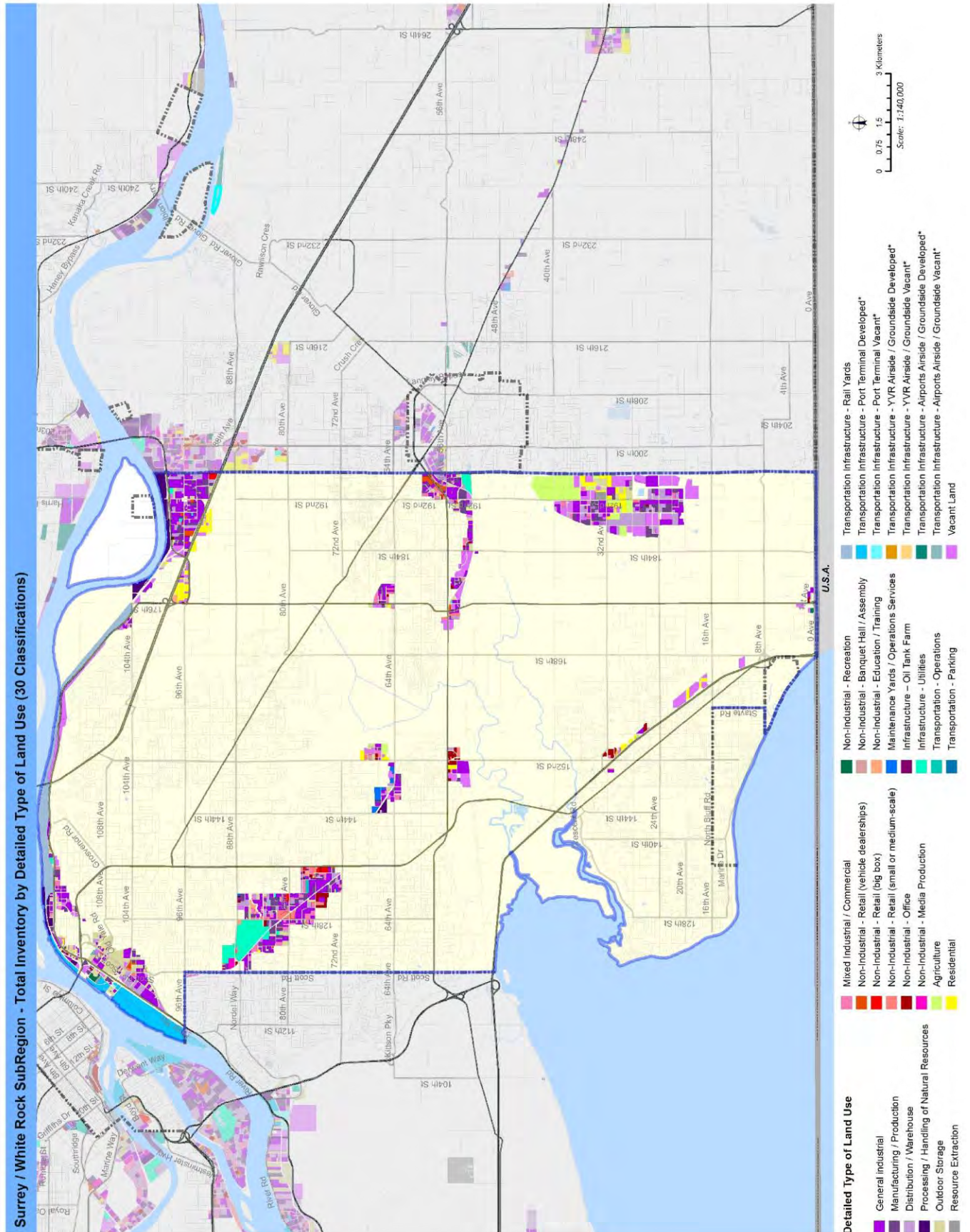


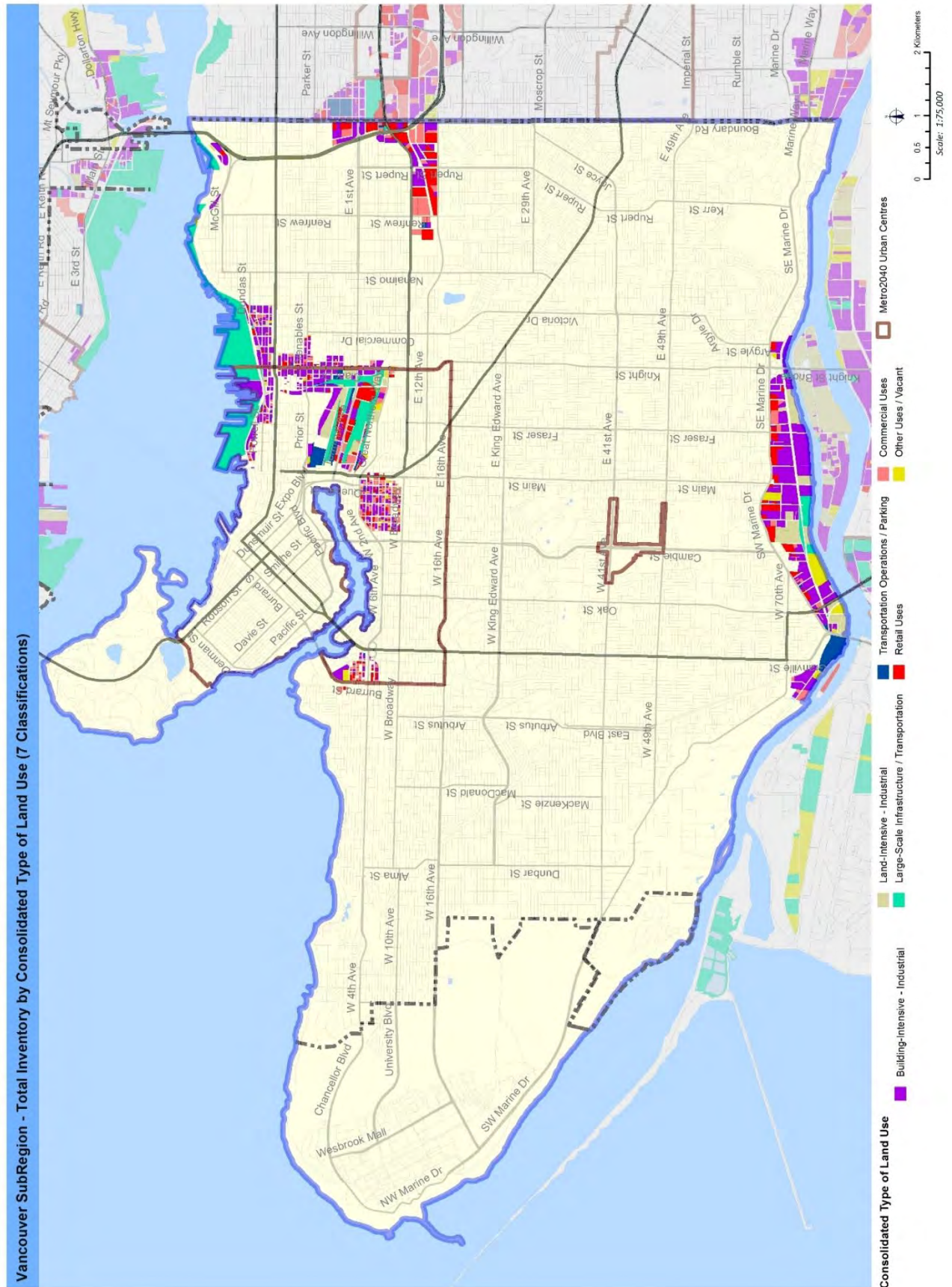


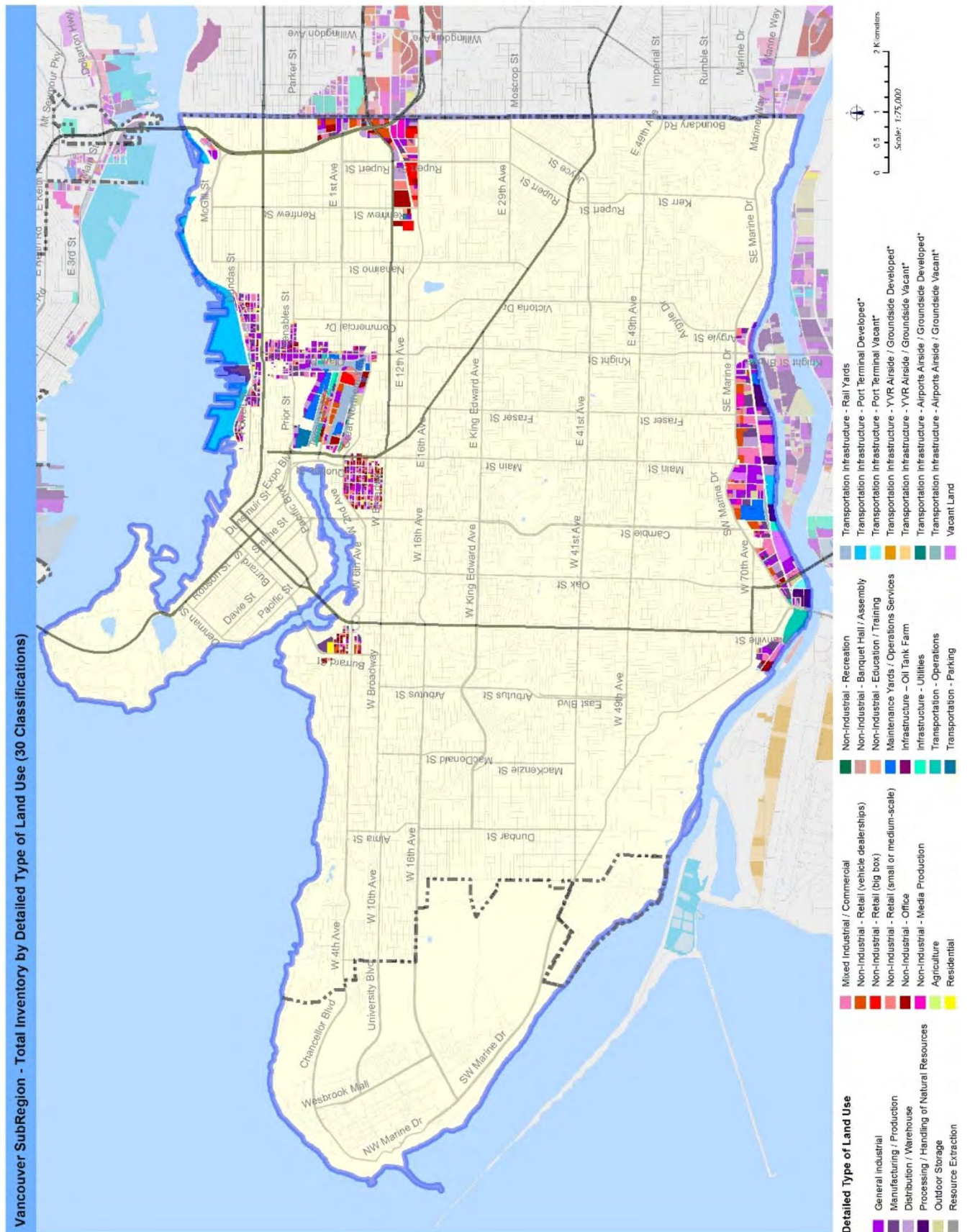












Appendix 2: Inventory Tables – Consolidated Land Use Classification

Table A2.1: Consolidated Land Use Classification by Sub-Region

	Burnaby / New West	Delta/TFN	Langley	North Shore	Northeast Sector	Richmond	Ridge / Meadows	Surrey / White Rock	Vancouver	Total
Building - Industrial	597	783	605	110	445	707	124	1,029	239	4,639
Land - Industrial	78	120	85	16	82	136	138	264	55	975
Large-Scale Infrs / Transp	380	397	44	244	565	490	101	462	155	2,839
Transp Opts / Parking	23	5		5	9	17		5	26	90
Retail	89	29	46	10	39	53	3	84	85	439
Commercial	133	8	40	14	12	68	1	74	57	406
Other / Vacant	42	313	176	21	56	271	593	616	27	2,115
Total	1,342	1,655	996	420	1,209	1,741	960	2,534	644	11,502

Table A2.2: Consolidated Land Use Classification by Regional Designation

		General						
RGS Designation	Con Rec	Rural	Agricultural	Urban	Mixed Emp	Industrial	Total	
Building - Industrial	3	7	9	307	1,278	3,035	4,639	
Land - Industrial	1	11		109	152	701	975	
Large-Scale Infrs / Transp	114		10	211	53	2,451	2,839	
Transp Opts / Parking	1		0	18	11	61	90	
Retail	0			74	222	142	439	
Commercial		1		38	256	112	406	
Other / Vacant		183	31	125	597	1,179	2,115	
Total	119	202	50	880	2,569	7,681	11,502	

Table A2.3: Consolidated Land Use Classification by Land Ownership Type

	Private	Private - Railway	Crown Corporatio	Public - Federal	Public - Provincial	Public - Muni/Reg	First Nations	Total
Building - Industrial	4,443	17	29	49	8	93		4,639
Land - Industrial	808	2	13	20	20	110		975
Large-Scale Infrs / Transp	729	462	198	1,270	2	178		2,839
Transp Opts / Parking	20				12	58		90
Retail	425			6	0	8		439
Commercial	383		7	3	2	12		406
Other / Vacant	1,312	16	22	237	115	374	40	2,115
Total	8,121	498	269	1,584	159	832	40	11,502

Appendix 3: Inventory Tables – Detailed Land Use Classification

Table A3.1: Detailed Land Use Classification

	Land HA	Land AC	% of Total Lands
Building-Intensive - Industrial	4,639	11,463	40%
General Industrial	1,914	4,729	17%
Mixed Industrial / Commercial	643	1,589	6%
Manufacturing / Production	1,060	2,620	9%
Distribution / Warehouse	1,022	2,524	9%
Land-Intensive - Industrial	975	2,408	8%
Processing / Handling of Natural Resources	387	956	3%
Outdoor Storage	461	1,138	4%
Maintenance Yards / Operations Services	127	314	1%
Large-Scale Infrac / Transp	2,839	7,015	25%
Infrastructure - Utilities	332	819	3%
Infrastructure - Oil Tank Farm	631	1,560	5%
Transp Infrac - Rail Yards	530	1,309	5%
Transp Infrac - YVR Airside / Groundside Developed	200	494	2%
Transp Infrac - Airports Developed (excluding YVR)	76	188	1%
Transp Infrac - Port Terminal Developed	1,070	2,645	9%
Transp Infrac - Operations / Parking	90	222	1%
Transportation - Operations	78	192	1%
Transportation - Parking	12	30	0%
Retail Uses	439	1,084	4%
Non-Industrial - Retail (big box)	80	198	1%
Non-Industrial - Retail (small or medium-scale)	217	536	2%
Non-Industrial - Retail (vehicle dealerships)	141	349	1%
Commercial Uses	406	1,003	4%
Non-Industrial - Office	258	637	2%
Non-Industrial - Media Production	82	203	1%
Non-Industrial - Banquet Hall / Assembly	20	51	0%
Non-Industrial - Education / Training	19	46	0%
Non-Industrial - Recreation	27	67	0%
Other Uses / Vacant	2,115	5,226	18%
Agriculture	139	344	1%
Residential	223	551	2%
Resource Extraction	232	574	2%
Transp Infrac - Airports Vacant (excluding YVR)	31	78	0%
Transp Infrac - YVR Airside / Groundside Vacant	62	154	1%
Transp Infrac - Port Terminal Vacant	118	291	1%
Vacant Land	1,309	3,235	11%
Total	11,502	28,421	100%

Table A3.2: Number of Sites and Average Site Size by Detailed Land Use Classification

	Number of Sites	Land HA	Avg Site Size HA	Land AC	Avg Site Size AC
Building-Intensive - Industrial	5,122	4,639	0.9	11,463	2.2
General Industrial	2,547	1,914	0.8	4,729	1.9
Mixed Industrial / Commercial	730	643	0.9	1,589	2.2
Manufacturing / Production	1,153	1,060	0.9	2,620	2.3
Distribution / Warehouse	692	1,022	1.5	2,525	3.6
Land-Intensive - Industrial	648	975	1.5	2,408	3.7
Processing / Handling of Natural Resources	95	387	4.1	956	10.1
Outdoor Storage	482	461	1.0	1,138	2.4
Maintenance Yards / Operations Services	71	127	1.8	314	4.4
Large-Scale Infrs / Transp	429	2,839	6.6	7,015	16.4
Infrastructure - Utilities	90	332	3.7	819	9.1
Infrastructure - Oil Tank Farm	12	631	52.6	1,560	130.0
Transp Infrs - Rail Yards	37	530	14.3	1,310	35.4
Transp Infrs - YVR Airside / Groundside Developed	86	200	2.3	494	5.7
Transp Infrs - Airports Developed (excluding YVR)	63	76	1.2	188	3.0
Transp Infrs - Port Terminal Developed	141	1,070	7.6	2,645	18.8
Transp Infrs - Operations / Parking	63	90	1.4	222	3.5
Transportation - Operations	35	78	2.2	192	5.5
Transportation - Parking	28	12	0.4	30	1.1
Retail Uses	629	439	0.7	1,084	1.7
Non-Industrial - Retail (big box)	28	80	2.9	198	7.1
Non-Industrial - Retail (small or medium-scale)	412	217	0.5	536	1.3
Non-Industrial - Retail (vehicle dealerships)	189	141	0.7	349	1.8
Commercial Uses	583	406	0.7	1,003	1.7
Non-Industrial - Office	373	258	0.7	637	1.7
Non-Industrial - Media Production	110	82	0.7	203	1.8
Non-Industrial - Banquet Hall / Assembly	44	20	0.5	51	1.1
Non-Industrial - Education / Training	24	19	0.8	46	1.9
Non-Industrial - Recreation	32	27	0.9	67	2.1
Other Uses / Vacant	1,095	2,115	1.9	5,226	4.8
Agriculture	24	139	5.8	344	14.3
Residential	493	223	0.5	551	1.1
Resource Extraction	19	232	12.2	574	30.2
Transp Infrs - Airports Vacant (excluding YVR)	21	62	3.0	154	7.3
Transp Infrs - YVR Airside / Groundside Vacant	8	31	3.9	78	9.7
Transp Infrs - Port Terminal Vacant	27	118	4.4	291	10.8
Vacant Land	503	1,309	2.6	3,235	6.4
Total	8,569	11,502	1.3	28,422	3.3

Table A3.3: Detailed Land Use Classification by Sub-Region

	Burnaby / New West	Delta/TFN	Langley	North Shore	Northeast Sector	Richmond	Ridge / Meadows	Surrey / White Rock	Vancouver	Total
Building-Intensive - Industrial	597	783	605	110	445	707	124	1,029	239	4,639
General Industrial	223	211	226	43	181	309	60	559	100	1,914
Mixed Industrial / Commercial	112	73	40	33	81	151	14	88	52	643
Manufacturing / Production	130	212	136	33	138	139	34	188	51	1,060
Distribution / Warehouse	131	288	203	1	45	109	15	194	36	1,022
Land-Intensive - Industrial	78	120	85	16	82	136	138	264	55	975
Processing / Handling of Natural Resources	14	36	46	12	30	50	109	73	17	387
Outdoor Storage	48	81	28	1	26	72	22	174	8	461
Maintenance Yards / Operations Services	16	3	11	4	26	14	6	17	30	127
Large-Scale Infrastructure / Transportation	380	397	44	244	565	490	101	462	155	2,839
Infrastructure - Utilities	48	95	18	20	4	19	4	119	5	332
Infrastructure - Oil Tank Farm	260			3	369					631
Transp Infras - Rail Yards	34	6		56	150	7	61	181	36	530
Transp Infras - YVR Airside / Groundside Developed						200				200
Transp Infras - Airports Developed (excluding YVR)		14	26				36			76
Transp Infras - Port Terminal Developed	39	282		166	43	264		162	115	1,070
Transp Infra - Operations / Parking	23	5		5	9	17		5	26	90
Transportation - Operations	21	5		4	9	17		4	18	78
Transportation - Parking	2			1	1			1	8	12
Retail	89	29	46	10	39	53	3	84	85	439
Non-Industrial - Retail (big box)	19			3	12	18		14	15	80
Non-Industrial - Retail (small or medium-scale)	36	12	35	4	19	26	2	45	37	217
Non-Industrial - Retail (vehicle dealerships)	34	17	12	2	8	9	1	25	33	141
Commercial	133	8	40	14	12	68	1	74	57	406
Non-Industrial - Office	90	3	17	4	8	53		45	36	258
Non-Industrial - Media Production	40	1	8	7	1	5		6	15	82
Non-Industrial - Banquet Hall / Assembly	1		6	0	2	2		6	3	20
Non-Industrial - Education / Training	0	3	2	0	0	1		10	3	19
Non-Industrial - Recreation	2	0	7	2	1	6	1	7	1	27
Other / Vacant	42	313	176	21	56	271	593	616	27	2,115
Agriculture	0		4					135		139
Residential	5	1	74	1	2	4	27	102	6	223
Resource Extraction		66		1	5	41	106	13		232
Transp Infras - YVR Airside / Groundside Vacant						62				62
Transp Infras - Airports Vacant (excluding YVR)		21	10							31
Transp Infras - Port Terminal Vacant	4	12		1		97		1	3	118
Vacant Land	33	212	88	18	48	66	460	365	18	1,309
Total	1,342	1,655	996	420	1,209	1,741	960	2,534	644	11,502

Table A3.4: Detailed Land Use Classification by Regional Designation

	Con Rec	Rural	Agricultural	General Urban	Mixed Emp	Industrial	Total
Building-Intensive - Industrial	3	7	9	307	1,278	3,035	4,639
General Industrial	1	5	2	147	488	1,271	1,914
Mixed Industrial / Commercial	1			62	247	333	643
Manufacturing / Production	1	2	6	63	276	714	1,060
Distribution / Warehouse		1	1	34	267	718	1,022
Land-Intensive - Industrial	1	11		109	152	701	975
Processing / Handling of Natural Resources	1			26	13	347	387
Outdoor Storage		11		56	113	281	461
Maintenance Yards / Operations Services	0			28	26	73	127
Large-Scale Infrs / Transp	114		10	211	53	2,451	2,839
Infrastructure - Utilities			10	53	10	259	332
Infrastructure - Oil Tank Farm				84	15	533	631
Transp Infrs - Rail Yards				25	5	499	530
Transp Infrs - YVR Airside / Groundside Developed	2					198	200
Transp Infrs - Airports Developed (excluding YVR)				36	14	26	76
Transp Infrs - Port Terminal Developed	112			13	9	936	1,070
Transp Infrs - Operations / Parking	1		0	18	11	61	90
Transportation - Operations			0	16	4	58	78
Transportation - Parking	1			1	7	3	12
Retail Uses	0			74	222	142	439
Non-Industrial - Retail (big box)				5	67	8	80
Non-Industrial - Retail (small or medium-scale)	0			44	110	62	217
Non-Industrial - Retail (vehicle dealerships)				24	45	72	141
Commercial Uses		1		38	256	112	406
Non-Industrial - Office				13	195	50	258
Non-Industrial - Media Production				10	42	31	82
Non-Industrial - Banquet Hall / Assembly				2	7	12	20
Non-Industrial - Education / Training				3	3	12	19
Non-Industrial - Recreation		1		11	10	6	27
Other Uses / Vacant		183	31	125	597	1,179	2,115
Agriculture					133	6	139
Residential		19		42	115	47	223
Resource Extraction		9		5	18	200	232
Transp Infrs - Airports Vacant (excluding YVR)					21	10	31
Transp Infrs - YVR Airside / Groundside Vacant						62	62
Transp Infrs - Port Terminal Vacant				8		109	118
Vacant Land		154	31	69	310	744	1,309
Total	119	202	50	880	2,569	7,681	11,502

Table A3.5: Detailed Land Use Classification by Land Ownership Type

	Private	Railway	Crown Corp	Public - Federal	Public - Provincial	Public - Muni/Reg	First Nations	Total
Building-Intensive - Industrial	4,443	17	29	49	8	93		4,639
General Industrial	1,834	1	17	17	3	41		1,914
Mixed Industrial / Commercial	633		1	1	0	7		643
Manufacturing / Production	1,008	1	11	25	1	16		1,060
Distribution / Warehouse	968	15	0	6	4	28		1,022
Land-Intensive - Industrial	808	2	13	20	20	110		975
Processing / Handling of Natural Resources	382					5		387
Outdoor Storage	410	2	8	20	11	9		461
Maintenance Yards / Operations Services	17		5		9	96		127
Large-Scale Infrs / Transp	729	462	198	1,270	2	178		2,839
Infrastructure - Utilities	20		198		1	112		332
Infrastructure - Oil Tank Farm	631							631
Transp Infrs - Rail Yards	56	462			1	11		530
Transp Infrs - YVR Airside / Groundside Developed				200				200
Transp Infrs - Airports Developed (excluding YVR)	21					55		76
Transp Infrs - Port Terminal Developed				1,070				1,070
Transp Infrs - Operations / Parking	20				12	58		90
Transportation - Operations	11				10	56		78
Transportation - Parking	9				1	2		12
Retail Uses	425			6	0	8		439
Non-Industrial - Retail (big box)	80							80
Non-Industrial - Retail (small or medium-scale)	204			6	0	7		217
Non-Industrial - Retail (vehicle dealerships)	141					0		141
Commercial Uses	383		7	3	2	12		406
Non-Industrial - Office	242		6	3	0	7		258
Non-Industrial - Media Production	81		1			1		82
Non-Industrial - Banquet Hall / Assembly	20					1		20
Non-Industrial - Education / Training	17				2			19
Non-Industrial - Recreation	24					3		27
Other Uses / Vacant	1,312	16	22	237	115	374	40	2,115
Agriculture	86			53				139
Residential	206				1	16		223
Resource Extraction	219	4	8		1			232
Transp Infrs - Airports Vacant (excluding YVR)				62				62
Transp Infrs - YVR Airside / Groundside Vacant	10					21		31
Transp Infrs - Port Terminal Vacant				118				118
Vacant Land	791	12	14	3	113	337	40	1,309
Total	8,121	498	269	1,584	159	832	40	11,502

Appendix 4: Inventory Tables – Sub-Regional Distribution

Table A4.1: Sub-Regional Distribution by Consolidated Land Use Classification

	Building - Industrial	Land - Industrial	Large-Scale Infras / Transp	Transport Opts / Parking	Retail	Commercial	Other / Vacant	Total
Burnaby / New West	597	78	380	23	89	133	42	1,342
Delta/TFN	783	120	397	5	29	8	313	1,655
Langley	605	85	44		46	40	176	996
North Shore	110	16	244	5	10	14	21	420
Northeast Sector	445	82	565	9	39	12	56	1,209
Richmond	707	136	490	17	53	68	271	1,741
Ridge / Meadows	124	138	101		3	1	593	960
Surrey / White Rock	1,029	264	462	5	84	74	616	2,534
Vancouver	239	55	155	26	85	57	27	644
Total	4,639	975	2,839	90	439	406	2,115	11,502

Table A4.2: Sub-Regional Distribution by Regional Designation

	Con Rec	Rural	Agricultural	General Urban	Mixed Emp	Industrial	Total
Burnaby / New West	3			253	480	607	1,342
Delta/TFN	54		7	35	59	1,499	1,655
Langley		1		51	215	729	996
North Shore				104	40	276	420
Northeast Sector	2		30	76	232	869	1,209
Richmond	60		12	147	425	1,097	1,741
Ridge / Meadows		201	0	76		683	960
Surrey / White Rock			1	127	981	1,425	2,534
Vancouver				11	136	497	644
Total	119	202	50	880	2,569	7,681	11,502

Table A4.3: Sub-Regional Distribution by Land Ownership Type

Sub Area	Private	Railway	Crown Corp	Public - Federal	Public - Provincial	Public - Muni/Reg	First Nations	Total
Burnaby / New West	1,141	36	44	43	14	65		1,342
Delta/TFN	1,032	10	42	315	19	237		1,655
Langley	953		8		2	33		996
North Shore	203	3	10	183	1	20		420
Northeast Sector	931	157	7	51	9	24	30	1,209
Richmond	980		32	648	4	77		1,741
Ridge / Meadows	692	73	4		33	149	9	960
Surrey / White Rock	1,781	184	119	223	71	156		2,534
Vancouver	408	34	4	122	6	71		644
Total	8,121	498	269	1,584	159	832	40	11,502

Appendix 5: Inventory Tables – Municipal Geographies

Table A5.1: Consolidated Land Use Classification by Municipality

Sub-Region / Municipality	Building - Industrial	Land - Industrial	Large-Scale Infras / Transp	Transport Opts / Parking	Retail	Commercial	Other / Vacant	Total
Burnaby/New West	597	78	380	23	89	133	42	1,342
Burnaby	538	54	316	22	58	118	39	1,144
New West	59	24	65	1	31	15	3	198
Delta/TFN	783	120	397	5	29	8	313	1,655
Delta	753	119	391	5	23	8	228	1,527
TFN	31	1	6		6		84	128
Langley	605	85	44		46	40	176	996
Langley City	72	5			3	1	3	85
Langley Twp	533	80	44		44	39	172	912
North Shore	110	16	244	5	10	14	21	420
North Van City	30	2	93	1	3	7		136
North Van Dist	80	15	151	3	6	8	21	284
Northeast Sector	445	82	565	9	39	12	56	1,209
Coquitlam	213	49	16	2	33	5	8	326
Port Coquitlam	225	19	143	7	6	3	36	439
Port Moody	7	14	406	1	1	4	11	444
Richmond	707	136	490	17	53	68	271	1,741
Richmond	707	136	490	17	53	68	271	1,741
Ridge/Meadows	124	138	101		3	1	593	960
Maple Ridge	74	125	4		3	1	527	735
Pitt Meadows	49	13	97				66	226
Surrey/White Rock	1,029	264	462	5	84	74	616	2,534
Surrey	1,029	264	462	5	84	74	616	2,534
Vancouver	239	55	155	26	85	57	27	644
Vancouver	239	55	155	26	85	57	27	644
Total	4,639	975	2,839	90	439	406	2,115	11,502

Table A5.2: Detailed Land Use Classification by Municipality

	Burnaby/New West			Delta/TFN		Langley		North Shore			Northeast Sector			Richmond		Maple Ridge		Pitt Meadows		Surrey	Vancouver	Total			
	Burnaby	New West	Total	Delta	TFN	Total	Langley City	Langley Twp	Total	North Van City	North Van Dist	Total	Coquitlam	Port Moody	Total	Richmond	Maple Ridge	Pitt Meadows	Total						
Building-intensive - Industrial	538	59	597	753	31	783	72	533	605	30	80	110	213	225	7	445	707	74	49	124	1,029	239	4,659		
	192	31	223	202	9	211	41	185	226	13	30	43	110	68	4	181	309	22	38	60	559	100	1,914		
	108	4	112	73	73	73	5	35	40	14	19	33	33	46	2	81	151	13	2	14	88	52	643		
	122	8	130	212	212	212	17	119	136	3	29	33	64	73	1	138	139	34	34	188	51	1,060			
	116	16	131	266	22	288	10	194	203	0	1	1	6	39	0	45	109	5	10	15	194	36	1,072		
	Land-intensive - Industrial	54	24	78	119	1	120	5	80	85	2	15	16	49	19	14	82	136	125	13	138	264	55	975	
		10	4	14	36	36	36	2	46	46	12	12	13	5	12	30	50	99	10	109	73	17	387		
		28	20	48	80	1	81	2	26	28	1	1	17	7	3	26	72	22	22	174	8	461			
		16	0	16	3	3	3	3	8	11	2	2	4	19	7	0	26	14	3	3	6	17	30	127	
		Large-Scale Infrastructure / Transportation	316	65	380	391	6	397	44	44	44	93	151	244	16	143	406	565	490	4	97	101	462	155	2,839
47			1	48	93	2	95	18	18	18	1	18	20	3	1	369	369	4	19	4	1	4	119	5	332
260				260							3	3	3	3	3									631	
5			29	34	2	4	6				3	53	56	8	143		150	7	61	61	181	36	530	200	
Transp Infra - Operations / Parking			4	35	39	282	282	282		26	26	88	77	166	5	37	43	264		36	36	162	115	1,070	76
			22	1	23	5	5	5	5			1	3	5	2	7	1	9	17			5	26	90	90
	21		0	21	5	5	5				1	3	4	2	7	1	9	17			4	18	78	78	
	0		1	2							0	0	1	0	1	1	1				1	8	12	12	
	Retail		58	31	89	23	6	29	3	44	46	3	6	10	33	6	1	39	53	3	3	84	85	439	
			13	5	19							3	6	10	33	6	1	39	53	3	3	84	85	439	
		18	18	36	6	6	12	2	33	35	0	4	4	17	2	1	19	26	2	2	45	37	217		
		27	7	34	17	17	17	1	11	12	0	2	2	4	0	8	9	1	1	25	33	141			
		Commercial	118	15	133	8	8	8	1	39	40	7	8	14	5	3	4	12	68	1	1	74	57	406	
			75	15	90	3	3	3	0	17	17	0	4	4	3	1	4	8	53		45	36	258		
40			40	80	1	1	1	1	8	8	6	1	7	1	0	1	5	5		6	15	82			
1			0	1	3	3	3	0	6	6	0	0	0	0	2	0	2	2		6	3	20			
0			0	3	3	3	3	0	2	2	2	2	2	1	0	1	6	1		10	3	19			
2			2	4	0	0	0	1	6	7	1	2	2	1	0	1	6	1	1	7	1	7	1	27	
39	3		42	228	84	313	3	172	176	21	21	21	8	36	11	56	271	66	593	616	27	2,115			
0	0		0					4	4										135						
5	0		5	1	1	1	1	3	71	74	1	1	1	0	2	0	2	4	27	102	6	223			
Other / Vacant					66		66				1	1	1	5		5	41	102	4	106	13	232			

Table A5.3: Regional Designation by Municipality

	Con Rec	Rural	Agricultural	General			Total
				Urban	Mixed Emp	Industrial	
Burnaby	1			203	474	465	1,144
Coquitlam				45	227	53	326
Delta	54		7	35	59	1,371	1,527
Langley City				16	22	47	85
Langley Township		1		35	193	682	912
Maple Ridge		201	0	8		525	735
New Westminster	2			49	6	141	198
North Vancouver City				5	40	90	136
North Vancr Dist				99		185	284
Pitt Meadows				68		158	226
Port Coquitlam	1		30	10	5	393	439
Port Moody	1			21		422	444
Richmond	60		12	147	425	1,097	1,741
Surrey			1	127	981	1,425	2,534
TFN						128	128
Vancouver				11	136	497	644
Total	119	202	50	880	2,569	7,681	11,502

Table A5.4: Land Ownership Type by Municipality

Municipality	Private	Railway	Crown Corp	Public -			First Nations	Total
				Federal	Provincial	Muni/Reg		
Burnaby	1,022	7	37	7	12	59		1,144
Coquitlam	291	8	5	6	5	11		326
Delta	1,032	10	42	315	19	109		1,527
Langley City	81		1			2		85
Langley Twp	872		6		2	31		912
Maple Ridge	587		4		33	111		735
New West	119	29	7	36	2	6		198
North Van City	40	3	2	88		2		136
North Van Dist	163		9	94	1	17		284
Pitt Meadows	104	73				39	9	226
Port Coquitlam	236	150	2	7	2	12	30	439
Port Moody	405			37	2	0		444
Richmond	980		32	648	4	77		1,741
Surrey	1,781	184	119	223	71	156		2,534
TFN						128		128
Vancouver	408	34	4	122	6	71		644
Total	8,121	498	269	1,584	159	832	40	11,502

Appendix 6: Inventory Tables – Municipal Designation and Zoning

Table A6.1: Municipal Designation / Zoning by Regional Designation

RGS Designation	Yes OCP, Yes Zoning	Yes OCP, No Zoning	No OCP, Yes Zoning	Total
Con Rec	58	58	4	119
Rural	43	159	0	202
Agricultural	18	30	2	50
General Urban	391	105	385	880
Mixed Emp	1,989	577	3	2,569
Industrial	6,971	619	92	7,681
Total	9,470	1,548	484	11,502

Table A6.2: Municipal Designation / Zoning by Sub-Region

Sub-Regions	Yes OCP, Yes Zoning	Yes OCP, No Zoning	No OCP, Yes Zoning	Total
Burnaby / New West	1,116	10	216	1,342
Delta/TFN	1,553	99	3	1,655
Langley	730	219	48	996
North Shore	399	7	14	420
Northeast Sector	1,117	60	32	1,209
Richmond	1,533	58	150	1,741
Ridge / Meadows	422	530	8	960
Surrey / White Rock	1,956	565	13	2,534
Vancouver	644	0		644
Total	9,470	1,548	484	11,502

Table A6.3: Municipal Designation / Zoning by Consolidated Land Use Classification

Land Use Category	Yes OCP, Yes Zoning	Yes OCP, No Zoning	No OCP, Yes Zoning	Total
Building - Industrial	4,379	72	188	4,639
Land - Industrial	838	96	40	975
Large-Scale Infrs / Transp	2,598	77	164	2,839
Transport Opts / Parking	87	0	3	90
Retail	338	43	57	439
Commercial	330	54	22	406
Other / Vacant	899	1,205	10	2,115
Total	9,470	1,548	484	11,502

Appendix 7: Inventory Tables – Inventory Site Size Distribution

Table A7.1: Site Size Distribution by Consolidated Land Use Classification

Site Size	Building - Industrial	Land - Industrial	Large-Scale		Retail	Commercial	Other / Vacant	Total
			Infras / Transp	Transp Opts / Parking				
less than 1 HA	1,348	159	72	12	157	132	210	2,090
1 to 1.99 HA	1,081	148	93	8	105	138	225	1,798
2 to 4.99 HA	1,306	284	228	14	111	94	330	2,367
5 to 9.99 HA	581	207	246	33	50	28	380	1,525
10 to 19.99 HA	228	175	279	23	16	14	469	1,204
20 HA and over	95		1,921				501	2,517
Total	4,639	975	2,839	90	439	406	2,115	11,502

Table A7.2: Site Size Distribution by Regional Designation

Site Size	Con Rec	Rural	Agricultural	General			Industrial	Total
				Urban	Mixed Emp			
less than 1 HA	3	20	5	252	636		1,174	2,090
1 to 1.99 HA	2	9		134	671		983	1,798
2 to 4.99 HA	2	32	5	210	661		1,458	2,367
5 to 9.99 HA		37	10	84	307		1,088	1,525
10 to 19.99 HA		70		66	200		868	1,204
20 HA and over	112	34	30	135	94		2,111	2,517
Total	119	202	50	880	2,569		7,681	11,502

Table A7.3: Site Size Distribution by Land Ownership Type

Site Size	Private	Railway	Crown Corp	Public - Federal	Public - Provincial	Public - Muni/Reg.	First Nations	Total
less than 1 HA	1,933	4	16	51	16	69		2,090
1 to 1.99 HA	1,575	11	23	85	22	83		1,798
2 to 4.99 HA	1,935	42	43	207	32	109		2,367
5 to 9.99 HA	996	46	41	194	29	211	9	1,525
10 to 19.99 HA	597	13	50	270	59	214		1,204
20 HA and over	1,085	382	97	777		147	30	2,517
Total	8,121	498	269	1,584	159	832	40	11,502

Table A7.4: Site Size Distribution by Sub-Region

Site Size	Burnaby / New West		Delta / TFN	Langley	North Shore	Northeast Sector		Richmond	Ridge - Meadows		Surrey / White Rock	Vancouver	Total
less than 1 HA	291	192	251	73	154	301	81	510	235				2,090
1 to 1.99 HA	248	220	239	37	136	269	48	513	89				1,798
2 to 4.99 HA	329	364	307	45	150	403	109	551	109				2,367
5 to 9.99 HA	178	261	121	38	99	259	155	330	83				1,525
10 to 19.99 HA	81	162	78	42	70	290	222	221	37				1,204
20 HA and over	214	455		185	601	218	345	408	91				2,517
Total	1,342	1,655	996	420	1,209	1,741	960	2,534	644				11,502

Appendix 8: Inventory Tables – Vacant Site Size Distribution

Table A8.1: Site Size Distribution of Vacant Lands by Regional Designation

Site Size	General					Total
	Rural	Agricultural	Urban	Mixed Emp	Industrial	
less than 1 HA	6	1	48	81	74	210
1 to 1.99 HA	6		17	128	74	225
2 to 4.99 HA	30		35	120	145	330
5 to 9.99 HA	37		9	109	225	380
10 to 19.99 HA	70		16	95	288	469
20 HA and over	34	30		64	373	501
Total	183	31	125	597	1,179	2,115

Table A8.2: Site Size Distribution of Vacant Lands by Land Ownership Type

Site Size	Private	Railway	Crown Corp	Public - Federal	Public - Provincial	Public - Munic/Reg	First Nations	Total
less than 1 HA	171			7	7	24		210
1 to 1.99 HA	165		5	14	13	30		225
2 to 4.99 HA	232	8	3	45	17	26		330
5 to 9.99 HA	188	8	14	31	29	100	9	380
10 to 19.99 HA	197			95	49	128		469
20 HA and over	360			44		67	30	501
Total	1,312	16	22	237	115	374	40	2,115

Table A8.3: Site Size Distribution of Vacant Lands by Count

Site Size	Total Land HA	Total Count	Count as %
less than 1 hectare	210	741	68%
1 hectare to 1.99 hectares	225	152	14%
2 hectares to 4.99 hectares	330	107	10%
5 hectares to 9.99 hectares	380	51	5%
10 hectares to 19.99 hectares	469	32	3%
20 hectares and over	501	12	1%
Total	2,115	1,095	100%

Appendix 9: Land Use Classification Definitions

The following land use classification definitions are for the primary or predominant use of the site, including normally associated on-site accessory / ancillary uses (including parking and loading areas), as of mid-2020. Sites may include multiple or overlapping and non-discrete uses, in which case the predominant use is considered for the classification. A 'site' may represent multiple separate legal properties consolidated for the purposes of the inventory analysis. Current land use classifications are independent of future-oriented land use designations / policies.

Building-Intensive Industrial

1. **General Industrial:** Wide variety of heavy and light industrial uses of various scales including repair activities (excluding those defined in the other land use classifications), and limited industrial-related accessory uses, such as on-site retail and office.
2. **Mixed Industrial / Commercial:** A property with multiple units such as flex space, with numerous and varied industrial, quasi-industrial, and commercial uses (independent of tenure).
3. **Manufacturing / Production:** The conversion / transformation of raw materials or parts into finished goods.
4. **Distribution / Warehouse:** Specialized buildings that stock and handle products / goods to be redistributed, forming part of the supply network.

Land-Intensive Industrial

5. **Processing / Handling of Natural Resources:** Activities such as lumber, saw mills, shingle mills, aggregates, and asphalt / concrete (excludes 'Outdoor Storage' and 'Manufacturing / Production').
6. **Outdoor Storage:** Ongoing and temporary land-intensive outdoor storage of miscellaneous / scrap materials, solid waste / recyclable goods, auto-wreckers / vehicle parts, truck / chassis parking, shipping containers, construction materials, and heavy equipment / machinery (excludes: 'Resource Extraction', 'Processing / Handling of Natural Resources', and Port Terminal related storage / stockpiling).
7. **Maintenance Yards / Operations Services:** Municipal, corporate, and agency works yards involving the storage and maintenance of road, construction, and maintenance equipment and supplies, and ambulance / fire truck stations.

Large-Scale Infrastructure / Transportation

8. **Infrastructure - Utilities:** Electricity, natural gas, telephone, cable, communication towers, power sub-stations, liquid and solid waste management facilities, and other related / supporting functions.
9. **Infrastructure - Oil Tank Farm:** Facilities for petroleum products transportation, storage, or processing, including refineries, as well as associated hazard separation setback areas.
10. **Transportation Infrastructure - Rail Yards:** Rail intermodal terminals and yards (excluding individual rail lines / corridors; rail spurs located on properties are classified as per the primary use of that property).
11. **Transportation Infrastructure - YVR Airside / Groundside Developed*:** Airside lands refer to restricted industrial lands that are developed and reserved exclusively for airport-related activities (e.g. airplane maintenance and storage) requiring immediate access to runways and

taxiways and are not available for general market industrial use. Groundside lands refer to restricted industrial lands that are developed and not available for general market industrial, but permit uses that are 'airport compatible' (e.g. couriers) and are further limited by restrictions on building height and design because of adjacent flight paths. Lands available for general market industrial use are not included in this classification. Runways and airfields are not included in this classification, nor included in the Inventory.

12. **Transportation Infrastructure - Airports Airside / Groundside Developed* (excluding YVR):** Lands that are developed and reserved exclusively for airport-related activities (e.g. airplane maintenance and storage) requiring immediate access to runways and taxiways and are not available for general market industrial, but permit uses that are 'airport compatible'. Runways and airfields are not included in this classification, nor included in the Inventory.
13. **Transportation Infrastructure - Port Terminal Developed*:** Developed lands directly associated with port terminals / dock / wharf and equipment used for loading and unloading (and associated storage / stockpiling) of various types of goods (e.g. autos, bulk, breakbulk, and containers).

Transportation Operations / Parking

14. **Transportation - Operations:** Parking / storage / maintenance of transit operations (including TransLink depots) and large taxi operations located on Inventory lands.
15. **Transportation - Parking:** Properties that are used exclusively for parking of vehicles without another primary use, in the form of either surface parking lots or structured parking facilities, where ownership is not associated with adjacent properties / businesses (excludes lands used for the temporary storage of newly imported vehicles which is classified as 'Transportation Infrastructure - Port Terminal Developed').

Retail Uses

16. **Non-Industrial - Retail (big box):** Major stand-alone retail or wholesale units (chain stores or stores over 50,000 sq ft building sizes) and other commercial activities, and associated parking.
17. **Non-Industrial - Retail (small or medium-scale):** Individual or multiple retail uses (under 50,000 sq ft building sizes) and associated parking.
18. **Non-Industrial - Retail (vehicle dealerships):** New and used vehicle sales lots and business operations for showing, storing, and selling of vehicles (e.g. auto, trailer, boats) (excludes the temporary storage of newly imported vehicles which is classified as 'Transportation Infrastructure – Port Terminal Developed', and vehicle maintenance facilities which are classified as 'General Industrial')

Commercial Uses

19. **Non-Industrial - Office:** Stand-alone office building and associated parking, which may include retail uses on the ground level.
20. **Non-Industrial - Media Production:** Facilities used for production or broadcast of film / movies / videos, such as filming / recording studios, sound-stages, equipment storage / rental, however excludes software production offices.
21. **Non-Industrial - Banquet Hall / Assembly:** Assembly facilities and associated parking, used for religious or non-religious large-scale assembly / gathering activities and events.

- 22. **Non-Industrial - Education / Training:** Training, vocational school or other educational related facilities, which may or may not include a classroom component.
- 23. **Non-Industrial - Recreation:** Indoor or outdoor recreational uses, such as fitness facilities, racket clubs, and other recreational activities.

Other Uses / Vacant

- 24. **Agriculture:** Agricultural or farming relates uses (independent of Agricultural Land Reserve designation or BCAA Farm Class status), as a possible holding use for future conversion.
- 25. **Residential:** Residential use, typically an older single detached house and yard, as a possible holding use for future conversion to industrial, and in some cases other forms of residential that may limit the potential to redevelop the lands to industrial uses.
- 26. **Resource Extraction:** Earth extraction uses, such as aggregates / gravel / sand pits, and peat.
- 27. **Transportation Infrastructure - YVR Airside / Groundside Vacant*:** Airside lands refer to restricted industrial lands intended for development and are reserved exclusively for airport-related activities (e.g. airplane maintenance and storage) requiring immediate access to runways and taxiways and are not available for general market industrial use. Groundside lands refer to restricted industrial lands intended for development and are not available for general market industrial, but permit uses that are 'airport compatible' (e.g. couriers) and are further limited by restrictions on building height and design because of adjacent flight paths. Lands available for general market industrial use are not included in this classification. Runways and airfields are not included in this classification, nor included in the Inventory.
- 28. **Transportation Infrastructure – Airport Airside / Groundside Vacant (excluding YVR)*:** Industrial lands intended for airside development and are reserved exclusively for airport-related activities (e.g. airplane maintenance and storage) requiring immediate access to runways and taxiways and / or groundside lands that are intended for 'airport compatible' activities (e.g. couriers) and are limited by restrictions on building height and design because of flight path. Lands available for general market industrial use are not included in this classification. Runways and airfields are not included in this classification, nor included in the Inventory.
- 29. **Transportation Infrastructure - Port Terminal Vacant*:** Vacant lands directly associated with port terminals / dock / wharf and equipment intended for use for loading and unloading (and associated storage / stockpiling) of various types of goods (e.g. autos, bulk, breakbulk, and containers).
- 30. **Vacant Land:** Lands that do not have any identified improvements or uses of any sort or type (either industrial or non-industrial).

**** Note: These lands may have restrictions on tenure, use, and development and not available for general market industrial, but permit uses that are port or airport compatible. For more detailed information, refer to the YVR Master Plan or Port of Vancouver Land Use Plan, as applicable.***

Appendix 10: Inventory Methodology

Project Process Steps

The Metro Vancouver 2020 Regional Industrial Lands Inventory was prepared using the following process steps, similar to that used for the 2015 Inventory.

While preparing the 2020 Inventory, staff in several municipalities reviewed and reinterpreted their original 2015 Inventory policies, which resulted in a revised 2015 Inventory. This revised 2015 Inventory is used to measure industrial land changes over the 2015 - 2020 period. It is important to emphasize that 2020 Inventory results should not be compared at face value with published results from previous 2005, 2010, and 2015 Inventories due to methodological differences, improvements in data, and various inconsistencies, including:

1. **Inventory Boundary Delineations** – Each Inventory snapshot (2005, 2010, 2015, 2020) uses a slightly different shoreline boundary that cumulatively impacts land area calculations for waterfront sites.
2. **Inventory Universe** – Industrial-serving additional lands (e.g. intermodal yards and sewerage treatment plants) were included in the 2010, 2015, and 2020 Inventories, but not the 2005 Inventory.
3. **Municipal Staff Policy Interpretation** – At times, different municipal policy requires interpretation and judgment. Despite no policy change, policy interpretation has shown to vary among the Inventories.

The 2020 Inventory attempts to account for the above methodological differences and inconsistencies (plus other minor adjustments) by neutralizing their cumulative impact through a ‘back-casting’ of the earlier 2015 published Inventory results into ‘2015 revised’ figures, thereby enabling direct comparisons and measures of ‘net’ change between 2020 results with modified results from the revised 2015 Inventory. The revised 2015 Inventory numbers referred to in this report reflect adjustments to the noted inconsistencies, and are thus more comparable with the 2020 Inventory results.

All lands that were municipally designated as Industrial (in municipal Official Community Plans and/or Neighbourhood Plans, or equivalent) were included in the Inventory. In addition, properties that were not designated Industrial, but were zoned (or equivalent) Industrial (or zoned as comprehensive development with allowable industrial uses) and developed / used as industrial were included (see definitions). As well, the Inventory incorporates the Port of Vancouver and YVR Vancouver Airport Authority land use plans.

Past Metro Vancouver Regional Industrial Lands Inventories

The 2005 and 2010 Inventories used the following definitions:

- *Industrial Land*: Lands designated by municipal Official Community Plans for industrial uses, or land zoned and utilized for industrial uses.

- *Developed Industrial Land: Industrial Land* that is wholly or partially utilized for industrial related uses, which includes properties used for outdoor storage. This also includes office, retail, or institutional uses that are allowed within municipal industrial zones.
- *Vacant Industrial Land: Industrial Land* that is not utilized for industrial related uses, which includes industrial properties that are completely vacant as well as industrial properties currently utilized for residential and agriculture uses.

For both the past 2005 and 2010 Inventories, Metro Vancouver considered only whether the land was ‘Developed’ or ‘Vacant’. In actuality, industrial lands have different types of uses, levels of utilization, and development potential due to various site and area factors or characteristics.

The previous binary Inventory classification did not reflect the on-the-ground reality that some ‘Developed’ properties are only partially utilized (and have significant redevelopment and intensification potential), nor the fact that some ‘Vacant’ properties may have significant development constraints (or are being used for other non-industrial purposes).

The past Inventories did not include the level of data to provide a detailed picture of industrial land uses and utilization level, as well as market readiness and intensification potential. Specifically, although these Inventories allowed for a tally of the industrial lands in the region (i.e., ‘Developed’ and ‘Vacant’), they did not assess the level of utilization, consider land ownership and designations, include site physical constraints, or have the ability to analyze the future capacity of the lands. Past analysis was limited to high level reporting.

Enhanced Metro Vancouver Regional Industrial Lands Inventories

The enhanced data collection and classification system addresses limitations and criticisms inherent in previous industrial lands Inventory projects. Building on past work, the more recent 2020 and 2015 Regional Industrial Lands Inventory provides enhanced detail about the industrial land supply. The 2020 and 2015 Inventory data is classified by development status, type of use, land ownership, municipal and regional designations, and other attributes, with an aim to informing municipal and regional plans and policies, and public and private sector investments. The Inventory allows for greater refinement and understanding of the industrial land use and capacity, while still allowing for comparisons of change over time.

The improvements to the 2020 and 2015 (revised) Inventory also reflected the following factors:

- Improved GIS mapping / boundaries information
- Improved consistency in terms of applying criteria for land classifications
- Improved consistency in terms of recognizing site constraints
- Removing un-developable lands due to transportation and infrastructure rights-of-way

These refinements improve the Inventory and also make it possible to directly and accurately compare the 2020 and revised 2015 Inventory to assess changes in the region’s industrial land base and changes in lands absorbed over the five-year period.

Appendix 11: Inventory Data Base

Property information collected through the 2020 Inventory, which can be used for further analysis:

Land Ownership / Tenure

- Private – fee simple, strata
- Railways
- Crown Corporations
- Public (municipal / regional – Metro Vancouver and TransLink)
- Public (Provincial)
- Public (Federal, Port, Airport)
- First Nations

Site Physical

- Site size
- Year building built / major renovation
- Assessed value of land / improvements
- Rights of Way (ROWS)
- Floodplain

Site Regulatory

- Municipal industrial zoning
- Municipal industrial designation
- Regional land use designations



To: Performance and Audit Committee

From: Joe Sass, Director Financial Planning and Operations/Deputy CFO

Date: April 7, 2021 Meeting Date: April 14, 2021

Subject: **Audited 2020 Financial Statements**

RECOMMENDATION

- a) That the MVRD Board approve the Audited 2020 Consolidated Financial Statements for the Metro Vancouver Regional District;
 - b) That the GVS&DD Board approve the Audited 2020 Financial Statements for the Greater Vancouver Sewerage and Drainage District;
 - c) That the GVWD Board approve the Audited 2020 Financial Statements for the Greater Vancouver Water District;
 - d) That the MVHC Board approve the Audited 2020 Financial Statements for the Metro Vancouver Housing Corporation.
-

EXECUTIVE SUMMARY

Although we have encountered unprecedented uncertainty with COVID-19, the 2020 Audited Financial Statements illustrate that Metro Vancouver entered this period in strong financial position with excellent liquidity and solid reserves.

The statements have been prepared in accordance with Canadian Public Sector Accounting Standards ("PSAS") and have received an unqualified audit opinion by the external auditors, BDO Canada LLP.

PURPOSE

To present, for approval, the Audited 2020 Financial Statements for the Metro Vancouver Districts and the Metro Vancouver Housing Corporation.

BACKGROUND

Legislation requires that annual Audited Financial Statements be prepared for the Metro Vancouver Districts and Metro Vancouver Housing Corporation and presented at a public meeting of the Board of Directors. The Audited Financial Statements for 2020 have been prepared by management in accordance with Canadian Public Sector Accounting Standards ("PSAS") and have received an unqualified audit opinion by the external auditors, BDO Canada LLP.

2020 FINANCIAL STATEMENT HIGHLIGHTS

Under PSAS regulations, governments are required to present four statements with explanatory notes - Statement of Financial Position (Exhibit A), Statement of Operations (Exhibit B), Statement of Net Debt (Exhibit C) and Statement of Cash Flows (Exhibit D). 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 to determine the annual revenue requirements to meet expenditure obligations. These differences are outlined in note 16 of the consolidated statements.

The complete set of 2020 Audited Financial Statements is attached. These are presented for the Boards' approval and include:

Audited 2020 Consolidated Financial Statements for the Metro Vancouver Regional District
Audited 2020 Financial Statements for the Greater Vancouver Sewerage and Drainage District
Audited 2020 Financial Statements for the Greater Vancouver Water District
Audited 2020 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 statements, the *Summarized Consolidated Statement of Financial Position (Appendix 1)* and the *Consolidated Statement of Operations (Appendix 2)*, similar to the Balance Sheet and Income Statement in private organizations, are the foundation of the audited statements. They contain three key indicators, the accumulated surplus, annual surplus and net debt.

The *Summarized Statement of Financial Position (Appendix 1)* contains two of the indicators, the net debt and the accumulated surplus. The net debt position represents the amount by which the Districts' liabilities exceed the financial assets. Although the amount appears as unfavourable, the vast majority of the organization's liabilities are long-term debt which is repayable over several years. The organization's financial assets are more than sufficient to offset the amount of short-term obligations. The current ratio which is current assets divided by current liabilities and is a measure of an organization's liquidity is 2.8 to 1. A ratio of 2 to 1 is considered to be a measure of favourable liquidity. The net debt position increased by only \$245.7 million, while the increase in tangible capital assets was \$799.1 million. This indicates that more of the District's investment in capital infrastructure is being funded more through operations and reserves than debt.

The next indicator, also presented in the *Summarized Statement of Financial Position (Appendix 1)* is the accumulated surplus. Commonly thought of as "Net Worth" in private organizations, the District's accumulated surplus is favourable at \$5.4 billion, which indicates that the organization owns (Financial and Non-Financial Assets) more than it owes (Liabilities). This reflects the member municipalities' net investment in the District's consolidated entity. It comprises reserve balances of \$325.1 million and the investment in tangible capital assets (assets less debt owing) of \$5.12 billion.

The accumulated surplus increased by \$557.8 million in 2020 which represents the annual surplus for the year, the final indicator. The annual surplus is calculated as the difference between revenues and expenses and detailed in Consolidated Statement of Operations (Appendix 2). For PSAS purposes, annual surplus does not include contributions to and from reserves, capital contributions or principal payments on long-term debt.

Additional explanations pertaining to the *Summarized Consolidated Statement of Financial Position (Appendix 1)* and the *Consolidated Statement of Operations (Appendix 2)* are included in the *2020 Financial Statement Highlights (Appendix 3)* and in a separate report titled "5.3 2020 Financial Results Year-End".

ALTERNATIVES

These 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 2020 Financial Statements.

SUMMARY / CONCLUSION

The financial statements are part of the legislated reporting requirements for 2020 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, 2020, 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 1 - Summarized Consolidated Statement of Financial Position
- Appendix 2 - Consolidated Statement of Operations
- Appendix 3 - Management Discussion and Analysis - 2020 Financial Statement Highlights
- Attachment 1 - Metro Vancouver Districts and Metro Vancouver Housing Corporation Financial Statements for the year ended December 31, 2020

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METRO VANCOUVER REGIONAL DISTRICT

Summarized Consolidated Statement of Financial Position

Year ended December 31, 2020

(in thousands of dollars)

	2020	2019 (restated)
Financial Assets		
Cash, cash equivalents and investments	\$ 688,902	\$ 868,627
Accounts receivable	150,627	155,500
Debt reserve fund		
Total debt reserve fund	59,442	54,866
Less Debt reserve fund, member municipalities and Translink	(35,603)	(34,082)
Debt reserve fund, Metro Vancouver Districts	23,839	20,784
	863,368	1,044,911
Liabilities		
Accounts payable and other liabilities	294,805	308,635
Less accrued interest on debt (included in debt below)	(22,098)	(22,107)
Accounts payable and other liabilities	272,707	286,528
Deferred revenue and refundable deposits	311,451	390,045
Debt, Translink and member municipalities		
Debt, net of sinking fund	990,009	983,845
Accrued interest on debt	10,790	10,863
	1,000,799	994,708
Due from Translink and member municipalities	(1,000,799)	(994,708)
	-	-
Debt, Metro Vancouver		
Debt, net of sinking funds	1,385,445	1,228,901
Accrued interest on debt	11,308	11,244
	1,396,753	1,240,145
	1,980,911	1,916,718
Net Debt	(1,117,543)	(871,807)
Non-Financial Assets		
Tangible capital assets	6,539,503	5,740,451
Prepays and inventories	24,624	20,127
	6,564,127	5,760,578
Accumulated Surplus (Equity)	\$ 5,446,584	\$ 4,888,771
Accumulated Surplus (Equity), beginning of year	\$ 4,888,771	\$ 4,386,138
Revenue	1,162,441	1,149,082
Expenses	604,628	646,449
Annual surplus	557,813	502,633
Accumulated Surplus (Equity), end of year	\$ 5,446,584	\$ 4,888,771
Accumulated Surplus (Equity) consists of		
Reserves	\$ 325,079	\$ 273,140
Non-financial assets (net of debt and capital funds)	5,121,505	4,615,631
	\$ 5,446,584	\$ 4,888,771

METRO VANCOUVER REGIONAL DISTRICT

Consolidated Statement of Operations

Year ended December 31, 2020

(in thousands of dollars)

	2020 Budget	2020 Actual	2019 Actual (restated)
Revenue			
MVRD property tax requisitions	\$ 73,528	\$ 73,528	\$ 62,901
Metered sale of water	307,175	297,781	285,316
Sewerage and drainage levy	274,237	274,237	255,811
Tipping fees	105,823	100,880	105,692
Development cost charges	87,412	81,653	152,389
Housing property rentals	40,392	41,607	40,870
BODTSS industrial charges	11,201	11,568	11,220
Electricity sales	5,682	5,793	5,793
Grants and other contributions	203,538	184,641	68,881
User fees, recoveries and other revenue	27,202	32,941	104,768
Sinking fund and interest income	24,212	29,734	28,314
Sinking fund income, members and TransLink	27,611	28,078	27,127
	1,188,014	1,162,441	1,149,082
Expenses			
Sewer operations	210,269	191,431	180,035
Waste disposal, recycling and regulatory services	106,524	95,274	129,704
Water operations	155,410	139,227	139,136
Building operations	18,827	15,592	18,021
Housing rental operations	36,850	27,211	34,724
General government services	5,782	5,221	5,145
Regional parks	33,928	29,670	30,200
Air quality	9,751	9,374	9,655
Regional employers services	2,706	2,459	2,154
911 emergency telephone system	4,521	4,364	4,282
Regional planning	3,298	3,128	2,946
Housing planning and policy	1,163	881	492
Electoral areas	511	515	949
Regional global positioning system	278	204	386
Sasamat volunteer fire department	776	195	247
Regional prosperity	980	206	58
Regional emergency management	215	125	169
Homelessness partnering strategy	-	-	3,323
Corporate costs	58,951	51,473	57,696
Sinking fund income attributed to members and TransLink	27,611	28,078	27,127
	678,352	604,627	646,449
Annual surplus	509,662	557,813	502,633
Accumulated surplus, beginning of year	4,875,761	4,888,771	4,386,138
Accumulated surplus, end of year	\$ 5,385,423	\$ 5,446,584	\$ 4,888,771

Management Discussion and Analysis – 2020 Financial Statement Highlights

Summarized Consolidated Statement of Financial Position

The purpose of the *Consolidated Statement of Financial Position (Appendix 1)* is to present the organization's assets, liabilities, net debt position and accumulated surplus or equity position. The accumulated surplus could also be interpreted as the net worth of the organization.

Relevant explanations pertaining to the Summarized Consolidated Statement of Financial Position are as follows:

Accumulated Surplus The key performance indicator on Statement of Financial Position is the Accumulated Surplus. The accumulated surplus for the District is favourable at \$5.4 billion, which indicates that the organization owns (Financial and Non-Financial Assets) more than it owes (Liabilities). This amount is often referred to in private organizations as "Net Worth", and reflects the member municipalities' net investment in the District's consolidated entity. It comprises reserve balances of \$325.1 million and the investment in tangible capital assets (assets less debt owing) of \$5.1 billion.

The accumulated surplus increased by \$557.8 million in 2020 which represents the annual surplus for the year, calculated as the difference between revenues and expenses and detailed in Appendix 2. For PSAS purposes, annual surplus does not include contributions to and from reserves, capital contributions or principal payments on long-term debt.

Financial Assets

Cash, Cash Equivalents and Investments Cash, cash equivalents and investments consist of cash and both long and short-term investments. The 2020 balance was significantly lower than 2019 as a result increased approved capital spending in 2020 for utility infrastructure projects funded in part from the application of deferred grants and reserves previously held in cash and investments.

Accounts Receivable Accounts receivable are amounts due through the normal course of District business and are net of any allowance for doubtful accounts, which is negligible. The balance at December 31, 2020 comprises mainly of tipping fees due from commercial solid waste haulers, development cost charge (DCC) income, industrial sewer charges from commercial customers and payments due from our member municipalities for water sales. The amount is lower than 2019, mainly due to the timing of receipts for water sales revenue.

Financial Assets (continued)

<i>Debt Reserve Fund</i>	<p>The debt reserve fund represents the amount required, under agreement with the Municipal Finance Authority (MFA), as security for debt service obligations related to MFA debentures issued to the Districts and its members. This represents 1% of the debenture issues. These amounts are refundable, with interest, upon debenture maturity. This balance fluctuates upward with new debt issues and downward as issues mature. The total debt reserve fund balance can be segregated into two components:</p> <ol style="list-style-type: none">1) Member Municipalities and Translink (\$35.6 million). This amount is related to debt service obligations for these organizations and is fully refundable to them. Therefore, it has no impact on Metro Vancouver's financial position.2) Metro Vancouver (\$23.8 million). This amount is related to debt incurred to fund infrastructure projects in GVWD and GVS&DD.
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Liabilities

<i>Accounts Payable and Other Liabilities</i>	<p>Accounts payable and other liabilities consists of amounts owing:</p> <ul style="list-style-type: none">• to suppliers for goods received and services rendered, primarily those relating to capital projects;• to employees for future benefits which represent the potential payments to employees of entitled benefits, such as banked vacation;• to MFA and mortgage providers for interest accrued on debt; and• for the District's share of landfill closure and post closure costs at the Vancouver and Cache Creek landfills.
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The decrease of \$13.8 million is mainly a result of a decrease of \$21.0 million lower accruals in trade and construction holdbacks due to timing of payments and is offset by an increase in payroll accruals of \$5.9 million mainly due to the expected increases from collective bargaining and an increase of \$2.6 million accruals for anticipated costs to remediate contaminated sites in 2021.

<i>Deferred Revenue and Refundable Deposits</i>	<p>Deferred revenue and refundable deposits include:</p> <ul style="list-style-type: none">• \$213.1 million of restricted funds raised through the collection of development cost charges (DCCs), which will be used to fund future liquid waste growth capital projects;• \$88.5 million for the Provincial grant associated with the construction of the new North Shore Wastewater Treatment plant;• \$3.3 million of restricted funds in MVHC which will be used for the replacement of equipment and specified building components and to offset future operating deficits in specific programs;• \$3.9 million in security deposits in MVHC and Regional Parks; and• \$2.6 million from miscellaneous deferred grants and revenues in other programs.
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Liabilities (continued)

Deferred Revenue and Refundable Deposits (continued) The decrease of deferred revenue for the year is due mainly to the utilization of DCCs and the Provincial grant to fund GVS&DD capital projects, including the North Shore Wastewater Treatment plant. Note 18 of the consolidated financial statements highlights that deferred revenue in 2019 was restated and reduced by \$13.0 million, as a result of MVHC not recognizing revenue from the maturity of funds related to Section 95 properties. The impact of this is an increase in MVHC's general reserves by \$13.0 million in 2019.

Debt Debt, net of sinking funds reflects the amount of long term borrowing outstanding at the end of 2020. 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.

TransLink and Member Municipalities The debt owing to MFA for TransLink and member municipalities reflects borrowing on behalf of these entities to fund major capital projects. The amount is completely offset reflecting the fact that these entities are responsible for the debt. Therefore, the impact on Metro Vancouver's financial position is nil.

Overall debt for these entities increased by \$6.2 million. New long-term borrowing during the year was \$89.1 million relating to debt borrowed on behalf of the Township of Langley (\$85.99 million), Bowen Island Municipality (\$2.5 million) and Village of Lions Bay (\$0.6 million). This increase is offset by debt and sinking fund payments of \$54.8 million and sinking fund interest earned of \$28.1 million. In addition, there was \$3.9 million in debt maturities with an equal offsetting amount of sinking fund retirements.

Metro Vancouver The debt owing on behalf of the Metro Vancouver Districts and Metro Vancouver Housing Corporation reflects borrowing to fund major infrastructure projects. The net amount owing for Metro Vancouver at the end of 2020 is \$1.4 billion. To put this in context, Metro Vancouver has tangible capital assets of \$6.5 billion and an investment in non-financial assets (assets less debt owing) of \$5.1 billion.

The debt increased by \$156.5 million. New long-term borrowing during the year was \$278.3 million (\$195.0 million for GVSⅅ \$70.0 million for GVWD and \$13.3 million for MVHC). This increase is offset by debt and sinking fund payments of \$98.9 million and sinking fund interest earned of \$22.9 million. In addition, there was \$3.6 million in debt maturities with an equal offsetting amount of sinking fund retirements.

Net Debt The net debt position indicates the amount by which the organizations' liabilities exceed the financial assets. Although the amount appears as unfavourable, the vast majority of the organization's liabilities are long-term debt which is repayable over several years. The organization's financial assets are more than sufficient to offset the amount of short-term obligations. The current ratio which is current assets divided by current liabilities and is a measure of an organization's liquidity is 2.8 to 1. A ratio of 2 to 1 is generally considered to be a measure of favourable liquidity.

The net debt position increased by only \$245.7 million, while the increase in tangible capital assets was \$799.1 million. This indicates that more of the District's investment in capital infrastructure is being funded more through operations and reserves, than debt.

Non-Financial Assets Non-financial assets represent the value of tangible capital assets, inventories of supplies held by the organization, the prepaid portion of land leases on housing properties, and prepaid expenses for items such as insurance.

The Tangible Capital Assets balance represents the historical cost of the asset less accumulated amortization. The increase in 2020 is the direct result of the capital expenditures made during the year, the majority of which were for water and sewer infrastructure projects.

Consolidated Statement of Operations

The *Consolidated Statement of Operations (Appendix 2)* identifies the results of the organization's financial activities for the year by presenting revenues less expenses, which is the annual surplus. This statement consolidates the revenues and expenses of the Districts and MVHC.

The annual surplus of \$557.8 million serves as the 2020 addition to the organization's overall accumulated surplus position or net worth of \$5.4 billion. The accumulated surplus in this statement is also articulated in the *Summarized Consolidated Statement of Financial Position and Equity (Appendix 1)*.

As noted above, the annual surplus as presented under PSAS is different from the annual surplus as determined in the context of the annual budget, which is \$33.4 million. The primary difference is that the PSAS framework excludes contributions to and from reserves as well as capital contributions and principal payments on long-term debt. These excluded items form a significant part of the annual approved budget.

Relevant explanations pertaining to the Consolidated Statement of Operations are as follows:

Revenue

<i>Metered Sale of Water</i>	Metered water sales for 2020 were lower than budget due to 3.14% less consumption than anticipated. However, the amount is \$12.4 million higher than 2019 as a result of the increased consumption over the prior year.
<i>Tipping Fees</i>	Tipping fee revenues in Solid Waste were lower than budgeted and prior year due to lower than expected waste flows during 2020.
<i>Development Cost Charges</i>	Development cost charges (DCCs) applied against growth capital debt costs are slightly lower than budget due to growth capital expenditures and related debt financing being less than anticipated. However, the amount is significantly lower than prior year as there was \$122 million direct application of DCCs to project funding in 2019 versus \$42 million in 2020.
<i>Property Rentals</i>	Property rentals in the Housing Corporation were \$1.2 million higher than budget and \$0.8 million higher prior year due to lower than anticipated vacancy rates. Delinquent rents remained at less than 1% throughout the year.
<i>Grants and Other Contributions</i>	Grants and other contributions of \$184.6 million primarily include grants related to GVS&DD capital projects (\$173.5 million), the COVID-19 British Columbia Restart grant (\$2.3 million), grants in lieu of taxes (\$0.9 million), and subsidies and contributions received by MVHC (\$7.7 million). Grants for MVHC include \$6.7 million from funds received in 2018 and 2019 for the Heather Place redevelopment project, which were previously classified as a forgivable loan for accounting purposes, and as a result of the completion of the project are recognized as grant revenue in 2020. Grants are significantly higher than prior year due to the application of capital grants for the North Shore Wastewater Treatment, however, they are lower than budget due to less spending on the project and therefore less grant application than anticipated.
<i>User fees, Recoveries and Other Revenue</i>	User fees were slightly higher than anticipated mainly due to unanticipated cost sharing income for capital projects in GVWD of \$7.4 million. However, user fees, recoveries and other revenue were significantly lower than prior year by \$71.8 million. 2019 included a one-time gain on the sale of former head office buildings of \$63.2 million, revenues related to the discontinued Homelessness Partnering Strategy Program of \$3.3 million and cost-sharing recoveries related to capital projects of \$6.2 million more than 2020.
<i>Sinking fund Income and Interest Income</i>	Sinking fund income and interest income pertains to Metro Vancouver sinking funds and investment balances. The income is higher than anticipated and the prior year because capital expenditures were lower than anticipated due to project delays, resulting in a higher than expected average investment balances for the year.

Revenue (continued)

<i>Sinking Fund Income, Members and TransLink</i>	Sinking fund income, members and TransLink relates to income earned on sinking funds for debt incurred on behalf of these organizations. This income, although recognized in the Financial Statements, is income attributed to the other organizations. There is an offsetting item under expenses, so the net impact to Metro Vancouver is nil.
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Expenses

<i>Sewer (Liquid Waste) Operations</i>	Expenses for Liquid Waste Services were \$18.8 million lower than budget primarily due to delays minor capital program, delays in projects for residuals and research and innovation program and underspends from operating staff vacancies, lower costs for consulting, and easement purchases. The function's debt service costs were \$1.6 million under budget for the year due to some additional contribution to capital from the application of 2019 operational surplus and less than planned capital program expenditures, thereby lowering new debt financing. Also, in addition to debt avoidance gains, favourable terms have been experienced on some re-financing on some existing debt thereby also contributing to the favourable debt variance for the year.
<i>Waste Disposal, Recycling and Regulatory Services (Solid Waste)</i>	Expenditures in Solid Waste operations were lower than budget due to lower operating costs as result of lower than anticipated waste flows due primarily to impacts from COVID-19. The expenditures were lower than prior year largely due a one-time cost in 2019 of \$20.9 million from the City of Vancouver that was excluded from the Vancouver Landfill operating rate calculations.
<i>Water Operations</i>	Water Operations' expenditures were comparable to prior year but lower than budget due the delay of some projects due to COVID-19. As well, there were some labour underspends due to operating staff vacancies, lower costs for consulting, electricity, chemicals and some delayed easement acquisition purchases. Debt servicing costs were lower than anticipated by approximately \$1.2 million for the year as a result of additional contribution to capital from the application of the 2019 operational surplus and less than planned capital expenditures, thereby lowering new debt financing. Also, in addition to debt avoidance gains, favourable terms have been experienced on some re-financing on some existing debt thereby also contributing to the favourable debt variance.
<i>Housing Rental Operations</i>	Housing expenditures were \$9.6 million lower than budget and \$7.4 million lower than prior year mainly due the decision of the Property Assessment Appeal Board's to exempt MVHC properties from paying property tax. This resulted in an expenditure refund of \$5.7 million in 2020. Lower than anticipated expenditures also occurred in the capital replacement program in 2020 (\$2.3 million) due to less than expected maintenance work due to restrictions related to COVID-19. The newly developed Heather Place A building came into operations in August 2020 which was later than expected and resulted in lower than expected operational expenses.

Expenses (continued)

<i>Regional Parks</i>	Regional Parks expenses were \$3.1 million lower than budget and slightly lower than prior year due the significantly reduced program offerings, event cancellations and filming disruptions as a result of COVID-19 pandemic, resulting in overall cost savings in salaries and consulting and contracted services.
<i>General Government Services</i>	General government services were \$550 thousand lower than expected due to staff labour vacancies and lower than anticipated meeting costs, international engagement, travel and conference costs as events were cancelled due to COVID-19 pandemic.
<i>Air Quality</i>	Air Quality expenditures were lower than budget and the prior year primarily due to the inability to commence projects because of COVID-19 restrictions.
<i>Regional Employers Services</i>	Expenditures in Regional Employers Services were \$256 thousand lower than anticipated due to labour underspends from staff vacancies and limited activity due to COVID-19 pandemic.
<i>911 Emergency Telephone System</i>	E911 expenditures were slightly lower than budget for the year primarily due to reduced E-Comm, Language Line and telephone costs. The expenditures are comparable to the prior year.
<i>Regional Planning</i>	Regional Planning ended the year slightly under expenditures primarily due to labour underspends from staff vacancies and lower than planned consulting expenditures. The expenditures were higher than prior year due to general lower staff vacancies in 2020 versus 2019.
<i>Housing Planning and Policy</i>	Housing Planning and Policy were lower than budget due to two vacant program manager positions which were filled in the latter half of 2020, leading to an underspend in salaries. Expenditures were higher than prior year due to fewer staff vacancies in 2020 versus 2019.
<i>Electoral Areas</i>	Electoral Areas expenditures were significantly lower than prior year, due to a one-time Board approved contribution in 2019 from the Community Works Fund for green infrastructure to mitigate storm water impacts at the University Endowment Lands and pedestrian and cycling improvements at Wesbrook Mall. Expenditures were slightly higher than budget as a result of higher program spending that is offset by grant revenue.
<i>Regional Global Positioning System (RGPS)</i>	The RGPS program was underspend due to lower than expected equipment purchases and consulting costs. The amount spent in 2019 is significantly higher than 2020 because the 2019 budget included a one-time approval for equipment expenditures.

Expenses (continued)

<i>Sasamat Volunteer Fire Department</i>	The Sasamat Volunteer Fire expenditures were significantly lower than budget due to COVID-19 challenges with procurement, training and travel. The budgeted \$600 thousand procurement and funding for the firefighting apparatus has been postponed to 2021 due to COVID.
<i>Regional Economic Prosperity</i>	The Regional Economic Prosperity expenditures were significantly below budget due to labour underspends from staff vacancies. Expenditures were higher than in 2019 as the prior year was the first year of the program and there were delays in start-up of the program in that year.
<i>Regional Emergency Management</i>	Regional Emergency Management's expenditures for 2020 were lower than anticipated and lower than 2019 from projects scaled back and courses cancelled due to COVID-19.
<i>Homelessness Partnering Strategy</i>	The Homelessness Partnering Strategy Program was a federally funded program that was completed in March of 2019 and therefore there were no related program costs in 2020.
<i>Corporate Program Costs</i>	Corporate Program Costs represent expenditures for centralized services such as Finance, Human Resources, External Relations, Corporate Services, Legal and Indigenous Relations. Expenditures for the programs were lower than budget and prior year mainly due to labour underspends as a result of staff vacancies and underspends on travel, training and tuition as a result of COVID-19.
<i>Building Operations</i>	Building Operations shows expenditures of \$2.3 million lower than budget and \$1.5 million lower than prior year as a result of lower than anticipated building costs due to COVID-19 pandemic.

**METRO VANCOUVER DISTRICTS
AND METRO VANCOUVER HOUSING CORPORATION
(OPERATING AS METRO VANCOUVER)**

Financial Statements

Year ended December 31, 2020

DRAFT - April 6, 2021

Consolidated Financial Statements of

**METRO VANCOUVER
REGIONAL DISTRICT**

(OPERATING AS METRO VANCOUVER)

Year ended December 31, 2020

DRAFT - April 6, 2021

METRO VANCOUVER REGIONAL DISTRICT

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December 31, 2020

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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 Performance and Audit Committee of the Board.

The external auditors, BDO Canada LLP, conduct an independent examination, in accordance with Canadian 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, 2020.

On behalf of the Metro Vancouver Regional District, Greater Vancouver Sewerage & Drainage District, Greater Vancouver Water District and Metro Vancouver Housing Corporation.

Dean Rear, Chief Financial Officer

Date: April 30, 2021

Independent Auditor's Report

To the Members of the Board of Directors of the Metro Vancouver Regional District

Opinion

We have audited the consolidated financial statements of the Metro Vancouver Regional District (the "Consolidated Entity"), which comprise the consolidated Statement of Financial Position as at December 31, 2020, 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, 2020 and the results of its operations, change in net debt, and cash flows or 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.

Emphasis of Matter - Restated Comparative Information

We draw attention to Note 18 to the financial statements, which explains that certain comparative information presented for the year ended December 31, 2019 has been restated. Our opinion is not modified in respect of this matter.

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 Group 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 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
Month day, 2020

METRO VANCOUVER REGIONAL DISTRICT

Exhibit A

Consolidated Statement of Financial Position

Year ended December 31, 2020

(in thousands of dollars)

	2020	2019 (restated note 18)
Financial Assets		
Cash and cash equivalents	\$ 271,510	\$ 96,050
Accounts receivable (note 2)	150,627	155,500
Due from TransLink and member municipalities (note 3)	1,000,799	994,708
Investments (note 4)	417,392	772,577
Debt reserve fund (note 5)	59,442	54,866
	1,899,770	2,073,701
Liabilities		
Accounts payable and accrued liabilities (note 6)	249,272	261,755
Employee future benefits (note 7)	13,369	13,841
Landfill closure and post-closure liability (note 8)	32,164	33,039
Deferred revenue and refundable deposits (note 9)	311,451	390,045
Debt reserve fund, member municipalities and TransLink (note 5)	35,603	34,082
Debt (net of sinking funds) (note 10)		
Metro Vancouver Districts and Housing Corporation	1,385,445	1,228,901
TransLink and member municipalities	990,009	983,845
Total debt	2,375,454	2,212,746
	3,017,313	2,945,508
Net Debt	(1,117,543)	(871,807)
Non-Financial Assets		
Tangible capital assets (note 11)	6,539,503	5,740,451
Inventories of supplies	10,017	7,499
Prepaid land leases (note 12)	5,257	5,452
Prepaid expenses	9,350	7,176
	6,564,127	5,760,578
Accumulated Surplus (note 13)	\$ 5,446,584	\$ 4,888,771

Contractual obligations and rights (note 14)

Contingencies (note 15)

Segmented Information (note 17)

COVID-19 Pandemic (note 19)

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, 2020

(in thousands of dollars)

	2020 Budget (note 16)	2020 Actual	2019 Actual (restated note 18)
Revenue (note 17)			
MVRD property tax requisitions	\$ 73,528	\$ 73,528	\$ 62,901
Metered sale of water	307,175	297,781	285,316
Sewerage and drainage levy	274,237	274,237	255,811
Tipping fees	105,823	100,880	105,692
Housing property rentals	40,392	41,607	40,870
BODTSS industrial charges	11,201	11,568	11,220
Development cost charges	87,412	81,653	152,389
Electricity sales	5,682	5,309	5,793
Grants and other contributions	203,538	184,641	68,881
User fees, recoveries and other revenue	27,202	33,425	104,768
Sinking fund and interest income	24,212	29,734	28,314
Sinking fund income, members and TransLink	27,611	28,078	27,127
	1,188,013	1,162,441	1,149,082
Expenses (note 17)			
Sewer operations	210,269	191,431	180,035
Waste disposal, recycling and regulatory services	106,524	95,274	129,704
Water operations	155,410	139,227	139,136
Housing rental operations	36,850	27,211	34,724
Regional parks	33,928	29,670	30,200
General government services	5,782	5,221	5,145
Air quality	9,751	9,374	9,655
Regional employers services	2,706	2,459	2,154
911 emergency telephone system	4,521	4,364	4,282
Regional planning	3,298	3,128	2,946
Housing planning and policy	1,163	881	492
Electoral areas	511	515	949
Regional global positioning system	278	204	386
Regional economic prosperity	980	206	58
Sasamat volunteer fire department	776	195	247
Regional emergency management	215	125	169
Homelessness Partnering Strategy	-	-	3,323
Corporate program costs	58,951	51,473	57,696
Building operations	18,827	15,592	18,021
Sinking fund income attributed to members and TransLink	27,611	28,078	27,127
	678,351	604,628	646,449
Annual surplus	509,662	557,813	502,633
Accumulated surplus, beginning of year	4,875,761	4,888,771	4,386,138
Accumulated surplus, end of year (note 13)	\$ 5,385,423	\$ 5,446,584	\$ 4,888,771

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, 2020

(in thousands of dollars)

	2020 Budget (note 17)	2020 Actual	2019 Actual (restated note 18)
Annual surplus	\$ 509,662	\$ 557,813	\$ 502,633
Change in tangible capital assets			
Acquisition of tangible capital assets	(1,419,297)	(881,579)	(728,285)
Amortization of tangible capital assets	83,695	82,429	82,197
Net book value of tangible capital assets disposed	-	98	3,460
	(1,335,602)	(799,052)	(642,628)
Change in other non-financial assets			
Acquisition of prepaid expenses	-	(9,350)	(6,647)
Use of prepaid expenses	-	7,176	5,783
Amortization of prepaid land leases	195	195	195
Acquisition of inventories of supplies	-	(10,017)	(7,499)
Consumption of inventories of supplies	-	7,499	7,483
	195	(4,497)	(685)
Change in net debt	(825,745)	(245,736)	(140,680)
Net debt, beginning of year	(871,807)	(871,807)	(731,127)
Net debt, end of year	\$ (1,697,552)	\$ (1,117,543)	\$ (871,807)

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, 2020

(in thousands of dollars)

	2020	2019 (restated note 18)
Cash provided by (used in):		
Operating transactions:		
Annual surplus	\$ 557,813	\$ 502,633
Items not involving cash		
Amortization of tangible capital assets	82,429	82,197
Amortization of prepaid land leases	195	195
Sinking fund income	(50,917)	(48,045)
Debt reserve fund income	(1,173)	(1,262)
Accrued interest and unamortized premium or discount	(1,135)	(1,645)
Gain on disposal of tangible capital assets and asset held for sale	(481)	(60,032)
Employee future benefit expense	2,929	2,355
Change in landfill closure and post-closure liability	(874)	1,329
Change in non-cash financial assets and liabilities		
Accounts receivable	4,872	(43,738)
Due from Translink and member municipalities	(6,091)	(13,495)
Accounts payable and accrued liabilities	(12,483)	72,456
Employee future benefits paid	(3,401)	(1,995)
Deferred revenue and refundable deposits	(78,594)	(144,546)
Debt reserve fund, member municipalities and TransLink	1,521	(405)
Inventories of supplies	(2,518)	(16)
Prepaid expenses	(2,174)	(864)
Net change in cash from operating transactions	489,918	345,122
Capital transactions:		
Proceeds on sale of tangible capital assets	579	86,343
Acquisition of tangible capital assets	(881,579)	(728,285)
Net change in cash from capital transactions	(881,000)	(641,942)
Investing transactions:		
Acquisition of investments	(424,726)	(414,500)
Investment maturities	781,046	548,658
Net change in cash from investing transactions	356,320	134,158
Financing transactions:		
Debenture debt and mortgages issued	367,455	203,643
Debt reserve fund issuances	(3,541)	(2,021)
Debt reserve fund maturity	139	3,104
Sinking fund payments	(139,563)	(135,475)
Principal repayments on housing mortgages and serial debt maturity	(14,268)	(8,707)
Sinking fund retirement	7,450	(107,978)
Debenture debt maturity	(7,450)	107,978
Net change in cash from financing transactions	210,222	60,544
Net change in cash and cash equivalents	175,460	(102,118)
Cash and cash equivalents, beginning of year	96,050	198,168
Cash and cash equivalents, end of year	\$ 271,510	\$ 96,050

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, 2020

(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 (“PSAS”). Significant accounting policies adopted by the District are as follows:

Government Reporting Entity

The consolidated financial statements reflect 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 councilors 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 councilors 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 councilors 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

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 2

Year ended December 31, 2020

(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 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, 2020

(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 and market value.

Investments Investments consist of both long and short-term instruments and are recorded at amortized cost using straight-line method. Short-term investments consist primarily of money market instruments with an original maturity greater than ninety days at the date of acquisition but less than one year. Long-term investments consist primarily of bonds and fixed income securities with maturity greater than one year at the date of acquisition.

**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.

**Landfill
Closure and
Post-Closure
Liability** The estimated present value of landfill closure and post-closure costs 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 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 4

Year ended December 31, 2020

(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. 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 – 35
Parks	50
Watershed	25
Corporate – Head Office	40
Infrastructure	
Sewer	
Wastewater treatment, pumping stations	50
Interceptors and trunk sewer, drainage	100
Solid Waste	25 – 30
Water	
Dams, reservoirs	150
Supply mains	100
Distribution systems, drinking water treatment	50
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 5

Year ended December 31, 2020

(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 put in service 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 put into productive use.

b. Contributions of tangible capital assets

Contributions of tangible capital assets are recorded at their 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. 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 revenue 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.

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 17.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 6

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

1. Significant Accounting Policies (continued)

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 (note 6).

Use of Estimates

The preparation of these 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 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 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, the employee future benefits liability, the amortization rates for tangible capital assets, the landfill closure and post-closure liability and the assessment of the outcome of contingent liabilities.

2. Accounts Receivable

	2020	2019
GVWD	\$ 52,651	\$ 61,093
GVS&DD	85,458	81,010
MVHC	6,227	417
MVRD	6,291	12,980
	\$ 150,627	\$ 155,500

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 7

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

3. Due from TransLink and Member Municipalities

The District is reimbursed for amounts paid to the 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 10). The amount recoverable is net of sinking funds and includes accrued interest as follows:

	Net Debt Recoverable	Accrued Interest	2020	2019
TransLink	\$ 331,969	\$ 5,346	\$ 337,315	\$ 387,780
Member Municipalities	658,040	5,444	663,484	606,928
	\$ 990,009	\$ 10,790	\$ 1,000,799	\$ 994,708

4. Investments

	Yields	Maturity Dates	2020	2019
Bonds:				
Government	1.75 - 3.11%	June 2021 - March 2031	\$ 89,081	\$ 89,081
Corporate	1.81 - 3.20%	January 2021 - March 2028	95,513	250,733
Unamortized premium			1,898	763
			186,492	340,577
Term deposits	0.90 - 2.50%	January 2021 - September 2021	85,500	280,000
GICs	0.75 - 3.12%	January 2021 - August 2024	145,400	152,000
Total			\$ 417,392	\$ 772,577

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 at December 31, 2020 was \$429,413,509 (2019 - \$782,198,600).

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 8

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

5. 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 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, 2020, \$105,080,232 (2019 - \$97,250,040) in callable demand notes were outstanding and have not been recorded in the statement of financial position.

	2020	2019
Cash deposits held by MFA on behalf of:		
TransLink and member municipalities	\$ 35,603	\$ 34,082
Metro Vancouver Districts	23,839	20,784
	\$ 59,442	\$ 54,866

6. Accounts Payable and Accrued Liabilities

	2020	2019
Trade accounts	\$ 128,855	\$ 174,718
Construction holdbacks	78,736	53,880
Accrued interest on debt	22,098	22,108
Wage accruals	16,702	10,804
Contaminated sites (a)	2,881	245
	\$ 249,272	\$ 261,755

- a) The District accrued \$2,881,000 (2019 - \$245,000) for estimated current costs to remediate contaminated soils at its properties within the GVS&DD and GVWD. The remediation of the sites identified in 2019 were completed in 2020. Work is underway on sites identified in 2020 and are expected to be completed in 2021.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 9

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

7. 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, 2019, with results projected to December 31, 2020.

Information about liabilities for the District's employee benefit plans is as follows:

	2020	2019
Accrued benefit obligation:		
Balance, beginning of year	\$ 20,844	\$ 17,255
Current service cost	1,493	1,208
Interest cost	514	540
Benefits paid	(3,401)	(1,995)
Workers compensation top-up expense	45	115
Actuarial loss	867	3,721
Accrued benefit obligation, end of year	20,362	20,844
Unamortized actuarial loss	(6,993)	(7,003)
Accrued benefit liability, end of year	\$ 13,369	\$ 13,841

	2020	2019
Employee future benefit expense:		
Current service cost	\$ 1,493	\$ 1,208
Interest cost	514	540
Workers compensation top-up expense	45	115
Amortization of the actuarial loss	877	492
	\$ 2,929	\$ 2,355

The significant actuarial assumptions adopted in measuring the District's accrued benefit obligation are as follows:

	2020	2019
Discount rate	1.80%	2.50%
Expected future inflation rate	2.00%	2.00%
Expected average remaining service period	11.3 years	11.3 years

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 10

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

8. Landfill Closure and Post-Closure Liability

The District is responsible for its share of closure and post-closure costs at four landfill sites as detailed below.

- a) The Vancouver landfill is located in Delta, BC. In accordance with an agreement with the City of Vancouver, 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:

	2020	2019
Landfill closure and post closure liability	\$ 32,164	\$ 33,039

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:

	2020	2019
Current actual utilization (in 000's tonnes)	21,795	21,139
Expected utilization at closure (in 000's tonnes)	27,987	25,857
Expected remaining capacity (in 000's tonnes)	6,192	4,718
Permitted capacity (in 000's tonnes)	33,039	33,039
Future costs (in \$000's)	\$ 203,768	\$ 209,420
Present value of future costs (in \$000's)	\$ 120,497	\$ 123,050
Proportionate share of liability	34.30%	32.80%
Utilization of total capacity, end of year	77.88%	81.76%
Discount rate	2.68%	2.89%
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 11

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

8. Landfill Closure and Post-Closure Liability (continued)

- b) The Cache Creek landfill is located in the Village of Cache Creek, BC. The landfill permit obligates the Village of Cache Creek and a third party service provider to undertake closure and post-closure activities. The District, in accordance with an agreement with the Village, was required to contribute quarterly to a trust fund, held with the Province of British Columbia, to a Post Closure Maintenance and Repair Fund at rates consistent with the operational certificate for the landfill. The agreement indemnifies the Village for any post closure liabilities not covered by this fund. At December 31, 2020, the amortized book value of the trust was \$15,519,407 (2019 - \$16,091,490), which approximates the post-closure liability.

The Cache Creek landfill was closed December 2016. The actual utilization at closure was 10,319 thousand tonnes and the permitted capacity was 10,372 thousand tonnes. The post-closure period is expected to be 30 years. The present value of District's estimated future post-closure liability is sufficiently funded by the trust.

- c) The Coquitlam and Port Mann landfills were closed in 1983 and 1997, respectively, and there are no further closure and post-closure liabilities.

9. Deferred Revenue and Refundable Deposits

The deferred revenue reported on the Consolidated Statement of Financial Position consists of the following:

	2020	2019 (restated – note 18)
MVHC externally restricted funds from BCHMC(a)		
i) Rental operations	\$ 46	\$ 132
ii) Replacement projects	3,246	2,373
	3,292	2,505
GVS&DD development cost charges (b)	213,143	227,551
Provincial grant to fund capital expenditures (c)	88,525	153,675
Facility rental security deposits	3,935	2,377
Other	2,556	3,937
Total	\$ 311,451	\$ 390,045

- (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 BCHMC (Homes BC, Seniors and Section 95 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.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 12

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

9. Deferred Revenue and Refundable Deposits (continued)

- ii) Replacement Projects: Under operating agreements entered into with Canada Mortgage and Housing Corporation ("CMHC") and administered by BCHMC (Homes BC, Seniors and Section 95 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) As at December 31, 2020, due to the maturity of related mortgages, there were no remaining properties within MVHC's Section 95 portfolio. All previously restricted funds related to these programs have been recognized in revenue.
- (b) The GVS&DD Act restricts the District to applying money raised from development cost charges to funding sewer capital projects, including the repayment of debt raised to fund such projects.
- (c) 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 Lions Gate Wastewater Treatment Plant Facility. During 2020, \$67.970 million (2019 - \$51.79 million) was applied against the capital project.

Continuity of deferred revenue and refundable deposits is as follows:

	2020	2019 (restated - note 18)
Balance, beginning of year	\$ 390,045	\$ 534,591
Externally restricted contributions received:		
GVS&DD development cost charges	62,871	60,239
MVHC restricted funds	2,166	11,878
Interest earned	7,194	13,203
Total contributions received	72,231	85,320
Contributions used and recognized in revenue	(151,250)	(229,916)
Net change in externally restricted contributions	(79,019)	(144,596)
Change in deposits and other deferred revenues	425	50
	(78,594)	(144,546)
Balance, end of year	\$ 311,451	\$ 390,045

10. Debt

- a) The District serves as the borrowing conduit between member municipalities (excluding the City of Vancouver) and the Municipal Finance Authority of British Columbia (MFA). The GVS&DD and GVWD also access MFA through the MVRD. Prior to 2007, the District also served as the borrowing conduit for the Greater Vancouver Transportation Authority (GVTA), 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.

Metro Vancouver Regional District

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 13

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

10. Debt (continued)

- b) 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.
- c) Debt servicing requirements comprising sinking fund contributions, serial and mortgage principal repayments and interest are funded as incurred by revenue earned during the year.
- d) 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.
- e) 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 3). 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.

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	Net Debt 2020	Net Debt 2019
GVS&DD	\$ 911,000	\$ 131,553	\$ 779,447	\$ 626,290
GVWD	1,092,631	534,894	557,737	558,499
MVHC	48,261	-	48,261	44,112
	2,051,892	666,447	1,385,445	1,228,901
TransLink	865,193	533,224	331,969	382,304
Member Municipalities	840,285	182,245	658,040	601,541
	1,705,478	715,469	990,009	983,845
	\$ 3,757,370	\$ 1,381,916	\$ 2,375,454	\$ 2,212,746

- f) Debt (net of sinking funds) reported on the statement of financial position is comprised of the following and includes varying maturities up to 2050, with interest rates ranging from 0.30% to 5.95%.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 14

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

10. Debt (continued)

Issue number	Interest rate - %	Maturity date	Authorized to be issued	Debt Outstanding	
				2020	2019
Sinking Fund Agreements					
67	1.75	November 5, 2022	15,000	\$ 15,000	\$ 15,000
72	1.67-2.10	June 1, 2020	55,690	-	2,650
73	1.67-2.10	December 1, 2020	61,200	-	1,200
74	1.75	June 1, 2021	168,123	54,000	54,000
75	1.75	December 1, 2021	62,405	18,080	18,080
77	1.75	June 1, 2022	100,100	84,100	84,100
78	2.25	December 3, 2022	89,252	1,252	1,252
79	5.95	June 3, 2023	74,025	225	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	1.80-4.77	October 13, 2025	10,900	2,300	5,900
96	4.61	April 2, 2026	50,000	50,000	50,000
97	1.75-4.93	April 19, 2036	175,000	173,000	173,000
99	1.75-4.99	October 19, 2026	66,300	66,300	66,300
100	4.59	October 19, 2026	200,000	180,000	180,000
102	2.25-5.09	December 1, 2027	436,395	369,395	369,395
103	2.65	April 23, 2023	40,000	40,000	40,000
104	2.90	November 20, 2028	56,281	56,281	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 - 4.50	April 8, 2030	60,730	60,730	60,730
112	1.28 - 3.73	October 6, 2035	74,775	74,775	74,775
116	4.20	April 4, 2036	152,292	152,292	152,292
118	3.40	April 11, 2042	96,000	96,000	96,000
120	0.30	June 29, 2022	2,000	2,000	2,000
121	2.90	October 4, 2037	74,961	72,286	72,286
124	3.15	April 8, 2043	3,000	3,000	3,000
126	3.85	September 26, 2043	155,209	155,209	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	-
151	1.28	June 1, 2050	185,987	185,987	-
Total sinking fund agreements (carried forward)			\$ 4,291,421	\$ 3,675,408	\$ 3,328,738

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 15

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

10. Debt (continued)

Issue number	Interest rate - %	Maturity date	Authorized to be issued	Debt Outstanding	
				2020	2019
Total sinking fund agreements (brought forward)			\$ 4,291,421	\$ 3,675,408	\$ 3,328,738
Serial Debt					
93	5.10 - 5.65	April 7, 2027	79,014	26,438	30,621
111	3.35	October 1, 2025	3,000	1,169	1,380
114	3.65	March 29, 2026	6,301	2,932	3,362
122	2.00	November 1, 2032	1,999	1,199	1,299
123	2.00	March 28, 2033	3,142	1,964	2,121
Total serial debt			93,456	33,702	38,783
Total debenture debt			\$ 4,384,877	\$ 3,709,110	\$ 3,367,521
MVHC Mortgages					
	1.03-4.87	January 2020 to October 2038		58,362	48,452
	Forgivable loan from BC Housing			-	6,685
	Less MVRD financed mortgages			(10,102)	(11,025)
Total MVHC mortgages				48,260	44,112
Total debt				3,757,370	3,411,633
Less sinking funds				(1,381,916)	(1,198,887)
Total debt, net of sinking funds			\$	2,375,454	\$ 2,212,746

- f) 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
2021	\$ 169,124	\$ 58,281	\$ 110,843
2022	160,522	56,239	104,283
2023	153,345	53,632	99,713
2024	149,002	53,771	95,231
2025	134,286	46,984	87,302
Thereafter	899,133	326,038	573,095
	1,665,412	594,945	1,070,467
Estimated sinking fund income	710,042	395,064	314,978
Total	\$ 2,375,454	\$ 990,009	\$ 1,385,445

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 16

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

11. Tangible Capital Assets

Year ended December 31, 2020

Year ended December 31, 2020									
	Cost			Balance at December 31, 2020	Accumulated Amortization			Balance at December 31, 2020	Net Book Value December 31, 2020
	Balance at December 31, 2019	Additions	Disposals		Balance at December 31, 2019	Disposals	Amortization Expense		
Land									
Sewer and Drainage District	\$ 89,790	\$ 26,260	\$ -	\$ 116,050	\$ -	\$ -	\$ -	\$ -	\$ 116,050
Water District	44,704	-	-	44,704	-	-	-	-	44,704
Regional District	886,258	3,500	-	889,758	-	-	-	-	889,758
Metro Vancouver Housing Corporation	52,274	-	-	52,274	-	-	-	-	52,274
	1,073,026	29,760	-	1,102,786	-	-	-	-	1,102,786
Infrastructure									
Sewer and Drainage District	1,541,087	80,027	-	1,621,114	646,804	-	29,543	676,347	944,767
Water District	2,116,289	1,712	-	2,118,001	369,121	-	33,568	402,689	1,715,312
Regional District	123,015	3,128	(562)	125,581	58,132	(562)	6,197	63,767	61,814
	3,780,391	84,867	(562)	3,864,696	1,074,057	(562)	69,308	1,142,803	2,721,893
Buildings									
Water District	213,924	2,552	-	216,476	13,788	-	5,436	19,224	197,252
Regional District	26,880	-	-	26,880	9,277	-	540	9,817	17,063
Metro Vancouver Housing Corporation	192,173	28,402	-	220,575	172,633	-	1,420	174,053	46,522
	432,977	30,954	-	463,931	195,698	-	7,396	203,094	260,837
Vehicles									
Regional District	31,462	2,103	(2,472)	31,093	22,281	(2,381)	2,794	22,694	8,399
	31,462	2,103	(2,472)	31,093	22,281	(2,381)	2,794	22,694	8,399
Machinery, equipment, furniture & fixtures									
Sewer and Drainage District	8,310	489	-	8,799	6,928	-	462	7,390	1,409
Water District	12,730	468	-	13,198	5,379	-	1,016	6,395	6,803
Regional District	20,232	616	(74)	20,774	16,642	(67)	987	17,562	3,212
Metro Vancouver Housing Corporation	6,462	436	(434)	6,464	4,688	(434)	466	4,720	1,744
	47,734	2,009	(508)	49,235	33,637	(501)	2,931	36,067	13,168
Construction in progress									
Sewer and Drainage District	1,196,784	510,551	-	1,707,335	-	-	-	-	1,707,335
Water District	474,756	242,505	-	717,261	-	-	-	-	717,261
Regional District	3,696	1,243	-	4,939	-	-	-	-	4,939
Metro Vancouver Housing Corporation	25,298	(22,413)	-	2,885	-	-	-	-	2,885
	1,700,534	731,886	-	2,432,420	-	-	-	-	2,432,420
	\$ 7,066,124	\$ 881,579	\$ (3,542)	\$ 7,944,161	\$ 1,325,673	\$ (3,444)	\$ 82,429	\$ 1,404,658	\$ 6,539,503
Totals 2020									
Sewer and Drainage District	\$ 2,835,971	\$ 617,327	-	\$ 3,453,298	\$ 653,732	\$ -	\$ 30,005	\$ 683,737	\$ 2,769,561
Water District	2,862,403	247,237	-	3,109,640	388,288	-	40,020	428,308	2,681,332
Regional District	1,091,543	10,590	(3,108)	1,099,025	106,332	(3,010)	10,518	113,840	985,185
Metro Vancouver Housing Corporation	276,207	6,425	(434)	282,198	177,321	(434)	1,886	178,773	103,425
	\$ 7,066,124	\$ 881,579	\$ (3,542)	\$ 7,944,161	\$ 1,325,673	\$ (3,444)	\$ 82,429	\$ 1,404,658	\$ 6,539,503

Write offs related to discontinued projects were \$nil in 2020 (2019 - \$3,424,000)

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 17

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

11. Tangible Capital Assets (continued)

Year ended December 31, 2019

	Cost			Balance at December 31, 2019	Accumulated Amortization			Balance at December 31, 2019	Net Book Value December 31, 2019
	Balance at December 31, 2018	Additions	Disposals		Balance at December 31, 2018	Disposals	Amortization Expense		
Land									
Sewer and Drainage District	\$ 89,790	\$ -	\$ -	\$ 89,790	\$ -	\$ -	\$ -	\$ -	\$ 89,790
Water District	44,704	-	-	44,704	-	-	-	-	44,704
Regional District	875,021	11,237	-	886,258	-	-	-	-	886,258
Metro Vancouver Housing Corporation	52,274	-	-	52,274	-	-	-	-	52,274
	1,061,789	11,237	-	1,073,026	-	-	-	-	1,073,026
Infrastructure									
Sewer and Drainage District	1,522,588	24,502	(6,003)	1,541,087	620,595	(2,702)	28,911	646,804	894,283
Water District	2,100,749	15,663	(123)	2,116,289	335,896	-	33,225	369,121	1,747,168
Regional District	109,608	6,218	7,189	123,015	55,199	(3,464)	6,397	58,132	64,883
	3,732,945	46,383	1,063	3,780,391	1,011,690	(6,166)	68,533	1,074,057	2,706,334
Buildings									
Sewer and Drainage District	-	-	-	-	-	-	-	-	-
Water District	213,557	367	-	213,924	8,393	-	5,395	13,788	200,136
Regional District	26,880	-	-	26,880	8,731	-	546	9,277	17,603
Metro Vancouver Housing Corporation	192,173	-	-	192,173	170,920	-	1,713	172,633	19,540
	432,610	367	-	432,977	188,044	-	7,654	195,698	237,279
Vehicles									
Regional District	31,044	1,926	(1,508)	31,462	20,777	(1,472)	2,976	22,281	9,181
	31,044	1,926	(1,508)	31,462	20,777	(1,472)	2,976	22,281	9,181
Machinery, equipment, furniture & fixtures									
Sewer and Drainage District	8,089	224	(3)	8,310	6,371	(3)	560	6,928	1,382
Water District	12,395	335	-	12,730	4,401	-	978	5,379	7,351
Regional District	19,913	319	-	20,232	15,541	-	1,101	16,642	3,590
Metro Vancouver Housing Corporation	6,312	701	(551)	6,462	4,844	(551)	395	4,688	1,774
	46,709	1,579	(554)	47,734	31,157	(554)	3,034	33,637	14,097
Construction in progress									
Sewer and Drainage District	772,131	424,653	-	1,196,784	-	-	-	-	1,196,784
Water District	247,973	226,783	-	474,756	-	-	-	-	474,756
Regional District	13,823	526	(10,653)	3,696	-	-	-	-	3,696
Metro Vancouver Housing Corporation	10,467	14,831	-	25,298	-	-	-	-	25,298
	1,044,394	666,793	(10,653)	1,700,534	-	-	-	-	1,700,534
	\$ 6,349,491	\$ 728,285	\$ (11,652)	\$ 7,066,124	\$ 1,251,668	\$ (8,192)	\$ 82,197	\$ 1,325,673	\$ 5,740,451
Totals 2019									
Sewer and Drainage District	\$ 2,392,598	\$ 449,379	\$ (6,006)	\$ 2,835,971	\$ 626,966	\$ (2,705)	\$ 29,471	\$ 653,732	\$ 2,182,239
Water District	2,619,378	243,148	(123)	2,862,403	348,690	-	39,598	388,288	2,474,115
Regional District	1,076,289	20,226	(4,972)	1,091,543	100,248	(4,936)	11,020	106,332	985,211
Metro Vancouver Housing Corporation	261,226	15,532	(551)	276,207	175,764	(551)	2,108	177,321	98,886
	\$ 6,349,491	\$ 728,285	\$ (11,652)	\$ 7,066,124	\$ 1,251,668	\$ (8,192)	\$ 82,197	\$ 1,325,673	\$ 5,740,451

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 18

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

12. Prepaid Land Leases

	2020	2019
Balance, beginning of year	\$ 5,452	\$ 5,647
Amortization	(195)	(195)
Balance, end of year	\$ 5,257	\$ 5,452

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

13. Accumulated Surplus

Accumulated surplus consists of individual fund surplus and reserves as follows:

	2020	2019 (restated - note 18)
Reserves	\$ 325,079	\$ 273,140
Capital fund balance	(32,553)	104,081
Investment in tangible capital assets	5,154,058	4,511,550
Total	\$ 5,446,584	\$ 4,888,771

Capital fund balance represents the future expected level of funding required or accumulated.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 19

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

13. Accumulated Surplus (continued)

The reserves are classified as either operating, discretionary or statutory and are presented in the following schedules:

	December 31, 2019 (restated note 18)	Interest	Annual Operating Surplus	Transfers	Contributions from (to) Operations	Contributions to Capital	December 31, 2020
Reserve funds							
Operating Reserves							
Metro Vancouver Regional District							
Air Quality	\$ 1,176	\$ 22	\$ 692	\$ (687)	\$ -	\$ -	\$ 1,203
E911 Emergency Telephone Service	338	6	73	(122)	-	-	295
Electoral Area Services	21	-	-	1	-	-	22
General Government	6,326	118	3,417	(6,039)	-	-	3,822
Housing Planning and Policy	52	1	113	-	(13)	-	153
Regional Employer Services	633	12	256	(498)	(128)	-	275
Regional Emergency Management	24	-	59	(13)	-	-	70
Regional Geospatial Reference System	96	2	79	-	(81)	-	96
Regional Parks	2,217	40	1,258	(726)	-	-	2,789
Regional Planning	2,165	40	188	(2,012)	-	-	381
Sasamat Fire Protection Service	21	-	56	(9)	-	-	68
West Nile Virus	355	7	-	-	-	-	362
MVRD operating reserves	13,424	248	6,191	(10,105)	(222)	-	9,536
Greater Vancouver Water District							
Water Services	24,293	449	1,674	-	(239)	(6,234)	19,943
GVWD operating reserves	24,293	449	1,674	-	(239)	(6,234)	19,943
Greater Vancouver Sewerage and Drainage District							
Liquid Waste Services	26,002	479	4,534	(400)	(716)	(7,880)	22,019
Solid Waste Services	140	7	14,452	7,000	-	-	21,599
GVS&DD operating reserves	26,142	486	18,986	6,600	(716)	(7,880)	43,618
MVHC Operating Reserves	15,380	281	16,375	27	-	-	32,062
Total Operating Reserves	79,239	1,464	43,226	(3,478)	(1,177)	(14,114)	105,160
Discretionary Reserves							
Metro Vancouver Regional District							
Air Quality	1,841	33	-	687	(846)	-	1,715
Electoral Area Service	1,804	33	(86)	(132)	(51)	-	1,568
E911 Emergency Telephone Service	463	9	-	122	-	-	594
General Government	1,276	24	-	6,039	(151)	-	7,188
Labour Relations	1,765	33	-	498	-	-	2,296
Regional Emergency Management	315	6	-	13	-	-	334
Regional Planning	802	15	-	2,012	(227)	-	2,602
Regional Parks	-	-	-	200	-	-	200
Centralized Support	21,819	406	4,757	-	(5,579)	-	21,403
MVRD discretionary reserves	30,085	559	4,671	9,439	(6,854)	-	37,900
Greater Vancouver Sewerage and Drainage District							
Biosolids Inventory	14,635	273	-	-	-	-	14,908
Liquid Waste General Debt Reserve Fun	2,060	38	-	-	-	-	2,098
Lions Gate Contingency	1,446	27	-	-	-	-	1,473
Drainage General	4,795	90	-	400	(54)	-	5,231
Solid Waste General	32,903	450	-	(7,000)	-	-	26,353
Landfill Post Closure	10,972	204	-	-	-	-	11,176
GVS&DD discretionary reserves	66,811	1,082	-	(6,600)	(54)	-	61,239
Metro Vancouver Housing Corporation							
MVHC Capital Development	7,256	176	-	(27)	-	7,346	14,751
MVHC Capital Replacement	4,500	77	-	-	(3,935)	-	642
MVHC discretionary reserves	11,756	253	-	(27)	(3,935)	7,346	15,392
Total Discretionary Reserves	108,652	1,894	4,671	2,812	(10,843)	7,346	114,531
Operating and Discretionary Reserves (carried forward)	\$ 187,891	\$ 3,358	\$ 47,897	\$ (666)	\$ (12,021)	\$ (6,768)	\$ 219,692

Metro Vancouver Regional District

METRO VANCOUVER REGIONAL DISTRICT

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Year ended December 31, 2020

(tabular amounts in thousands of dollars)

13. Accumulated Surplus (continued)

	December 31, 2019 (restated note 18)	Interest	Annual Operating Surplus	Transfers	Contributions from (to) Operations	Contributions to Capital	December 31, 2020
Operating and Discretionary Reserves							
Reserves (brought forward)	\$ 187,891	\$ 3,358	\$ 47,897	\$ (666)	\$ (12,021)	\$ (6,768)	\$ 219,692
Statutory Reserves							
Metro Vancouver Regional District							
Electoral Area Community Works	169	5	-	131	130	-	435
Electoral Area Election	-	-	-	-	30	-	30
MVRD Sustainability Innovation Fund	12,048	226	-	-	37	-	12,311
Grants Reserve Fund	2,271	101	-	-	(140)	-	2,232
Housing Planning and Policy	2,249	42	-	-	813	-	3,104
Housing Planning and Policy Development	-	-	-	-	4,000	-	4,000
Regional Geospatial Reference System	918	17	-	-	134	-	1,069
Regional Parks Infrastructure	4,217	94	-	526	1,824	(1,110)	5,551
Parkland Acquisition	11,521	248	-	-	-	(3,500)	8,269
Parkland Acquisition and Development	-	22	-	-	11,570	-	11,592
Delta Airpark	105	2	-	-	29	-	136
Regional Parks Legacy	2,697	50	-	-	(56)	-	2,691
Sasamat Fire Protection Services	834	16	-	9	92	-	951
Corporate Self Insurance	1,484	22	-	-	(256)	-	1,250
Corporate Fleet	14,395	268	5,066	-	-	(1,643)	18,086
MVRD statutory reserves	52,908	1,113	5,066	666	18,207	(6,253)	71,707
Greater Vancouver Water District							
Laboratory Equipment	691	13	-	-	46	-	750
Water Services Sustainability Innovation Fund	13,121	248	-	-	532	-	13,901
GVWD statutory reserves	13,812	261	-	-	578	-	14,651
Greater Vancouver Sewerage and Drainage District							
Liquid Waste Laboratory Equipment	687	14	-	-	827	-	1,528
Liquid Waste Services Sustainability Innovation Fund	17,843	339	-	-	(680)	-	17,502
GVS&DD statutory reserves	18,530	353	-	-	147	-	19,030
Total Statutory Reserves	85,250	1,727	5,066	666	18,932	(6,253)	105,388
Total Reserves	\$ 273,141	\$ 5,085	\$ 52,963	\$ -	\$ 6,911	\$ (13,021)	\$ 325,079

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 21

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

13. Accumulated Surplus (continued)

Investment in tangible capital assets is calculated as follows:

	2020	2019
Tangible capital assets	\$ 6,539,503	\$ 5,740,451
Amount financed by:		
Long-term debt, net of members, TransLink and sinking fund	(1,385,445)	(1,228,901)
	\$ 5,154,058	\$ 4,511,550
Change in the investment in tangible capital assets		
Acquisition of tangible capital assets	\$ 881,579	\$ 728,285
Amortization of tangible capital assets	(82,429)	(82,197)
Disposal of tangible capital assets (net of book value)	(98)	(3,460)
	799,052	642,627
Less financing (net of members and TransLink debt)		
Sinking fund and debt retirement	(89,746)	(86,655)
Sinking fund and debt retirement income	(22,859)	(20,989)
Debenture debt issued	278,335	109,548
Payment of long-term debt	(9,186)	(3,755)
	156,544	(1,873)
Change in investment in tangible capital assets	642,508	644,500
Investment in tangible capital assets, beginning of year	4,511,550	3,867,050
Investment in tangible capital assets, end of year	\$ 5,154,058	\$ 4,511,550

14. Contractual Obligations and Rights

a) Contractual Obligations

- i) As at December 31, 2020, the District had the following commitments relating to projects in progress.

	Authorized and Outstanding Projects	Expended at December 31	Total 2020	Total 2019
GVS&DD	\$ 3,534,847	\$ (1,828,131)	\$ 1,706,716	\$ 1,974,618
GVWD	2,298,312	(903,211)	1,395,101	985,846
MVRD	20,737	(5,029)	15,708	1,069
MVHC	82,700	(2,885)	79,815	85,901
Total	\$ 5,936,596	\$ (2,739,256)	\$ 3,197,340	\$ 3,047,434

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 22

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

14. Contractual Obligations and Rights (continued)

- 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 two agreements, with annual payments to perpetuity, with adjustments annually for CPI. Estimated payments over the next ten years are as follows:

	Amount
2021	\$ 3,353
2022	2,822
2023	2,733
2024	2,133
2025	2,109
2026 - 2030	11,060
Total	\$ 24,210

b) Contractual Rights:

The District is party to several property lease agreements that are anticipated to provide it with future revenues. These agreements are with third parties with varying terms to 2027. Amounts anticipated to be received over the future years are as follows:

	Amount
2021	\$ 7,613
2022	6,920
2023	6,896
2024	6,943
2025	6,798
Thereafter	16,902
Total	\$ 52,072

15. Contingencies

Lawsuits

As at December 31, 2020, 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. None of these lawsuits are anticipated to result in a material loss to the District. 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.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 23

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

15. Contingencies (continued)

Municipal Pension Plan

The District and its employees contribute to the 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, 2019, the plan has about 213,000 active members and approximately 106,000 retired members. Active members include approximately 41,000 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, 2018, indicated a \$2,866 million funding surplus for basic pension benefits on a going concern basis.

The District paid \$14.3 million for employer contributions (2019 - \$14.1 million) while employees contributed \$12.6 million (2019 - \$12.4 million) to the Plan in fiscal 2020.

The next valuation will be as at December 31, 2021 with results available in 2022.

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 24

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

15. 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 5). 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

Prior to 2019, MVHC received funding of \$6.7 million 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, 2020). 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.

First Nations Negotiations

The District is currently involved in negotiations with First Nations regarding compensation for the use of their land on which the District's assets reside. The compensation associated with these negotiations cannot be reasonably determined at this times and therefore no liabilities have been recorded at December 31, 2020.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 25

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

16. Budget Information

The annual budget presented in these financial statements is based upon the 2020 operating and capital budgets approved by the District's Board in October 2019, with additional approval in May 2020 for adjustments to the budget as a result of the 2019 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 \$1.42 million were included in the capital budget approved by the Board.

	2020 Budget	2019 Budget
Budgeted annual surplus per Exhibit B - Statement of Operations	\$ 509,662	\$ 438,554
Additional transfers from reserves, approved by Board	(1,993)	(17)
Adjusted annual surplus, based on October approved budget	507,669	438,537
Items not included in the operating budget		
Amortization of tangible capital assets	83,890	81,486
Contributions from deferred revenue	(188,400)	(101,151)
Sinking fund and debt retirement income	(19,380)	(18,176)
Development cost charge revenue	(53,240)	(122,000)
MVHC development grant	(8,500)	-
Reserve interest	(4,867)	(5,175)
Items included in budget but not in financial statements		
Sinking fund and debt retirement payments	(93,170)	(91,334)
Transfers to capital fund	(208,649)	(176,774)
Transfers from reserve funds	20,185	16,744
Transfer to reserve funds	(35,538)	(22,157)
Annual surplus per approved budget	-	-

17. 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 \$17.63 million (2019 - \$22.81 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.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 26

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

17. Segmented Information and Expenses by Object (continued)

The legal entities disclosed in the segmented information, along with the service areas provided are as follows:

MVRD

Regional Parks

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.

General Government

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.

Air Quality

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.

Regional Employee Services

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.

911 Emergency Telephone Service

The District contracts with E-Comm Corporation to provide 9-1-1 service for all municipalities within the region as well as the community of Whistler and the Sunshine Coast Regional District.

Regional Planning

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.

Housing Planning and Policy

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).

Regional Emergency Management

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.

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 27

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

17. Segmented Information and Expenses by Object (continued)

MVRD (continued)

Electoral Areas 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 9-1-1 emergency telephone, air quality, labour relations, regional parks, strategic planning and general government.

Regional Global Positioning System 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.

Sasamat Volunteer Fire Department 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.

GVSD

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 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 28

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

17. Segmented Information and Expenses by Object (continued)

a) Total Consolidated

	Other Districts (note 17(b))	Regional District (note 17(c))	Metro Vancouver Housing Corporation	Inter-district Adjustments	Consolidated Actual 2020	Consolidated Budget 2020	Consolidated Actual 2019 (restated note 18)
Revenue							
MVRD property tax requisitions	\$ -	\$ 73,528	\$ -	\$ -	\$ 73,528	\$ 73,528	\$ 62,901
Metered sale of water	297,781	-	-	-	297,781	307,175	285,316
Sewerage and drainage levy	274,237	-	-	-	274,237	274,237	255,811
Tipping fees	100,880	-	-	-	100,880	105,823	105,692
Housing property rentals	-	-	41,607	-	41,607	40,392	40,870
BODTSS industrial charges	11,568	-	-	-	11,568	11,201	11,220
Development cost charges	81,653	-	-	-	81,653	87,412	152,389
Electricity sales	5,309	-	-	-	5,309	5,682	5,793
Grants and other contributions	173,536	3,349	7,756	-	184,641	203,538	68,881
User fees, recoveries and other revenue	36,055	3,720	841	(7,673)	32,943	27,202	44,736
Gain on disposal of tangible capital assets	-	482	-	-	482	-	60,032
Sinking fund and interest income	26,099	3,118	717	(200)	29,734	24,212	28,314
Sinking fund income members and TransLink		28,078	-	-	28,078	27,611	27,127
	1,007,118	112,275	50,921	(7,873)	1,162,441	1,188,013	1,149,082
Expenses							
Salaries and benefits	109,180	75,045	6,171	-	190,396	187,520	176,743
Consulting, contracted and professional services	118,199	16,341	661	-	135,201	171,467	142,320
Asset repairs and maintenance	18,966	7,164	14,974	-	41,104	42,756	40,978
Materials and supplies	26,850	3,958	188	-	30,996	30,319	32,393
Utilities, permits and taxes	25,671	1,315	1,084	-	28,070	30,652	30,401
Other	22,592	38,860	835	(18,389)	43,898	75,803	91,336
Amortization of tangible capital assets and prepaid land leases	70,026	10,517	2,081	-	82,624	83,890	82,392
Interest on long-term debt	51,128	-	1,411	(200)	52,339	55,944	49,885
	442,612	153,200	27,405	(18,589)	604,628	678,351	646,449
Corporate costs	50,832	(63,628)	2,080	10,716	-	-	-
	493,444	89,572	29,485	(7,873)	604,628	678,351	646,449
Annual surplus	\$ 513,674	\$ 22,703	\$ 21,436	\$ -	\$ 557,813	\$ 509,662	\$ 502,633

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 29

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

17. Segmented Information and Expenses by Object (continued)

b) Total Other Districts

	Liquid Waste Services	Solid Waste Services	Total Sewerage & Drainage District	Water Operations	Building Operations	Elimination Entry	Total Water District	Total Other Districts Actual 2020	Total Other Districts Budget 2020	Total Other Districts Actual 2019
Revenue										
Metered sale of water	\$ -	\$ -	\$ -	\$ 297,781	\$ -	\$ -	\$ 297,781	\$ 297,781	\$ 307,175	\$ 285,316
Sewerage and drainage levy	274,237	-	274,237	-	-	-	-	274,237	274,237	255,811
Tipping fees	-	100,880	100,880	-	-	-	-	100,880	105,823	105,692
BODTSS industrial charges	11,568	-	11,568	-	-	-	-	11,568	11,201	11,220
Development cost charges	81,653	-	81,653	-	-	-	-	81,653	87,412	152,389
Electricity sales	-	5,309	5,309	-	-	-	-	5,309	5,682	5,793
Grants and other contributions	173,536	-	173,536	-	-	-	-	173,536	188,400	53,975
User fees, recoveries and other revenue	3,586	5,437	9,023	8,606	23,279	(4,852)	27,033	36,056	25,977	40,804
Gain on disposal of tangible capital assets	-	-	-	-	-	-	-	-	-	59,725
Sinking fund and interest income	5,049	726	5,775	18,889	1,435	-	20,324	26,099	22,108	25,284
	549,628	112,352	661,981	325,276	24,714	(4,852)	345,138	1,007,118	1,028,015	996,010
Expenses										
Salaries and benefits	61,330	5,986	67,316	41,331	533	-	41,864	109,180	110,413	103,096
Consulting, contracted and professional services	32,443	74,592	107,035	10,274	890	-	11,164	118,199	150,107	122,067
Asset repairs and maintenance	12,038	736	12,774	3,914	2,278	-	6,192	18,966	19,433	17,276
Materials and supplies	16,804	38	16,842	9,970	38	-	10,008	26,850	28,259	27,784
Utilities, permits and taxes	17,060	463	17,523	7,156	992	-	8,148	25,671	22,770	22,682
Other	8,231	6,191	14,422	7,084	1,086	-	8,170	22,592	29,280	64,180
Amortization of tangible capital assets	24,526	5,479	30,005	35,152	4,869	-	40,021	70,026	70,977	69,070
Interest on long-term debt	20,169	1,709	21,878	24,345	4,905	-	29,250	51,128	54,269	48,565
	192,602	95,194	287,796	139,226	15,591	-	154,817	442,612	485,510	474,719
Corporate costs	27,095	4,771	31,866	23,818	-	(4,852)	18,966	50,832	49,882	45,659
	219,697	99,965	319,662	163,044	15,591	(4,852)	173,783	493,444	535,391	520,378
Annual surplus	\$ 329,932	\$ 12,388	\$ 342,319	\$ 162,232	\$ 9,123	\$ -	\$ 171,355	\$ 513,674	\$ 492,623	\$ 475,632

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 30

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

17. Segmented Information and Expenses by Object (continued)

c) Total Regional District

	9-1-1								Regional Sub-total 2020
	Regional Parks	General Government	Air Quality	Regional Employee Services	Emergency Telephone Service	Regional Planning	Housing Planning and Policy	Electoral Areas	
Revenue									
MVRD property tax requisitions	\$ 44,842	\$ 5,239	\$ 5,567	\$ 2,358	\$ 4,447	\$ 3,348	\$ 5,834	\$ 377	\$ 72,011
Grants and other contributions	-	1,506	7	-	-	-	-	190	1,704
User fees, recoveries and other revenue	1,985	518	4,293	135	76	-	-	5	7,012
Gain (loss) on disposal of tangible capital assets	(7)	-	-	-	-	-	-	-	(7)
Sinking fund and interest income	482	142	55	45	15	55	43	38	874
Sinking fund income, members and Translink	-	-	-	-	-	-	-	-	-
	47,302	7,405	9,922	2,538	4,538	3,403	5,877	610	81,594
Expenses									
Salaries and benefits	17,668	3,037	6,441	2,251	-	2,207	530	310	32,444
Consulting, contracted and professional services	4,271	1,066	1,121	150	4,340	528	334	92	11,902
Asset repairs and maintenance	829	9	78	4	-	30	3	17	970
Materials and supplies	1,168	28	296	5	-	1	-	1	1,499
Utilities, permits and taxes	558	2	94	3	22	1	1	3	683
Other	3,358	1,079	1,100	46	-	361	13	92	6,049
Amortization of tangible capital assets	1,818	-	244	-	2	-	-	-	2,064
Interest on long-term debt	-	-	-	-	-	-	-	-	-
	29,670	5,221	9,374	2,459	4,364	3,128	881	515	55,611
Corporate costs	3,611	535	833	(95)	89	285	65	35	5,358
	33,281	5,756	10,207	2,364	4,453	3,413	946	550	60,969
Annual surplus	\$ 14,021	\$ 1,649	\$ (285)	\$ 174	\$ 85	\$ (10)	\$ 4,931	\$ 60	\$ 20,626

	Carried forward	Regional Global Positioning System	Regional Economic Prosperity	Sasamat Volunteer Fire Department	Regional Emergency Management	Corporate Programs	Members and Translink, Sinking	Regional District Actual 2020	Regional District Budget 2020	Regional District Actual 2019
Revenue										
MVRD property tax requisitions	\$ 72,011	-	\$ 1,020	\$ 334	\$ 163	-	-	\$ 73,528	\$ 73,528	\$ 62,901
Grants and other contributions	1,704	-	-	25	-	1,620	-	3,349	821	1,706
User fees, recoveries and other revenue	7,012	361	-	5	-	(3,658)	-	3,720	7,981	14,644
Gain (loss) on disposal of tangible capital assets	(7)	-	-	-	-	489	-	482	-	307
Sinking fund and interest income	874	19	-	17	6	2,202	-	3,118	2,025	2,157
Sinking fund income, members and Translink	-	-	-	-	-	-	28,078	28,078	27,611	27,127
	81,594	380	1,020	381	169	653	28,078	112,275	111,966	108,842
Expenses										
Salaries and benefits	32,444	154	12	27	-	42,408	-	75,045	70,930	67,791
Consulting, contracted and professional services	11,902	-	191	43	93	4,112	-	16,341	20,460	19,618
Asset repairs and maintenance	970	37	1	40	-	6,117	-	7,165	4,960	6,380
Materials and supplies	1,499	-	-	31	-	2,428	-	3,958	1,924	4,362
Utilities, permits and taxes	683	11	-	20	-	601	-	1,315	1,668	1,318
Other	6,049	2	2	4	-	4,724	28,078	38,859	39,559	43,609
Amortization of tangible capital assets	2,064	-	-	30	32	8,391	-	10,517	10,442	11,019
Interest on long-term debt	-	-	-	-	-	-	-	-	1	61
	55,611	204	206	195	125	68,781	28,078	153,200	149,944	154,158
Corporate costs	5,358	25	20	23	11	(69,065)	-	(63,628)	(38,354)	(53,434)
	60,969	229	226	218	136	(284)	28,078	89,572	111,590	100,724
Annual surplus	\$ 20,626	\$ 151	\$ 794	\$ 163	\$ 34	\$ 937	-	\$ 22,703	\$ 376	\$ 8,118

METRO VANCOUVER REGIONAL DISTRICT

Notes to Consolidated Financial Statements, page 31

Year ended December 31, 2020

(tabular amounts in thousands of dollars)

18. Prior Period Adjustment

Under operating agreements entered into with Canada Mortgage and Housing Corporation ("CMHC") and administered by BCHMC), a portion of the funds received from rental operations were restricted and only used by MVHC according to the terms of the agreements. Upon maturity of the mortgages related to Section 95 properties, funds are no longer restricted. The December 31, 2019 balance of deferred revenue was overstated by \$13,009,575 as a result of the MVHC not recognizing revenue resulting from the maturity of mortgages related to Section 95 properties. The balance of accumulated surplus (unrestricted reserves) was understated by the same amount at that date. This adjustment has also resulted in an increase in the restricted contributions revenue previously reported in 2019.

	2019 Previously Reported	Change	2019 Restated
Accumulated surplus, beginning of year	\$ 4,386,138	\$ -	\$ 4,386,138
Deferred revenue	403,055	(13,010)	390,045
Grants and other contributions	55,871	13,010	68,871
Annual surplus	489,623	13,010	502,633
Accumulated surplus, end of year	\$ 4,875,761	\$ 13,010	\$ 4,888,771

19. COVID-19 Pandemic

In the Spring of 2020, COVID-19 was declared a global pandemic and severely impacted the global economy. The District is continuing to deliver key services to the Metro Vancouver region in line with its mandate. Management is continuing to monitor the impacts on taxpayers, suppliers and other third party business associates that could impact the timing and amounts realized on the District's assets and ability to provide services to the region.

The duration of business disruption and the related financial impact cannot be reasonably estimated at this time. The District's Management will continue to closely monitor cash flows, financial projections and available reserves.

METRO VANCOUVER REGIONAL DISTRICT

Schedule 1

COVID-19 Province of British Columbia Restart Grant

Year ended December 31, 2020

(in thousands of dollars)

COVID-19 Province of British Columbia Restart Grant

In 2020, the Province of British Columbia, under the "COVID-19 Safe Restart Grant Program", provided the District with a grant of \$2.325 million for increased operating costs arising during the pandemic. The District recognized the grant into income in 2020 and applied these funds to the programs impacted as follows:

	2020
BC Restart Grant Received	\$ 2,325
Eligible costs incurred:	
Computer and technology costs to improve connectivity and virtual communications	(1,300)
Regional Parks Services	(103)
Metro Vancouver Housing Corporation	(78)
Corporate Safety	(90)
Head Office Building Operations	(65)
Emergency Operations Center, business continuity and PPE supplies	(101)
Total 2020 Eligible Costs	(1,737)
Balance carried forward to 2021	\$ 588

To: Performance and Audit Committee

From: Joe Sass, Director Financial Planning and Operations/Deputy CFO

Date: March 26, 2021 Meeting Date: April 14, 2021

Subject: **2020 Financial Results Year-End**

RECOMMENDATION

That the MVRD Board receive for information the report dated March 26, 2021, titled "2020 Financial Results Year-End".

EXECUTIVE SUMMARY

The final overall operational results for 2020 for Metro Vancouver's functions on a cash flow basis is a net surplus of close to \$33.4 million on an approved budget of \$897.1 million or slightly more than 3.7% of the budget. The results were positive for most functions with surpluses realized, which are available in future years to either avoid debt through additional contributions to capital or to pay for future projects or to reduce future tax requisitions, levies or fees to the member municipalities.

In addition, capital program expenditures for Metro Vancouver's functions were under spent for the year by \$537.4 million overall with the majority of the surplus generated in the Utilities - Liquid Waste, Water and Solid Waste functions - due to the delay/deferral of expenditures for several major capital projects to future years. Refer to report titled "Capital Program Expenditure Update".

PURPOSE

To present the Board with the final report on financial performance for the year ending December 31, 2020 as compared to the 2020 annual budget.

BACKGROUND

The Performance and Audit Committee Terms of Reference requires that the Committee be provided, three times per year, an update on the financial performance of the Metro Vancouver Districts and Metro Vancouver Housing Corporation (MVHC) with the report on the year-end results also sent to the Board.

This is the third and final report for 2020, with the results for the year in terms of comparison to the annual budget.

HIGHLIGHTS**Operating Results**

The final overall operational results for 2020 for Metro Vancouver's functions is a net surplus of close to \$33.4 million on an approved budget of \$897.1 million or slightly more than 3.7% of the budget. All of the Metro Vancouver's Districts and MVHC were in surplus positions for the 2020 fiscal year. The overall surplus is primarily due to the deferral of some operating and capital

projects, staff vacancies, lower miscellaneous operating costs plus lower debt service costs in the utilities offset by lower than budget water sales and solid waste tipping fees (somewhat impacted by Covid-19) along with less reserve utilization for budgeted operating projects delayed in the year.

Budgets are set and approved based on the best information available at the time of preparation and presentation. Throughout the course of the year, changing operational priorities or unforeseen operational constraints along with pursuing alternate paths and looking for operational efficiencies can lead to actual results differing from original expectations. In accordance with the *Operational, Discretionary and Statutory Reserves Policy*, financial surpluses generated from operations are used for the benefit of either the District or the function from which the surplus was generated, usually by first avoiding or paying down debt, followed by allocation to reserves to be used for future one-time expenditures or to reduce future tax requisitions, levies or fees to the member municipalities. An overview of the 2020 financial performance is provided below. Details, explanations and a trend analysis of some key financial indicators are provided in the attachment.

	Revenues	Operating Expenditures	Capital Funding	Applied Operating Reserves	Total
	Surplus/(Deficit) millions				
Water District	\$ (12.6)	\$ 13.1	\$ 1.2	\$ -	\$ 1.7
Sewerage & Drainage					
Liquid Waste Services	(7.4)	10.3	1.6	-	4.5
Solid Waste Services	(3.5)	16.4	1.6	-	14.5
MV Housing Corporation	(1.1)	8.5	0.4	-	7.8
Regional District	(2.6)	7.5	-	-	4.9
	\$ (27.2)	\$ 55.8	\$ 4.8	\$ -	\$ 33.4

Regional District: The operating surplus in the Regional District can be mainly attributed to underspends resulting from staff vacancies/labour under spends in Regional Parks, Regional Planning, Regional Prosperity, Air Quality, Labour Relations and Affordable Housing, lower Board and Committee costs in General Government, the deferral of some consulting project initiatives in Regional Parks, Regional Planning, Regional Prosperity, Air Quality, and Affordable Housing and a delay in equipment purchases in the Sasamat Fire Protection Service. Also, there was slightly lower than planned miscellaneous revenues received during the year in several functions and less reserve utilization due to delays/deferrals of several projects and initiatives that were planned for the year.

Water District: The operating surplus is largely due to slightly lower water sales than were budgeted, less reserve applications due to deferred projects and easement acquisitions, slightly less than budget lease/other miscellaneous revenues, and lower operating expenditures resulting from some underspends due to staff vacancies, and some underspends in the water treatment, residuals and water supply program expenses due to less consulting, lower water treatment chemical demands, savings in electricity and less easement acquisitions. As well, debt servicing costs were lower due to some additional contribution to capital from operational surplus in prior year, less than planned capital expenditures and favourable terms on the re-financing of some existing debt.

Liquid Waste: The operating surplus is primarily due to deferral of some minor capital, residuals and research and innovation program work combined with lower debt service costs due to lower than planned capital expenditures, the application of operational surplus from the prior year and favourable terms on the re-financing of some existing debt. This was offset by some unexpected utilities costs in wastewater treatment plant operations. Net underspends were offset by less reserve funding usage due to project underspends in residuals, research and innovation as well as less DCC revenues offset by slightly higher revenues for industrial fees and other external revenues.

Solid Waste: For 2020, Solid Waste had a surplus of close to \$14.5 million compared to the planned contribution to reserves of \$5.8 million for a net gain of \$8.7 million. Net revenues were lower by close to \$3.5 million primarily due to lower waste flows. Expenses were lower than budget by \$12.2 million due primarily to lower operational, closure cost, consulting and debt service expenditures.

MV Housing Corporation: The surplus position for the year is primarily due to less than expected expenses for property operations, taxes, administration and capital replacement along with slightly higher tenant rents offset by less use of reserves for capital replacement and lower rental subsidies.

Centralized support programs finished in a surplus position for 2020 of approximately \$1.86 million primarily due to staff vacancies in a number of support functions as recruitment efforts continue, underspends for consulting, travel and training costs offset by lower lease and parking revenues.

Budget Surplus Compared to Financial Statement Surplus

Metro Vancouver is required to prepare balanced budgets by its enabling legislation, however the budget information reported on the financial statements must be per public sector accounting standards. This creates a difference between the reported annual surplus on the financial statements and the surplus to budget. The table below reconciles that difference (in \$ thousands):

Annual surplus per consolidated Statement of Operations (Exhibit B)	\$ 557,813
Items not included in the operating budget:	
Amortization of tangible capital assets	82,624
Loss (gain) on disposal of assets	(481)
Sinking fund and debt retirement income	(22,905)
Reserve interest	(5,832)
Deferred revenue contributions	787
Capital grants and other income	(236,768)
Corporate programs revenue (excluding reserve funding)	(7,928)
Items not included in budget but not in financial statements:	
Sinking fund and debt retirement payments	(93,170)
Transfers to capital fund	(217,394)
Transfers from reserve funds	(23,394)
Annual surplus per Financial Performance Report	\$ 33,352

Capital Results

Overall capital expenditures for Metro Vancouver for 2020 were under budget by \$537.4 million. The majority of the under spend variance is related to the three utilities. The underspend in capital is a key contributor to the lower debt servicing costs noted above for all three of the utilities. The 2020 budget anticipated \$365.4 million in borrowing for Water Services, Liquid Wastes Services and Solid Waste Services for the year, however, only \$265.0 million in new borrowing was undertaken related to 2020 capital, contributing to the reduced debt servicing costs noted above.

The summary of 2020 Capital Expenditures is as follows:

	2020 Budget*	2020 Actual	Variance
	Surplus/(Deficit) millions		
Water District	\$ 397.5	\$ 249.0	\$ 148.5
Sewerage & Drainage			
Liquid Waste Services	883.4	575.8	307.6
Solid Waste Services	88.5	41.2	47.3
MV Housing Corporation	34.3	12.7	21.6
Regional Parks	19.9	7.5	12.4
	\$ 1,423.6	\$ 886.2	\$ 537.4

*Includes annual budget amounts plus additions approved by the Board during the year

Further discussion on capital results is included in the report titled "2020 Capital Program Expenditure Update" dated March 26, 2021.

FINANCIAL INDICATORS

The table below summarizes the list of financial indicators used to show Metro Vancouver's ability to provide services to the region on a sustainable basis. Detailed calculations and explanations are included in Attachment 1.

	2019 Actual	2020 Actual
Municipal Property Tax and Levies/Total Revenue	38.1%	39.8%
Current Ratio (current asset to current liabilities)	3.3 to 1	2.8 to 1
Debt Service Costs/Total Revenue	16.4%	16.5%
Interest Costs/Total Revenue	5.6%	5.9%
Operating Reserves/Total Revenue	7.9%	10.6%
Total Municipal Taxes, Water, Sewer and Solid Waste Charges Per Capita	\$262	\$272

ALTERNATIVES

This report is provided for information. No alternatives are presented.

FINANCIAL IMPLICATIONS

This report provides information on the results of 2020 operations which generated a surplus of \$33.4 million. This surplus is available in future years to either avoid debt through additional contributions to capital or to pay for future projects or to reduce future tax requisitions, levies or fees to the member municipalities.

SUMMARY / CONCLUSION

Overall, the 2020 financial results for the Metro Vancouver entities and functions were generally favourable to budget with a surplus of \$33.4 million.

Attachments:

Attachment 1 – 2020 Financial Performance

44140960

Metro Vancouver Districts 2020 Financial Performance

April 2021



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**METRO VANCOUVER DISTRICTS
SURPLUS TO BUDGET
2020 FINANCIAL PLAN**

	2020 ORIGINAL BUDGET	BUDGET ADJUSTMENTS NOV 2020	2020 AMENDED BUDGET	2020 YEAR-END FINAL	2020 ACTUAL VARIANCE
REVENUES					
Water Sales	\$ 307,175,053	\$ -	\$ 307,175,053	\$ 297,780,794	\$ (9,394,259)
Liquid Waste Services Levy	274,237,112	-	274,237,112	274,237,112	-
Solid Waste Tipping Fees	105,822,892	-	105,822,892	100,880,183	(4,942,709)
Metro Vancouver Regional District Requisitions	71,779,890	-	71,779,890	71,779,890	-
Compensation Services Revenue	483,893	-	483,893	483,893	-
Collective Bargaining Services Revenue	887,536	-	887,536	887,536	-
Housing Rents	40,392,325	-	40,392,325	41,669,006	1,276,681
Liquid Waste Industrial Charges	11,201,217	-	11,201,217	11,567,862	366,645
Energy Sales	5,681,540	-	5,681,540	5,308,843	(372,697)
Transfer from DCC Reserves	34,172,083	-	34,172,083	32,472,259	(1,699,824)
User Fees	5,288,054	-	5,288,054	5,205,302	(82,752)
Housing Mortgage Subsidies	2,103,014	-	2,103,014	1,774,398	(328,616)
Non-Road Diesel Permit Fees	1,760,000	-	1,760,000	1,715,936	(44,064)
Regional Global Positioning System User Fees	292,221	-	292,221	292,221	-
Electoral Area Requisition	376,943	-	376,943	376,943	-
Love Food Hate Waste	406,800	-	406,800	292,142	(114,658)
Zero Waste Conference	230,000	-	230,000	64,268	(165,732)
Other External Revenues	9,213,671	-	9,213,671	11,907,171	2,693,500
Transfer from Sustainability Innovation Fund Reserve	895,000	4,278,590	5,173,590	1,256,748	(3,916,842)
Transfer from Reserves	17,650,939	2,739,000	20,389,939	9,922,525	(10,467,414)
TOTAL REVENUES	\$ 890,050,183	\$ 7,017,590	\$ 897,067,773	\$ 869,875,032	\$ (27,192,741)
EXPENDITURES					
Operating Programs:					
Greater Vancouver Water District	\$ 309,148,765	2,866,719	\$ 312,015,484	\$ 297,776,619	\$ (14,238,865)
Greater Vancouver Sewerage & Drainage District:					
Liquid Waste	328,262,814	2,803,631	331,066,445	319,137,648	(11,928,797)
Solid Waste	114,088,624	-	114,088,624	96,105,739	(17,982,885)
Metro Vancouver Housing Corporation	52,289,752	-	52,289,752	43,452,027	(8,837,725)
Metro Vancouver Regional District					
Affordable Housing	5,833,504	460,000	6,293,504	5,946,951	(346,553)
Air Quality	11,258,492	600,240	11,858,732	10,253,602	(1,605,130)
E911 Emergency Telephone Service	4,521,227	-	4,521,227	4,449,925	(71,302)
Electoral Area Service	808,417	-	808,417	770,383	(38,034)
General Government Administration	5,879,900	-	5,879,900	4,914,063	(965,837)
General Government Zero Waste Collaboration Initiatives	1,679,923	84,000	1,763,923	1,188,590	(575,333)
Labour Relations	3,164,558	-	3,164,558	2,688,452	(476,106)
Regional Economic Prosperity	1,020,000	-	1,020,000	226,154	(793,846)
Regional Emergency Management	237,868	-	237,868	103,988	(133,880)
Regional Global Positioning System	328,849	-	328,849	281,949	(46,900)
Regional Parks	46,820,308	53,000	46,873,308	45,505,165	(1,368,143)
Regional Planning	3,763,393	150,000	3,913,393	3,413,371	(500,022)
Sasamat Fire Protection Service	943,789	-	943,789	308,093	(635,696)
	<u>86,260,228</u>	<u>1,347,240</u>	<u>87,607,468</u>	<u>80,050,686</u>	<u>(7,556,782)</u>
TOTAL EXPENDITURES	\$ 890,050,183	\$ 7,017,590	\$ 897,067,773	\$ 836,522,719	\$ (60,545,054)
2020 ACTUAL SURPLUS TO BUDGET					\$ 33,352,313

**Metro Vancouver Districts
2020 Financial Performance
District Summaries**

Greater Vancouver Water District

The Water District is in a surplus position of approximately \$1.7 million for the 2020 fiscal year.

Total Water District revenues, overall, are below budget by approximately \$12.6 million for 2020 primarily due to water sales below budget by \$9.4 million as water consumption levels for 2020 were slightly less than budget by 3.14%. In addition, there was less reserve utilization than budget of close to \$2.7 million due to several delayed projects, right of way acquisitions and equipment (laboratory) purchases funded by reserves as well as less than budget lease/other miscellaneous revenues of close to \$0.4 million.

Total Water District expenditures for 2020 are \$14.3 million below budget of which approximately \$13.1 million is primarily due to savings on, and the delay/deferral of, some projects due to COVID-19. As well, there were some labour underspends due to operating staff vacancies (with ongoing recruiting) and lower expenditures than budget for water treatment, residuals and water supply programs for consulting, electricity, chemicals along with delayed easement acquisition purchases.

Debt servicing costs were lower than anticipated by close to \$1.2 million for the year primarily due to some additional contribution to capital from the application of the 2019 operational surplus and less than planned capital program expenditures compared to budget, thereby avoiding some new debt financing for Water than was planned. Also, in addition to debt avoidance gains, the District has continued to experience favourable terms on the re-financing of some existing Water debt.

The 2020 generated operations surplus will be applied to capital to avoid future debt requirements.

Greater Vancouver Sewerage and Drainage District

❖ Liquid Waste

Liquid Waste Services realized a surplus of \$4.5 million primarily due to operational expenditure surpluses of \$10.3 million, a debt surplus of \$1.6 million offset by lower than budget revenues of \$7.4 million. The breakdown of the surpluses to each of the Sewerage Areas and Drainage is as follows: Vancouver Sewer Area - \$1.2 million, North Shore Sewer Area - \$1.0 million, Lulu Island West Sewer Area - \$1.2 million, Fraser Sewer Area - \$0.6 million and Drainage Areas - \$0.5 million.

Function revenues were under budget by close to \$7.4 million primarily due to applications from reserves not fully utilized (\$6.5 million) due to delays in several Sustainability Innovation Fund (SIF) operating projects (\$1.7 million) and delays in residuals program work (\$4.8 million). Lower than planned development cost charge (DCC) revenues application of \$1.7 million for growth capital debt funding offset by miscellaneous revenues of \$0.5 Million and BOD/TSS industrial revenues of \$0.3 million better than budget make up the balance of the revenue shortfall position for the year.

The function's debt service costs came in at \$1.6 million under budget for the year due primarily to some additional contribution to capital from the application of the 2019 operational surplus and less than planned capital program expenditures compared to budget, thereby avoiding some new debt financing for Sewer than was planned. Also, in addition to debt avoidance gains, the District has continued to experience favourable terms on the re-financing of some existing Sewer debt.

The function's operational costs were under budget by \$10.3 million. \$2.3 million of the variance is attributed to the under spending of Minor Capital caused by the cancellation and deferral of some projects. Delays in the residuals program work make up about \$6.7 million of the variance (offset by lower revenue from reserves to fund this work). The variance in residuals work is due primarily to delays in Iona Lagoon Dewatering. The Research and Innovation program was also close to \$1.9 million under budget primarily due to delays in the commencement of several SIF projects (also offset by lower revenue from reserves funding this work.) Operations for Wastewater Treatment Plants were \$4.2 million over budget due to overages in utilities costs which were not anticipated. These items were offset by surpluses totaling \$3.6 million in the remaining operating programs comprised of underspends primarily due to staff vacancies, consulting and easement purchases.

The 2020 generated operations surplus will be applied to capital to avoid future debt requirements.

❖ Solid Waste

Solid Waste had a surplus of \$14.5 million for 2020 compared to the budgeted surplus of \$5.8 million which is a variance of \$8.7 million due primarily to reduced operational expenses of \$12.2 million offset by reduced fees due to lower waste flows. The total solid waste system (Metro Vancouver/City of Vancouver) quantities for 2020 were 851,000 tonnes, down from 921,000 tonnes in 2019 and original projection of 860,000 tonnes for 2020, due primarily to impacts from Covid-19.

Revenues were lower by \$3.5 million due primarily to lower than expected waste flow fees (\$4.9 million) offset by higher than anticipated miscellaneous revenues of close to \$1.4 million. Expenses were lower by \$12.2 million due primarily to a favorable decision related to Wastech's waste flow claim of \$3.7 million, lower flows/service costs \$3.2 million, lower than expected closure costs of close to \$2.6 million, lower than budget consulting for projects of close to \$1.1 million and delays in major capital expenditures and favorable rates resulting in lower debt costs of close to \$1.6 million.

Metro Vancouver Housing Corporation (MVHC)

Total contribution to reserves for the Metro Vancouver Housing Corporation in 2020 was \$18.2M, which is \$7.8M over the budgeted amount. In 2020, the Property Assessment Appeal Board of British Columbia ruled that a number of MVHC properties were exempt from paying property taxes. Based on this ruling, \$5.7M in property tax refunds for amounts paid on those properties between 2018 – 2020 are expected. The newly developed Heather Place A building came into operations in August 2020 which was later than expected and resulted in lower than expected rent collected and mortgage expenses. Additional materials and supplies and premium labour costs related to COVID-19 were incurred but were offset by a grant received from the provincial government.

As of the end of December 2020, expenses for Metro Vancouver Housing Corporation's administrative support and property operation programs were generally below budget. Tenant rental revenue was \$1.2M higher than budgeted in 2020. Delinquent rents remained at less than 1% throughout the year and the BC temporary rental supplement (BCTRS) helped to offset some of the rent shortfall.

The 2020 capital replacement program has an annual budget of \$9M, of which \$6.7M was spent at the end of the year. Delays in larger building envelope projects at Kelly Court and Evergreen Downs allowed other minor repair work to proceed. However, there was less than expected maintenance work completed throughout the year due to restrictions related to COVID-19.

The capital development program with an annual budget of \$25.3M, spent \$6.0M as of the end of 2020. Permitting delays with the City of Surrey at Kingston Gardens and the addition of a fifth storey at Welcher Avenue, Port Coquitlam, pushed back the beginning of construction into 2021.

Metro Vancouver Regional District

The Regional District functions had a surplus of approximately \$4.9 million for the year which is primarily due to projected salary underspends related to staff vacancies and reduced expenditures related to certain programs, projects and initiatives as a direct result of the pandemic this year. Related to the Regional District's budgets for the year, the COVID-19 pandemic has had impacts on the actual expenditures which have been much lower than that anticipated for the year, particularly in several program areas for General Government functions, Regional Parks, Regional Planning, Regional Economic Prosperity, Labour Relations, Air Quality and Affordable Housing function areas.

❖ Affordable Housing

The Affordable Housing program reported a net surplus of \$113,000 in 2020. The net surplus was the result of lower than expected expenditures, that included two regional planner positions that were filled in the latter half of the year, leading to an underspend in salaries. The SIF projects were underspent in 2020 by \$233,000 and, as such, the related reserve funding revenues not recognized.

❖ Air Quality

Air Quality ended the year with a \$692,000 surplus primarily due to the inability to commence projects because of COVID-19 restrictions.

❖ E911 Emergency Telephone

E911 had a yearend surplus of \$73,000 primarily due to reduced E-Comm, Language Line and telephone costs.

❖ Electoral Area Services

Electoral Area Services incurred a deficit of close to \$124,000 due to reduced reserve applications.

❖ General Government Administration

Expenditures have trended lower than anticipated as some projects and initiatives have been delayed due to COVID-19 factors. As a result of lower than budgeted expenditures, the function is in a surplus position of approximately \$1,428,000 at year end.

❖ General Government Zero Waste Collaboration Initiatives

General Government Zero Waste Collaboration Initiatives had a net surplus of close to \$22,000 for the year due to lower than budget expenses (and related program revenues) for National Zero Waste Council, Zero Waste Conference, Love Food Hate Waste as a result of COVID-19 restrictions.

❖ Labour Relations (Regional Employer Services)

The Labour Relations function is in a surplus of approximately \$256,000 for the year due to labour underspends from staff vacancies and limited activity due to COVID-19 pandemic.

❖ Regional Economic Prosperity

Regional Economic Prosperity had a surplus of \$794,000 for the year primarily due to labour underspends from staff vacancies.

❖ Regional Emergency Management (REM)

Regional Emergency Management is in a surplus position of \$59,000 due to projects scaled back and cancelled courses due to COVID-19.

❖ Regional Global Positioning System (GPS)

Regional Global Positioning had a surplus of \$79,000 for 2020. This can be attributed to lower than expected program expenditures of \$47,000 and higher than expected subscription fees of \$32,000.

❖ Regional Parks

In 2020, Regional Parks had an operating surplus of \$1,258,000 due to expenditure savings of \$462,000 from COVID-related filming disruptions and event cancellations (net of revenues that would have been earned). Due to significantly reduced program offerings, reduced time and vacancies for auxiliary positions led to savings in salaries of \$580,000. Consulting was under budget by \$150,000 due to delays in hiring contractors and changes to project timelines. An increase in demand for outdoor exercise during the pandemic has led to higher than anticipated camping revenues of \$68,000.

❖ Regional Planning

The function ended the year with a \$188,000 surplus mainly due to staff vacancies and lower consulting expenditures.

❖ Sasamat Fire Protection Service

The Sasamat Fire Protection Service had a surplus of \$56,000 primarily due to COVID-19 challenges with procurement, training and travel. The budgeted \$600K procurement and funding for the firefighting apparatus has been postponed to 2021 due to COVID.

Centralized Support Programs

Centralized Support Programs are in a surplus position of close to \$1.9 million on an overall budget of \$76.3 million. Specific comments for each of the centralized support areas are set out below:

❖ External Relations

External Relations is in a surplus position of \$26,000 for the year primarily due to labour underspends resulting from staff vacancies.

❖ Human Resources

Human Resources is in a surplus position of close to \$276,000 for the year due to labour underspends due to staff vacancies and underspends on travel/training/tuition as a result of COVID-19.

Corporate Safety is in a surplus position of \$1,089,000 primarily due to staff vacancies, a reduction in the delivery of training courses and an underspend in some other program initiatives due to COVID-19.

❖ Financial Services

Financial Services is in a surplus position of close to \$305,000 due primarily to staff vacancies and delayed consulting work as a result of COVID-19.

❖ Indigenous Relations

Indigenous Relations had a year end surplus of \$191,000 due to a staff vacancy and unspent staff costs related to COVID-19.

❖ Legislative Services

Legislative Services incurred a deficit of close to \$108,000 primarily due to additional labour costs.

❖ Corporate Services

Head Office had an overall deficit of approximately \$415,000 mainly due to the budget including the leasing assumption of Investors Group occupying their space for the first quarter, causing a variance in rent and tenant recoveries. In addition, parking revenue was less than budgeted as the budget included of taxes and the decrease demand for parking since more people are working from home due to the COVID-19 pandemic. COVID-19 has also caused commission earned from cafeteria sales to be under budget and for janitorial expenses to be greater than expected. The deficit has been partially offset by Property Taxes being significantly lower than budgeted and COVID related expenses have been funded by the provincial grant.

IT Services had a surplus of \$452,000 due to labour underspends from staff vacancies, underspends on travel and training due to COVID-19 pandemic and savings on telephone and internet charges due to change in phone system.

Corporate Security & Emergency Management activities had a slight surplus of \$44,000 for the year.

Metro Vancouver Districts Financial Indicators

These ratios are intended to help indicate the Metro Vancouver Districts' financial ability to continue to provide services to the region on a sustainable basis. This involves evaluating a number of factors, including the ongoing ability to ensure revenues meet expenditures, ability to meet debt obligations, and the flexibility to address unexpected contingencies. Forecast ratios can help to identify potential financial problems in advance.

1) MVRD Requisition and Levies / Total Revenue

This ratio is a measure of the diversification of revenues. A high ratio indicates a reliance on property tax related levies / fees. A low ratio illustrates a greater range of revenues which is seen as beneficial. However, other revenue streams may not be sustainable or fluctuate more than tax requisitions.

	2017 Actual		2018 Actual		2019 Actual		2020 Budget		2020 Actual	
<u>Total Property tax/levies</u>	<u>\$266,131,902</u>	37.0%	<u>\$291,309,226</u>	37.7%	<u>\$317,365,717</u>	38.1%	<u>\$346,393,945</u>	38.6%	<u>\$346,393,945</u>	39.8%
<u>Total Revenue*</u>	<u>\$719,022,155</u>		<u>\$771,746,665</u>		<u>\$834,011,157</u>		<u>\$897,067,773</u>		<u>\$869,875,032</u>	

The Metro Vancouver has a reasonably well diversified revenue base. Some revenue streams such as Water Sales and Solid Waste User Fees are subject to fluctuations during the year.

2) Current Ratio

This is one measure of liquidity – the ability of the local government to meet current obligations through existing current assets. A high ratio indicates a greater ability to respond to and meet budgeted and unexpected expenditures.

	2017 Actual		2018 Actual		2019 Actual		2020 Actual	
<u>Current Assets</u>	<u>\$960,619,976</u>	5.3 to 1	<u>\$1,237,870,481</u>	5.3 to 1	<u>\$1,024,126,331</u>	3.3 to 1	<u>\$839,529,453</u>	2.8 to 1
<u>Current Liabilities</u>	<u>\$182,481,663</u>		<u>\$234,489,303</u>		<u>\$308,634,243</u>		<u>\$294,805,489</u>	

* 2020 Budget includes budgeted reserve, surplus carry-forward items or other additional reserve applications as approved by the Board.

3) i) Debt Service Costs/ Total Revenue

This is the percentage of revenue committed to payment of interest and principal on temporary and long-term debt for the regional, sewer, solid waste, water and housing operations. A high percentage indicates greater use of revenues for the repayment of debt, and less ability to adjust to unplanned events and changing circumstances.

	2017 Actual			2018 Actual			2019 Actual			2020 Budget			2020 Actual	
Debt Service Costs	\$129,794,146	18.1%		\$131,430,401	17.0%		\$137,166,682	16.4%		\$148,123,137	16.5%		\$143,344,968	16.5%
Total Revenue*	\$719,022,155			\$771,746,665			\$834,011,157			\$897,067,773			\$869,875,032	

3) ii) Interest Costs/ Total Revenue

This is the percentage of revenue committed to payment of interest on temporary and long-term debt for the regional, sewer, solid waste and water operations. A high percentage indicates greater use of revenues for servicing interest on outstanding debt, and less ability to adjust to unplanned events and changing circumstances.

	2017 Actual			2018 Actual			2019 Actual			2020 Budget			2020 Actual	
Interest Costs	\$49,782,922	6.9%		\$47,625,913	6.2%		\$46,756,655	5.6%		\$55,777,996	6.2%		\$51,098,095	5.9%
Total Revenue*	\$719,022,155			\$771,746,665			\$834,011,157			\$897,067,773			\$869,875,032	

Both the overall debt service costs for the year and interest costs for the year and as a percentage of revenue are down slightly when compared to current budget due to the savings generated from favourable rates for both new borrowing as well as for the refinancing of some existing debt.

**2020 Budget includes budgeted reserve items, surplus carry-forward items or other additional reserve applications as approved by the Board.*

4) Operating Reserves/ Total Revenues

Reserve levels are an indicator of financial strength since they provide the ability to meet unforeseen expenditures or revenue losses.

	2017 Actual		2018 Actual		2019 Actual		2020 Budget		2020 Actual	
Operating Reserves	\$92,617,848	12.9%	\$81,173,432	10.5%	\$66,205,956	7.9%	\$55,740,021	6.2%	\$92,459,857	10.6%
Total Revenue*	\$719,022,155		\$771,746,665		\$834,011,157		\$897,067,773		\$869,875,032	

As per the *Operating, Discretionary and Statutory Reserve Policy*, operating reserves are set to be a factor of the operating budgets for each of the functions to adequately meet potential unexpected contingencies.

5) Total MVRD Requisition, Water, Sewer and Solid Waste Charges / Per Capita

This indicator is a representation of the per capita cost impact of the regions tax payer supported services. These costs are passed on to the tax payer through our member municipalities. For budget purposes, the 2020 population was assumed to increase at a rate of 1.5% growth over 2019 based on the January 2020 issued population statistics.

	2017 Actual		2018 Actual		2019 Actual		2020 Budget		2020 Actual	
		Per Capita		Per Capita		Per Capita		Per Capita		Per Capita
Total Tax Revenue **	\$629,251,790	\$240	\$667,977,139	\$251	\$708,374,482	\$262	\$759,391,890	\$278	\$745,054,922	\$272
Total Population ***	2,616,913		2,658,594		2,706,792		2,731,713		2,737,681	

The projected decrease in the actual revenues over 2020 budget is primarily a result of a decrease in projected revenues for Water Sales and Solid Waste User Fees.

**2020 Budget includes budgeted reserve items, surplus carry-forward items or other additional reserve application approved by the Board.*

***Total Tax Revenue is defined as MVRD Tax Requisitions, Water Sales, Sewerage & Drainage Levies and Solid Waste User Fees.*

****Actual Populations are based on the Demographic Analysis Section, BC Stats, Ministry of Citizens' Services, Government of British Columbia, February 2021.*

To: Finance and Intergovernment Committee

From: Heather Schoemaker, General Manager, External Relations
Ann Rowan, Division Manager, Collaboration and Engagement, External Relations

Date: March 10, 2021 Meeting Date: April 14, 2021

Subject: **National Zero Waste Council Annual Update**

RECOMMENDATION

That the MVRD Board receive for information the report dated March 10, 2021 titled “National Zero Waste Council Annual Update.”

EXECUTIVE SUMMARY

Since 2013, the National Zero Waste Council, founded by Metro Vancouver in collaboration with the Federation of Canadian Municipalities, has played an important role in the realization of Metro Vancouver’s zero waste objectives as articulated in the *Integrated Solid Waste and Resource Management Plan*. A leadership initiative, this has been accomplished through contributing to Canada's transition to a circular economy by bringing together governments, businesses and NGOs to advance a waste prevention agenda that maximizes economic opportunities for the benefit of all Canadians. In 2020 and into 2021, the Council continues to advance work in preventing food waste in the supply chain and homes, was active in mobilizing the creation of the Canadian Plastics Pact that will be instrumental in creating a circular economy in plastics, and has demonstrated the viability of using recycled asphalt in paving. In addition, the Council released a seminal report that articulates the environmental and economic benefits of waste prevention in Canada – that is reducing waste at its source.

PURPOSE

To provide an update on the work of the National Zero Waste Council over the past year and to identify the work planned for 2021.

BACKGROUND

The first goal of Metro Vancouver’s *Integrated Solid Waste and Resource Management Plan* is to “minimize waste generation” – an important goal but one that is challenging to accomplish at the local level because economic activity is organized using a linear model. Resources are extracted to make products and packaging that are used and then whatever is left over is considered waste. To minimize that amount of waste generated requires changes in product design, business models, and behaviour supported by harmonized policies that reduce waste at its source and support a transition to a circular, as opposed to a linear, economy.

Recognizing that zero waste is a global issue that does not recognize boundaries and that for Metro Vancouver to achieve its zero waste goals there was a need to address waste reduction by going beyond the scope of regional government and engaging other key stakeholders, such as industry and other orders of government, in 2013 Metro Vancouver founded, in collaboration with the Federation

of Canadian Municipalities, the National Zero Waste Council. The Council is a leadership initiative that promotes cross-sector collaboration in advancing waste prevention and accelerating the transition to a circular economy across Canada. The Council leverages relationships with thought-leaders and decision-makers in Canada and across the globe to be effective in identifying best practices, campaigns, policies and innovations that can be applied in Canada from the local level to the national.

The work of the Council is accomplished through working groups led by Council members and strategic initiatives and partnerships led by the Council Secretariat. A more fulsome capture of the range of activities of the National Zero Waste Council in the past year and those that will be continued in 2021 can be found in Attachment 1.

The work of the Council is also integrated into the work of Solid Waste and other services at Metro Vancouver. Activities most relevant to Metro Vancouver and its members in supporting the achievement of regional zero waste targets are described below.

NATIONAL ZERO WASTE COUNCIL UPDATE

Membership

As a leadership initiative the Council brings together representatives from the public, private and NGO sectors engaged in waste prevention and the transition to a circular economy. The strength of the Council is in “convening and connecting”. The Council has networks that extend across Canada as well as global enabling us to organize forums where ideas, information and critical learnings can be shared and work to identify pathways for positive change unfold. The Council currently has 164 members, including local governments (including the six largest metropolitan regions in Canada, businesses (ranging from multinational firms with Canadian offices to small start-ups), industry and trade associations, NGOs and community organizations. A key strength has been providing connections for the private and NGOs sectors to local governments that are required to advance waste prevention and implement circular economy initiatives.

A Management Board elected by the members of the Council provides strategic advice and direction to the staff assigned to the work of the Council and allocates the annual discretionary budget of \$120,000 to project development, communications and meeting support. The Chair of the Management Board is the Chair of Metro Vancouver’s Zero Waste Committee. In 2021, Director Malcolm Brodie stepped down after leading the Council since its creation with Director Jack Froese replacing him. As founders of the Council both Metro Vancouver and FCM have two representatives; Director Craig Hodge, as Vice-President of the Zero Waste Committee also sits on the Council’s Management Board. (For full list of members and the Management Board, see Attachment 2.)

Food Loss and Waste

Preventing food loss and waste has been a strategic priority of the Council since its inception and with the release of *A National Food Loss and Waste Strategy for Canada* in 2018, the Council has built a solid reputation among decision-makers in government, business and community sectors as a reputable source of information and analysis on this issue.

In 2020, the Council released the report *Less Food Loss and Waste, Less Packaging Waste* that studied the intersection of reducing food loss and waste throughout the food supply chain in Canada with the efforts to reduce packaging. The report established that packaging is fundamental to minimizing food waste and identified practices and policy changes that could lead to reduction of both food waste and packaging waste. Following the release of the report, the Council hosted a workshop and two webinars for the public and then organized three forums across Canada involving key actors in the food supply chain. Notes from these forums will be used to shape future work.

For the past three years, the Council has organized and managed *Love Food Hate Waste Canada* – a cross Canada collaboration and behavior change campaign designed to prevent food waste in the home. As the COVID-19 pandemic and the lives of Canadians changed, a synergy emerged between the objectives of the campaign and the interest of Canadians. The campaign offers food saving tips and strategies that help Canadians to better meal plan and use food purchased during a time that they were eating at home more. We confirmed this through a consumer insights survey that found that 94% of Canadians were motivated to reduce their food waste and many were making concerted efforts to do so.

In 2021 the Council will focus on advancing *A Food Loss and Waste Strategy for Canada*; specifically, in the advancement of policy solutions for reducing food loss and waste at a national and provincial level and importance of innovation in this space. In recognition of our cross-Canada contributions to reducing food loss and waste, the Council has been asked by Agriculture and Agri-foods Canada (AAFC) to engage in two separate and distinct ways. First, the Council has been asked to participate and to chair in the jury for AAFC's Food Waste Innovation Challenge. The second opportunity comes through being offered a seat at the Food Policy Advisory Council that is a key component in the development of the Food Policy for Canada. Both offer important opportunities to engage food, community and agriculture leaders on how we can collectively build a better food system for all Canadians in addition to providing advice to the Minister on current and emerging issues.

Canadian Plastics Pact

The Canadian Plastics Pact (CPP) is an important collaboration initiative that will accelerate a circular plastics economy for packaging in Canada. The Council has been active in the effort to mobilize leaders behind a common vision and ambitious set of goals to address plastic packaging waste at source.

The [Canada Plastics Pact](#) was formally launched on January 27, 2021. At launch, more than 40 partners were confirmed, representing diverse parts of the plastics value chain, from leading brands to waste management companies, government institutions, and NGOs. Metro Vancouver and the Council will continue their involvement as implementation partners. Together, the partners will rethink the way they design, use, and reuse plastics, thereby charting a path toward a circular economy for plastic by 2025.

Circular Cities and Regions Initiative

The Circular Cities and Regions Initiative (CCRI) is a new cross Canada pilot jointly developed by the Council, the Federation of Canadian Municipalities, the Recycling Council of Alberta, and RECYC-QUEBEC. In development for over a year, the CCRI offers a unique opportunity to accelerate local

government-led efforts in Canada towards a circular economy. The CCRI will aim to build capacity in the local government sector by equipping cities and regions with the knowledge and tools to implement local circular economy approaches. More information on the pilot as well as the application process is available at [Circular Cities and Regions Initiative](#).

Recycled Asphalt Paving (RAP) Project

The Construction, Renovation and Demolition Working Group initiated a RAP certification process with the intent to pilot the process in the Lower Mainland. Work in 2020 focused on developing an accreditation matrix to standardize and test the performance of recycled asphalt through a demonstration project, involving Lafarge and the City of Richmond, that used 40% recycled asphalt in a stretch of paving. The significant level of interest in the pilot led the Working Group to decide that their efforts would best be directed to developing a web-based toolkit to be used by parties interested in the use of RAP.

Waste Prevention: The Environmental and Economic Benefits for Canada

Waste prevention has been core to the Council's mission, however, over the past years, it has become clear that the concept is poorly understood and that the benefits of waste prevention needed to be better articulated to decision-makers in business and government. In response to this, the Council undertook a seminal report *Waste Prevention: The Environmental and Economic Benefits for Canada*. The first of its kind for Canada, it sets out 15 specific business cases for preventing waste in six key sectors of the Canadian economy.

The basis for the analysis is estimating the cross Canada environmental and economic impacts of demonstrated waste prevention actions that represent a shift away from "business as usual" and involve using new technologies, designing products differently, expanding goods-as-a-service models and finding new markets for underutilized outputs. Each case is evaluated based on its potential to reduce greenhouse gas emissions, create jobs, prevent waste and provide other benefits.

The report was released on March 10, 2021 and staff will be organizing webinars and other opportunities to share the findings of the report and to explore how waste prevention interventions can be expanded.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The 2020 budget for the National Zero Waste Council was \$434,354, including coordination and project development funding provided by Metro Vancouver and funded from Metro Vancouver Regional District Requisitions. In addition, project-specific funding of \$209,501 was secured from project partners to advance the Council's work in the circular economy and food loss and waste.

Love Food Hate Waste Canada, a self-sustaining program of the Council funded by service fees brought in \$371,500 from its eleven partners. The funds raised from service fees directly support the development of communications and marketing campaigns, creative materials for the web, social

media, and activation initiatives and to leverage the reach of campaign ambassadors and market influencers.

CONCLUSION

The National Zero Waste Council, founded by Metro Vancouver, in collaboration with the Federation of Canadian Municipalities to assist in meeting its zero waste objectives, leverages relationships with thought-leaders and decision-makers in Canada and across the globe to be effective in identifying best practices, campaigns, policies and innovations that can be applied in Canada from the local level to the national. As a leadership initiative the Council brings together representatives from the public, private and community sectors engaged in waste prevention and the transition to a circular economy. Membership in the Council grew to 164 in 2020. This continual growth in membership from organizations across Canada reflects the recognition of the effectiveness of the Council in convening and connecting key stakeholders in discussions to identify opportunities and solutions in reducing food loss and waste as well construction and demolition waste and in creating a circular economy future for Canada, and construction, renovation and demolition waste.

Highlights in 2020 were many. In terms of food waste, the Council hosted a series of virtual forums to establish priority actions in reducing food loss and waste as well as packaging in the food supply chain in addition to expansion of the reach of the *Love Food Hate Waste Canada* campaign. In terms of accelerating Canada's transition to the circular economy, the Circular Cities and Regions Initiative was launched in collaboration with FCM and other partners. The Council was active in the development and organization of the Canada Plastics Pact; an important collaboration initiative that will accelerate a circular plastics economy for packaging in Canada. In addition, a web-based toolkit that will enable the sharing the positive results and learnings of a demonstration project that that used 40% recycled asphalt will be developed. On March 10, 2021, the Council released a ground-breaking report, *Waste Prevention: The Environmental and Economic Benefits for Canada* that analyzed the business case for 15 waste prevention interventions. The Council will be implementing an outreach and communications strategy to share the importance of waste prevention to Canadian decision-makers in government and business.

Attachments:

1. National Zero Waste Council -- 2020 Progress Report
2. National Zero Waste Council – Membership List as of February 28, 2021

References:

1. National Zero Waste Council: www.nzwc.ca
2. Love Food Hate Waste Canada: <https://lovefoodhatewaste.ca/>
3. Canadian Plastics Pact: <https://plasticspact.ca/>
4. Circular Cities and Regions Initiative: <https://canadiancircularcities.ca/Pages/default.aspx>



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2020 Accomplishments and 2021 Activities

Seminal research on the benefits of Waste Prevention in Canada

Waste Prevention: The Environmental and Economic Benefits for Canada

The Council has been on the forefront of advancing waste prevention and in identifying the important role waste prevention has in the Circular Economy. However, within Canada waste prevention as a concept is not well understood and the economic as well as environmental benefits of pursuing waste prevention have been missed.

In response to this, *Waste Prevention: The Environmental and Economic Benefits for Canada* provides the first of its kind for Canada, setting out 15 specific business cases for preventing waste in six key sectors of the Canadian economy: construction, manufacturing, healthcare, agriculture, plastics and retail. These six sectors were chosen for the large amount of waste they produce and the existence demonstrated and viable waste prevention interventions.

The basis for the analysis is estimating the cross Canada environmental and economic impacts of demonstrated waste prevention actions that represent a shift away from “business as usual” and involve using new technologies, designing products differently, expanding goods-as-a-service models and finding new markets for underutilized outputs. Each case is evaluated based on its potential to reduce greenhouse gas emissions, create jobs, prevent waste and provide other benefits.

The report was released on March 10, 2021 and staff will be organizing and participating in webinars, virtual forums and other opportunities to share the findings of the report and to explore how waste prevention interventions can be expanded within Canada. The analysis and findings are organized in an assessable format and the findings are organized by sectors studied. The report and executive summary are available in French and English and are available on the Council website.

Advancing A Food Loss and Waste Strategy for Canada

Less Food Loss and Waste, Less Packaging Waste

In 2020, the Council released the report *Less Food Loss and Waste, Less Packaging Waste*, produced and funded in collaboration with RECYC QUEBEC, Eco Enterprises Quebec, PAC, Vancity and Agriculture and Agri-Foods Canada. The report was authored by Value Chain Management International and explored the intersection of food loss and waste and packaging. Through primary and secondary research, Dr. Martin Gooch confirmed that reducing food loss and waste throughout the supply chain requires packaging; food waste generates more greenhouse gas emissions than packaging materials; and plastics are generally the preferred material for food. But the report also

recognized that it was important, and possible, to reduce both food waste and packaging waste with the right policy and practice changes.

Following the release of the report, the Council hosted a workshop and as well as 2 webinars, one in French and one in English to introduce the findings of the research. In the fall, the Council hosted, with local and funding partners, involving stakeholders across the food supply chain, three forums in key markets across Canada - Western Canada (Vancouver), Eastern Canada (Toronto) and Quebec (Montreal) involving representatives from business, business associations, governments (local, provincial and federal), academics, NGOs and community groups. More than 700 stakeholders were engaged in this work.

Summary reports from those discussions are forthcoming, and will inform critical next steps for the Council with respect to food loss and waste and packaging.

Love Food, Hate Waste Canada campaign

For the past three years, the Council has organized and managed *Love Food Hate Waste Canada*. The campaign is delivered by the Council in collaboration with 11 campaign partners: City of Toronto, City of Vancouver, Metro Vancouver, City of Victoria, Capital Regional District, Guelph-Wellington and City of Winnipeg, RECYC QUEBEC, BC Ministry of Environment and Climate Change Strategy, Sobeys and Walmart. Throughout 2020 and into 2021, this cross Canada collaboration and behavior change campaign to prevent food waste in the home continued to expand its reach across the country through marketing, media and collaboration opportunities. The campaign materials are available in both official languages.

In early 2020, a “Rediscover the Value of Food” Campaign was launched with the objective of helping Canadians make the connection with the important role food plays in our lives. The timing was perfect because beginning in mid- March with the early lockdowns and then with successive directions from public health authorities regarding COVID-19, the daily lives of Canadians, their shopping and dining habits were substantially changed. All of a sudden the lives of most Canadians were centred around home and the messaging of *Love Food Hate Waste* became more relevant and the website and other social media related to the campaign became a resource to Canadian – offering food saving tips and strategies that might help Canadians better meal plan and save food.

To better understand the impact of COVID-19 on citizen behaviours and food waste, a public opinion survey of Canadians was commissioned in June to help inform our thinking. This consumer insights work was extremely valuable - it showed that 94% of Canadians are motivated to reduce their food waste with many making concerted efforts to reduce their waste. The results suggest we have a unique opportunity to build on positive behaviours and make preventing food waste in the home the new normal.

LFHW Canada has successfully engaged with thousands of Canadian households educating them about food waste and providing simple actionable tips to help citizens waste less food. This can be measured through the strong growth on all three social media platforms (Facebook, Instagram and Twitter). In addition, the campaign received significant national and local media coverage in 2020 through the efforts of campaign partners as well as the work of the national coordination effort, including the consumer insights survey.

Advancing the Strategy at the National Level

In 2021 the Council will focus on advancing *A Food Loss and Waste Strategy for Canada*; specifically, in the advancement of policy solutions for reducing food loss and waste at a national and provincial level as well as the importance of innovation in reducing food loss and waste in the food supply chain. As an indication of the profile and respect the Council's cross-Canada contributions to reducing food loss and waste, the Council has been asked by Agriculture and Agri-foods Canada (AAFC) to engage in two separate and distinct ways.

First, the Council has been asked to participate and to chair in the jury for AAFC's Food Waste Innovation Challenge. The first two streams of this challenge focus on prevention and diversion, and focus on awarding funding to 30 innovators that are offering unique solutions to food loss and waste. The second opportunity comes through being offered a seat at the Food Policy Advisory Council that is a key component in the development of the Food Policy for Canada. The Advisory Council brings together 24 experts and stakeholders from a variety of sectors, including the agriculture and food sector, health, academia, and non-profit organizations. This will be a critical forum to engage food, community and agriculture leaders on how we can collectively build a better food system for all Canadians, as it provides advice to the Minister on current and emerging issues.

Circular Economy: Accelerating Transition to Circular Canada through a Focus on Solutions

Canadian Plastics Pact (CPP)

The CPP is a new initiative to accelerate a circular plastics economy for packaging - mobilizing leaders behind a common vision and ambitious set of goals to address plastic packaging waste at source. The National Zero Waste Council has been working collaboratively with other non-for-profit and industry leaders for over a year to bring the CPP to fruition.

The CPP formally launched on January 27, 2021 with 40 confirmed partners representing diverse parts of the plastics value chain, from leading brands to waste management companies, government institutions, and NGOs – and including the following NZWC Members: PAC Packaging Association, Save-on-Foods, Retail Council of Canada, Cascades Recovery +, Ocean Wise and Return-It. Metro Vancouver and the NZWC will also participate as Implementation Partners moving forward. Together, the partners will rethink the way they design, use, and reuse plastics, thereby charting a path toward a circular economy for plastic by 2025.

Circular Cities and Regions Initiative

The Circular Cities and Regions Initiative is a new national pilot jointly developed by the National Zero Waste Council, the Federation of Canadian Municipalities, the Recycling Council of Alberta, and RECYC-QUEBEC that launched on March 8, 2021.

The CCRI offers a unique opportunity to accelerate local government-led efforts in Canada towards a circular economy and has been in development for a year. The CCRI will aim to build capacity in the local government sector by equipping cities and regions with the knowledge and tools to implement local circular economy approaches. The pilot will include:

- A national webinar series that will run through the year highlighting best in class examples from across Canada and globally; and

- A peer to peer network for 15 local governments to enable the exchange of ideas on key topics and approaches, and to provide tailored support to identify opportunities for action. The process for applying to participate is available on the CCRI website.

An ad-hoc Advisory Group is also being formed, which will bring in key experts from international organizations like the Ellen MacArthur Foundation, Circle Economy and Zero Waste Scotland alongside leading local government practitioners in Canada. The Advisory Group will be a sounding board for the CCRI Project Management Team and the local government cohort participants over the duration of the project.

Product Design and Packaging

The Council has built an impressive and insightful body of work on the potential value of compostable materials that could replace single use items, including packaging, as well as the barriers in Canada that prevent the large scale adoption of compostable. The series of four reports is available on the website.

However, the COVID 19 pandemic seriously eroded the adoption of “reusables” as an alternative to single use items. This situation arose due to a high level of uncertainty within the food retail sector as well as among public health authorities regarding the safety of using reusable products such as bags, mugs, and other containers. As a result, a diverse number of policies and practices emerged across the retail landscape. The members of the working group recognized a timely opportunity to conduct research to better understand under what conditions would the use of reusable products and services would be safe. To answer this question, a highly-qualified team from the University of Toronto’s Dalla Lana School of Public Health was commissioned to explore the options. The findings are captured in a report currently under-going review. The Council hopes to release the report, *Opportunities for Reusable Products and Services in the Retail Setting*, by the end of May.

Construction and Demolition - Steps toward a Built Environment Consistent with Circular Principles

Recycled Asphalt Paving (RAP)

The Construction and Demolition Working group has had two areas of focus. One was scoping and initiating a RAP certification process with the intent to pilot the process in the Metro Vancouver region. Throughout 2020 work continued on developing an accreditation matrix that would facilitate the standardization of the product and enable the means to test the performance of recycled asphalt. In 2020, Lafarge and the City of Richmond collaborated on a pilot project of using 40% recycled asphalt on a four-lane road. The application proved to be successful with the pilot receiving positive media coverage as well as the two proponents continuing to receive enquiries from parties across the country interested in learning more. This pilot is an important step towards circularity within the construction sector -- reducing the use of virgin materials in addition to reduced GHG emissions.

By the end of 2020, the Working sub-committee recognized the interest in RAP and determined that the RAP project would pivot away from a certification program, towards a web-based toolkit that stakeholders can use to learn more about how to increase the use of RAP.

Wood Waste

The other area of focus for the Construction and Demolition Working Group has been on reducing wood waste. In collaboration with BCIT's School of Construction and Environment, a webinar on opportunities for deconstruction was organized and well attended. An infographic summarized key take-aways from the webinar and is available on the Council website. In addition, two videos on wood waste have also been produced. The first one showcases current initiatives aimed at reducing CRD waste in Metro Vancouver and the second, soon to be released, captures the growing number of initiatives taking place across Canada to divert wood waste out of landfills.



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NATIONAL ZERO WASTE COUNCIL MEMBERS AND 2021 MANAGEMENT BOARD

2021 MANAGEMENT BOARD

CHAIR

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VICE CHAIR

James Downham, Packaging Consortium (PAC)

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Mike Layton, City of Toronto

Pete Fry, City of Vancouver

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Mairin Loewen, Federation of Canadian Municipalities (FCM)

Doug Dobrowski, Federation of Canadian Municipalities (FCM)

Craig Hodge, Metro Vancouver

Sophie Langlois-Blouin, RECYC-QUEBEC

BUSINESS

Angela Griffiths, A&W Food Services of Canada Inc.

Irene Yang, BASF Canada

Mikhael Metauro, Cascades Recovery

Glen Munholland, Circular Supply Chains

Lincoln Kyne, Lafarge Canada

Raman Johal, London Drugs

Matt Livingston, Nature's Path Foods

Cher Mereweather, Provision Coalition

Louise Schwarz, Recycling Alternative

Oskar Kwieton, Shape Property Management

Julian Radlein, SymbiAudit Inc.

BUSINESS ASSOCIATION

David Fung, Canadian Manufacturers and Exporters (CME)

Julie Dickson, Retail Council of Canada (RCC)

Allen Langdon, Return-It

Jay Rao Surrey, Board of Trade

COMMUNITY

Laura Hardman, Ocean Wise

Vanessa Timmer, One Earth

Lyndsay Poaps, Recycling Council of BC



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Lori Nikkel, Second Harvest
Alida Kusch, Solid Waste Association of North America (SWANA)
Tonny Colyn, The Salvation Army Thrift Store

MEMBERS

GOVERNMENT AND GOVERNMENT ASSOCIATIONS

BC Ministry of Environment
City of Burnaby
City of Calgary
City of Edmonton
City of Fort St. John
City of London
City of Markham
City of New Westminster
City of North Vancouver
City of Port Coquitlam
City of Richmond
City of Saskatoon
City of Toronto
City of Vancouver
City of Victoria
Communauté métropolitaine de Montréal
Federation of Canadian Municipalities (FCM)
Granville Island Office, CMHC
Halifax Regional Municipality
Metro Vancouver
Recyc-Quebec
Town of Cochrane
Township of Langley
Vancouver Board of Education
Village of Burns Lake
Ville de Gatineau
Ville de Lévis
Ville de Montréal

BUSINESS AND BUSINESS ASSOCIATIONS

604-Trash-It
A&W Food Services of Canada Inc.
Alberta Food Processors Association
Associated Labels and Packaging
Baker McKenzie LLP



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Bank and Vogue
Bast Fibre Technologies Inc.
BASF Canada
BC Bottle and Recycling Depot Association
BC Brewers Recycled Container Collection Council
Beyond Food Inc.
BNAC Environmental Solutions Inc.
Bokashi Living Inc.
Brantwood Consulting
BSbio
Burnaby Board of Trade
Canadian Manufacturers & Exporters
CanBim
Carton Council of Canada
Cascades Recovery
C-Change Labs
CHEP Canada
ChopValue
CIAL Group
Circular Supply Chains Inc.
Clean Foundation
Connectivitywerx
Craft Grain
Dell Canada
Delphi Group
Eco Guardian
ECODAS
Ecoinspire
EcoMed Services
Ecowaste Industries Ltd.
EcoZero (an EarthWorks Recycling Company)
Elements Society
Flash Food
Folium
Food for Life
Fulfill Shoppe
Furniture Link
Gallop International Trading Co. Ltd.
Genpak Flexible
Green Chair Recycling
Green Earth Strategy
Green Spark Group

Green Standards Ltd.
Greenomics
Hitfar Concepts
HP Canada
HSR Zero Waste
Immacutec Systems Technologies Inc.
Impactful Health Research & Development Inc.
Interface
Keurig Canada
KraftHeinz Canada
Lafarge Canada Inc.
LEAF (Leaders in Environmentally Accountable Foodservice)
Lehigh Cement
London Drugs
Metro Inc.
Micron Waste Technologies Inc.
Mulholland Business Services
NADA
Natural Source/ShareWares
Naturally Crafted Contracting Ltd.
Nature's Path Foods
NewSpring Energy
NutriGrow
Oklin Composting Technology Ltd.
Partners in Project Green
Policy Integrity Inc.
Prairie Creek Energy Services Ltd.
Provision Coalition
Quantum Lifecycle Partners LP (former GEEP)
Quupe
Recovering Recyclables
Recycling Alternative
Renewi Canada
Retail Council of Canada
Return-It
Richvan Holdings (2006) Ltd.
Sea to Sky Removal
Shape Property Management
Shaw Industries
SJMConsults
SKIPthedishes
Small Business BC
Soapstand
Sobeys Inc.
Sodexo
SPUD (Sustainable Produce Urban Delivery)
Strathcona Business Improvement Association

Stuart Olson
Surrey Board of Trade
SymbiAudit Inc.
TELUS
The Aggressive Group (TAG pods)
Tradle
Tru Earth
Value Village
Vancity
Virtue Canada
Walmart Canada
Waste Collective
Wentworth Technologies
West Coast Reduction Ltd.

COMMUNITY NON-PROFIT/ACADEMIA

Catalyst Agri-Innovations Society
Construction Resource Initiatives Council
CSA Group
Dan's Legacy Foundation
Diabetes Canada
Ethik Boutique Eco-Design Hub
Food Banks Canada
Globe Advisors
Greater Vancouver Food Bank
Kwantlen Student Association
Light House Sustainable Building Centre
Ocean Wise/Vancouver Aquarium
One Earth
PAC NEXT
Plastic-Free YYC
Recycling Council of Alberta
Recycling Council of British Columbia
Recycling Council of Ontario
Ridge Meadows Recycling Society
Salvation Army Thrift Store
Saskatchewan Waste Reduction Control
Second Harvest
Simon Fraser University
Society of Promoting Environmental Conservation (SPEC)
Solid Waste Association of North America
Thompson Rivers University
Toronto and Region Conservation for the Living City
Upcycle the Gyres Society (UpGyres)

To: Finance and Intergovernment Committee

From: Amanda McCuaig, Director of Communications, External Relations
Jean Lawson, Program Manager, Intergovernment Relations, External Relations

Date: March 29, 2021 Meeting Date: April 14, 2021

Subject: **Union of BC Municipalities 2021 Community Excellence Awards Nominations**

RECOMMENDATION

That the MVRD Board support the following entries for the Union of BC Municipalities 2021 Community Excellence Awards:

- a) Excellence in Governance: Metro Vancouver's Increased Engagement During a Time of "Social Isolation"; and
- b) Excellence in Sustainability: Lulu Island Renewable Natural Gas Facility.

EXECUTIVE SUMMARY

The Union of BC Municipalities (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 support to submit two projects for recognition under the "governance" and "sustainability" categories: *Metro Vancouver Governance Informed by Increased Engagement During a Time of "Social Isolation"* and the *Lulu Island Renewable Natural Gas Facility*.

PURPOSE

To seek support to submit for two Metro Vancouver projects to be considered for the UBCM 2021 Community Excellence Awards.

BACKGROUND

Applications for the UBCM 2021 Community Excellence Awards are being accepted until May 14, 2021. Metro Vancouver is a member of UBCM and may submit one project per award category. UBCM requires a Board resolution indicating support for projects to be considered for a 2021 Community Excellence Award.

UBCM 2021 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 Convention, held September 13 to 17, 2021.

Award categories include:

- Excellence in Governance
- Excellence in Service Delivery
- Excellence in Asset Management
- Excellence in Sustainability

All applications will be scored against the following criteria:

- Leadership;
- Financial management and planning;
- Partnerships and collaboration;
- Innovation and promising practices;
- Public engagement and communications; and
- Transferability.

Staff have reviewed the award categories and criteria and are recommending entries in the categories of *Excellence in Governance* and *Excellence in Sustainability*.

Excellence in Governance

This category includes projects or programs that utilize governance processes or policies that are outcomes-based and consensus oriented; support and encourage citizen participation in civic decision-making; are efficient, equitable and inclusive, open and transparent; and exemplify best practices in accountability, effectiveness and long-term thinking.

Metro Vancouver project:

Metro Vancouver's Increased Engagement During a Time of "Social Isolation"

The introduction of COVID-19 social distancing restrictions in March 2020 meant that most organizations had to rethink how to meaningfully engage. Despite reduced in-person engagement, Metro Vancouver pivoted and implemented stakeholder and community engagement events in digital spaces combined with enhanced promotions to ensure that previous engagement metrics were met. The result was not only sustained engagement levels, but dramatically increased levels of involvement from key stakeholders and the public. In particular, a key policy document for Metro Vancouver – *Metro 2050* – has benefitted from substantial increase to engagement which is key for maintaining informed governance during the unusual time of 'social isolation'.

Engagement numbers across the board were sustained and in many cases increased. For example:

- Public engagement for the Iona Island Wastewater Treatment Plant included two online community meetings attracting over 140 participants – a 300% increase over previous events (by comparison, the previous in-person meeting in 2019 attracted only 35 participants).
- Media events were transitioned to digital formats, with innovation to allow the public, elected officials, and the media to participate remotely through Facebook Live, Zoom and live streaming. As a key example, in summer 2020, Metro Vancouver hosted a media event with partners at Burns Bog with in-person and remote participation. The event included remarks from two Federal Cabinet Ministers, one Provincial Minister and several local elected officials: the Hon. Jonathan Wilkinson, Minister of Environment and Climate Change Canada and The Hon. Carla Qualtrough, Minister of Public Services and Procurement and Accessibility participated remotely; Hon. George Heyman, B.C. Minister of Environment and Climate Change Strategy, attended in person; Metro Vancouver's Board Chair Sav Dhaliwal, Climate Action Committee Chair Adriane Carr, Regional Parks Committee Chair John McEwen attended in person, as did Delta Councillor Dylan Kruger. Ministers Heyman and Wilkinson

also provided quotes for the media release. Metro Vancouver generated widespread online, print and broadcast media coverage that featured environmental initiatives and Climate 2050 goals. Highlights included a Vancouver Sun front page on June 30 (featuring a photo from Burns Bog); a Canadian Press story that was syndicated to over two dozen publications; CTV and Global TV news stories that prominently featured quotes from Chair Dhaliwal, and coverage in French and Chinese languages.

Engagement for Metro Vancouver's *Metro 2050* is a key example of how increased promotion combined with thoughtful, carefully crafted digital engagement events enhanced the level of stakeholder participation. *Metro 2050* is the regional strategy for managing growth (population, housing, employment). The plan requires significant collaboration from signatories across the region, including all member jurisdictions, TransLink, and the two neighbouring regional districts.

The first phase of engagement for the plan was underway as the transition to 'socially distant' engagement needed to happen. The focus of Phase 1 was to review *Metro 2040* by topic area and identify opportunities for improvement. Engagement has focused on the strategy's signatories, non-signatories (aligned or impacted organizations), First Nations and the broader public.

Metro Vancouver trialled a public webinar and attracted over 500 registrants and 290 participants (reflecting a typical attrition rate). By comparison, in-person regional dialogues sessions attract between 50 and 120 participants and incur venue rental and catering costs.

- The public webinar attracted 290 participants – a **141%-480% increase** over typical events. (By comparison, in-person regional dialogues had previously attracted 50-120 participants). Importantly, the registrants of that engagement were the target audience: broader public, as well as planning-related professionals from various agencies and consultancies, member staff, elected officials, other governments, and academics. The resulting webcast was made available publically, and then further circulated by third parties to other organizations.
- The online engagement survey received 30,000 responses.
- Engagement to date has reached an estimated 120,000 people.
- In addition to the public engagement, the *Metro 2050* team was able to increase engagement with each member jurisdiction through the use of digital video meeting tools. Where staff had previously started engagement with in-person dialogue, they shifted to online for both staff-to-staff and staff-to-Council presentations, ensuring presentations for all members, other plan signatories, affected non-signatory stakeholders, and any in-region First Nations requesting a meeting. This included 10 presentations to Councils, 4 with individual First Nations, and 20+ with stakeholders.
- In 2021 staff regularly convene an Intergovernment Advisory Committee online, as well as offering staffed 'virtual open houses' to the committee members who wished to get up to speed on policy content in preparation for these meetings.

The input received to date is being considered as staff prepare and refine the recommended policy directions and draft *Metro 2050* content. Engagement will continue through to the approvals phase.

Ultimately, the shift to digital engagement combined with intentional promotions of opportunities has increased engagement across all topic areas for Metro Vancouver, while the costs associated with

venue rental and catering are reduced while we are able to engage a larger regional audience who are not able to attend events in person due to location.

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.

Metro Vancouver project

Lulu Island Renewable Natural Gas Facility

Opened in 1973, the Lulu Island Wastewater Treatment Plant treated 26 billion litres of wastewater in 2020. The plant receives wastewater from the 210,000 residents in the western part of Richmond, and separates water from the solids in wastewater using a secondary treatment process. Biogas is generated as a by-product of the wastewater treatment process and, after cleaning, can be used as a low carbon substitute for natural gas, reducing greenhouse gas emissions. Biogas is currently used at Lulu Island to generate heat for indoor heating and plant processes, with excess biogas being safely flared.

In late 2019, construction began on a biogas cleanup system that would allow for the unused biogas to be cleaned, stored and sold to partners as renewable natural gas. Operation of this new biogas facility commenced in April 2021. The new facility cleans biogas from the plant using a water-based scrubbing technology that's self-contained to make it ready to blend seamlessly into existing gas infrastructure throughout the province.

In February 2021, Metro Vancouver and FortisBC announced a formal collaboration to work together to achieve regional climate-action goals. Metro Vancouver and FortisBC both recognize the importance of partnerships and co-investment in the development of projects that support the region's resilience and low-carbon future. The Lulu Island Renewable Natural Gas Facility is an example of that collaboration. This facility will produce enough renewable natural gas to heat more than 600 homes, and we anticipate that production will increase as the region's population grows. FortisBC will purchase and distribute biogas from Metro Vancouver to work towards its goal to increase the renewable content of its overall natural gas supply to 15% by 2030.

Metro Vancouver's *Climate 2050* Strategy envisions a resilient, carbon neutral future for the region, and this project contributes to that long-term goal. Resource recovery is a cornerstone of Metro Vancouver's approach to waste management. In order to incorporate sustainability into planning, policy and practice, Metro Vancouver is committed to researching, testing and implementing promising technologies.

ALTERNATIVES

1. That the MVRD Board support the following entries for the Union of BC Municipalities (UBCM) 2021 Community Excellence Awards:
 - a) Excellence in Governance: Metro Vancouver's Increased Engagement During a Time of "Social Isolation"; and

- b) Excellence in Sustainability: Lulu Island Renewable Natural Gas Facility.
- 2. That the Board direct staff not to apply for the UBCM 2021 Community Excellence Awards.

FINANCIAL IMPLICATIONS

No financial implications.

CONCLUSION

The UBCM Community Excellence Awards recognize members and projects that demonstrate promising practices and innovation. The Lulu Island Renewable Natural Gas and Metro Vancouver's approach to increased public engagement and communications during the COVID-19 pandemic are strong examples of Metro Vancouver's leadership and collaboration in sustainability and governance.

With the support of the MVRD Board, staff will complete the award application forms for these two projects and submit them to UBCM by May 14, 2021.

44743089

To: Climate Action Committee

From: Morgan Bragiewicz, Senior Policy and Planning Analyst
Jason Emmert, Senior Planner
Parks and Environment Department

Date: March 24, 2021 Meeting Date: April 16, 2021

Subject: **Draft *Climate 2050 Transportation Roadmap***

RECOMMENDATION

That the MVRD Board authorize staff to proceed with engagement on the draft *Climate 2050 Transportation Roadmap*, as presented in the report dated March 24, 2021, titled “Draft *Climate 2050 Transportation Roadmap*”.

EXECUTIVE SUMMARY

This report presents the draft *Climate 2050 Transportation Roadmap*, the second in a series of ten *Roadmaps* that will guide the region’s policies and collective actions to transition to a carbon neutral, resilient region by 2050. Preliminary modelling results indicate that completing these aggressive but achievable actions will have a significant impact on greenhouse gas emissions, with emissions from all transportation sectors potentially reduced by 30% below 2010 levels by 2030, and by over 85% by 2050. Emissions from light duty vehicles could achieve a reduction of over 40% by 2030 and can be carbon neutral by 2050. The *Transportation Roadmap* is intended to be dynamic, and over time, more work will be done to identify and undertake additional actions in order to reach our 2030 and 2050 climate targets. To assess resiliency of the transportation system, further work is needed to establish methods and key data sources to quantify the impact of the resiliency actions in the *Transportation Roadmap*. The draft will inform further engagement, with the intention to bring an updated *Transportation Roadmap* for endorsement by the MVRD Board in the fall of 2021.

PURPOSE

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

BACKGROUND

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

This report presents the draft *Climate 2050 Transportation Roadmap* (Attachment 1), which will be the subject of engagement activities with the public, stakeholders and other governments, including First Nations, on greenhouse gas reductions from and climate resiliency for regional transportation.

CLIMATE 2050 STRATEGIC FRAMEWORK

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

CLIMATE 2050 TRANSPORTATION ROADMAP

The *Climate 2050 Transportation Roadmap* presents a robust plan to shape our carbon neutral and resilient future by prioritizing zero-emission vehicles, shifting trips to transit and active transportation, reducing emissions from goods movement, and increasing system resilience. In laying out this pathway, the *Transportation Roadmap* discusses the following issues:

- **challenges** to reaching zero emission and low carbon transportation, including goals and targets for greenhouse gas emissions reductions and climate resiliency for all transportation sectors by 2030 and 2050;
- **key sources** of greenhouse gas emissions from transportation and the expected impacts to the transportation system from a changing climate; and
- **barriers** and **opportunities** to reduce emissions and increase resiliency that shape the strategies and actions in the Roadmap.

The *Transportation Roadmap* lays out 48 actions for reducing emissions and increasing resiliency, organized under the following 6 strategic areas:

1. Accelerate the Transition of the Passenger Vehicle Fleet to Electric Vehicles
2. Reduce Driving through Active Transportation and Public Transit
3. Reduce Heavy Truck Emissions and Support Early Adoption of Zero Emission Heavy Trucks
4. Reduce Marine, Rail, and Aviation Emissions
5. Protect Existing Transportation Networks from Future Climate Impacts
6. Develop Climate Resilient Transportation Networks

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

The goals, strategies and actions in the draft *Transportation Roadmap* incorporate public and stakeholder feedback received to date, as previously summarized in a report on engagement for the *Clean Air Plan* and *Climate 2050* roadmaps received by the Climate Action Committee on November 13, 2020. Prior to proceeding with engagement, the draft *Climate 2050 Transportation Roadmap* will be formatted to match the look and feel of other *Climate 2050* documents.

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

Potential impact on greenhouse gas emissions

Initial modelling of *Climate 2050* carbon neutral scenarios, including key actions in the draft *Transportation Roadmap*, were presented to the Climate Action Committee on November 13, 2020. This modelling indicates that greenhouse gas emissions from all transportation sectors could be reduced by 30% below the 2010 regional total by 2030, and by over 85% by 2050. Emissions from light duty vehicles, the largest source of transportation emissions, could reach a reduction of over 40% by 2030 and can be virtually eliminated by 2050. These potential emission reductions reflect aggressive but achievable actions, but do not alone achieve the 2030 or 2050 targets to reduce regional greenhouse gas emissions from this sector, set in the draft *Transportation Roadmap*.

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

Relationship between the *Transportation Roadmap*, *Clean Air Plan*, *Metro 2050* and *Transport 2050*

The *Clean Air Plan* will build on the 2011 *Integrated Air Quality and Greenhouse Gas Management Plan*. The *Clean Air Plan* supports *Climate 2050*’s vision of a carbon neutral region by identifying the initial actions needed to meet the region’s 2030 greenhouse gas target – a 45% reduction in greenhouse gas emissions from 2010 levels by 2030. Greenhouse gas reduction actions in the *Transportation Roadmap* are also included in the draft *Clean Air Plan*.

In addition to coordinating actions with the *Clean Air Plan*, there are important connections between the *Climate 2050 Transportation Roadmap*, *Metro 2050* and TransLink’s regional transportation strategy, which is currently being updated to extend to 2050 (*Transport 2050*). Metro Vancouver, in partnership with its member jurisdictions, will manage regional land use and growth through *Metro 2050*. TransLink’s *Transport 2050* will complement this vision with the region’s long range regional transit strategy. The *Climate 2050 Transportation Roadmap* will outline the actions necessary to achieve regional carbon neutrality. Together, *Metro 2050* and *Transport 2050* will shape the future of how we move and live. Along with the *Transportation Roadmap*, these strategies will ensure that regional growth, transit, and climate strategies are mutually supportive.

ENGAGEMENT PROCESS

Metro Vancouver is committed to engaging with the public, stakeholders and other governments, including First Nations, that could be impacted by the *Climate 2050 Transportation Roadmap*, and will incorporate feedback into the final roadmap. The engagement will be conducted in accordance with the Board Policy on Public Engagement and will build on the work completed to date to develop

the draft *Transportation Roadmap*. Many of the GHG reduction actions in the *Transportation Roadmap* parallel the *Clean Air Plan* and will be brought forward through the *Clean Air Plan* engagement and adoption processes.

The engagement is designed to reach a broad audience to convey the importance of zero emissions, low carbon, and resilient transportation. Feedback sought from specific sectors and organizations might include, for example; support, concerns about implementation or impacts, and ideas for innovation and collaboration. Due to public health regulations, engagement is expected to be conducted through virtual means, and staff are planning creative and engaging materials to encourage feedback. This feedback will be reported to the Committee, highlighting how it informed a finalized *Transportation Roadmap*, which will be presented to the Committee and Board for consideration in the fall of 2021.

ALTERNATIVES

- 1) That the MVRD Board authorize staff to proceed with engagement on the draft *Climate 2050 Transportation Roadmap*, as presented in the report dated March 24, 2021, titled “Draft *Climate 2050 Transportation Roadmap*”.
- 2) That the MVRD Board receive for information the report dated March 24, 2021, titled “Draft *Climate 2050 Transportation Roadmap*”, and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

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

CONCLUSION

Metro Vancouver’s draft *Transportation Roadmap* lays out strategies and actions to transition regional transportation to carbon neutral by 2050. If endorsed by the Board, Metro Vancouver intends to seek feedback on the draft *Transportation Roadmap* from the public, stakeholders and other governments. This engagement will be undertaken in coordination with engagement on the draft *Clean Air Plan*.

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

Attachment

Climate 2050 Transportation Roadmap, draft dated April 2021 (44840617)

44479038



Climate 2050 Roadmap

Transportation

A pathway to carbon neutral transportation
in Metro Vancouver

April 2021

DRAFT

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

Metro Vancouver's Member Municipalities and Population



We heard you

The *Climate 2050 Transportation Roadmap* envisions what a carbon neutral and resilient transportation future can look like in Metro Vancouver. The focus of this *Roadmap* is on reducing greenhouse gases from all forms of transportation, and highlighting considerations to improve resiliency in our transportation networks. Metro Vancouver works with many organizations with responsibilities related to transportation planning, including TransLink.

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

Public feedback is valued, and project teams will seek input on this draft *Roadmap* through the Spring and Summer of 2021. We will create online feedback opportunities, and will continue to ensure feedback is reflected as we move forward with implementing these actions. Documents, feedback forms, and direct email links to the project team are all posted to the Metro Vancouver website, metrovanancouver.org, search “Climate 2050 Transportation Roadmap”.

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

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

The Roadmap at a Glance

We rely on our regional transportation system every day to work, study, play, and access important services. This system also ensures that goods move efficiently and reliably through our region. However, transportation is the largest source of greenhouse gas emissions in our region as a result of the fossil fuels used to power cars, trucks, trains, boats, and aircraft.

Although it is currently the largest source of regional greenhouse gas emissions, transportation is one of the best opportunities to start reducing emissions, particularly for personal transportation. The region is well positioned to continue with intentional land use planning that supports walking, cycling, transit, and other shared mobility modes. Electric vehicles are widely available and ready to be used on a regional scale.

As personal transportation transitions to being zero emission, medium and heavy trucks, marine vessels, aviation, and rail will become the largest sources of transportation greenhouse gas emissions in the region. Accelerating ongoing actions that support rapid development and scale-up of zero emission and low carbon options for these sectors, as well as new innovations in technology, will ensure that the transportation sector as a whole can transition to carbon neutrality by 2050.

Even as we reduce emissions from transportation, it is critical that we develop a transportation network that is resilient to the impacts of a changing climate. Some impacts from climate change are locked in, and will create vulnerabilities in our existing system. We must protect existing networks and infrastructure, and develop a resilient transportation system moving forward to ensure that regional transportation continues to be safe, reliable, and comfortable.

The *Transportation Roadmap* lays out 48 actions for reducing emissions and increasing resiliency, organized under the following six strategic areas:

1. Accelerate the Transition of the Passenger Vehicle Fleet to Electric Vehicles
2. Reduce Driving through Active Transportation and Public Transit
3. Reduce Heavy Truck Emissions and Support Early Adoption of Zero Emission Heavy Trucks
4. Reduce Marine, Rail, and Aviation Emissions
5. Protect Existing Transportation Networks from Future Climate Impacts
6. Develop Climate Resilient Transportation Networks

Although there is much work to be done, there are some important actions that need to be started soon in order to make a major difference in accelerating the region's drive to carbon neutral and resilient transportation. It is critical that the actions to reduce emissions identified in this *Roadmap* are implemented rapidly to set this transition in motion as soon as possible. Taking early action to reduce emissions can also help improve air quality, support health and well-being through exercise, and enhance low carbon resilience sooner rather than later.

We are not alone in this challenge. Many of Metro Vancouver's member jurisdictions, as well as the provincial and federal governments, have committed to ambitious targets and bold leadership to respond to the global climate crisis. The actions in this *Roadmap* demonstrate the importance of working collectively to reach these objectives, and will complement other plans guiding regional transportation. Together, we can create a carbon neutral and resilient regional transportation system.

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Climate 2050 Transportation Roadmap

A pathway to carbon neutral transportation in Metro Vancouver

Visioning Carbon Neutral Transportation in 2050

In 2050, everyday movement of people around the region in cars and trucks has transitioned from being the largest source of greenhouse gas emissions in the region to being completely emissions free. More Metro Vancouver residents live in walkable urban centres, can comfortably walk or bike for many of their day-to-day trips, and access convenient, reliable public transit to key destinations. Cars and trucks are powered by electricity and are zero emission, creating almost no air pollution and less noise. The regional transportation system integrates different modes and vehicle charging networks, creating a diverse range of clean, affordable transportation options for residents.

Local goods movement and transit produce no greenhouse gas emissions, with almost all vehicles powered by electricity or hydrogen. Large trucks, trains, marine vessels, and aircraft moving goods and people in and out of the region use biofuels and low or zero emission engines. The Metro Vancouver region is a leader in the use of innovative technologies for trains, marine vessels, and aircraft, and is a hub for low emission goods movement. Transportation networks are located and designed to be resilient to the impacts of a changing climate, ensuring safe and reliable transportation of people and goods in the region.

The Challenge

Transportation is the largest source of emissions in the region, but also has great potential to drastically reduce those emissions in the next 30 years. The majority of transportation emissions in our region come from fossil fuels used to power cars and trucks. Once a car or truck is purchased, it usually stays on the road for at least 10 years; most vehicles bought today will be in use in 2030. Trains, marine vessels, and aircraft also produce greenhouse gas emissions. The larger engines used in these modes of transportation pose an even greater challenge, as they are designed to last even longer and are very costly to replace.

Making it comfortable and easy to get around the region by walking, cycling, or using transit, and transitioning to zero emission engines and biofuels as soon as possible is critical in order for transportation to go from being the largest source of emissions to one of the smallest.

Call out Box: What is a Carbon Neutral Region?

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

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

Goals

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

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

It also sets an interim target of 45% reduction in greenhouse gas emissions from 2010 levels, by 2030.

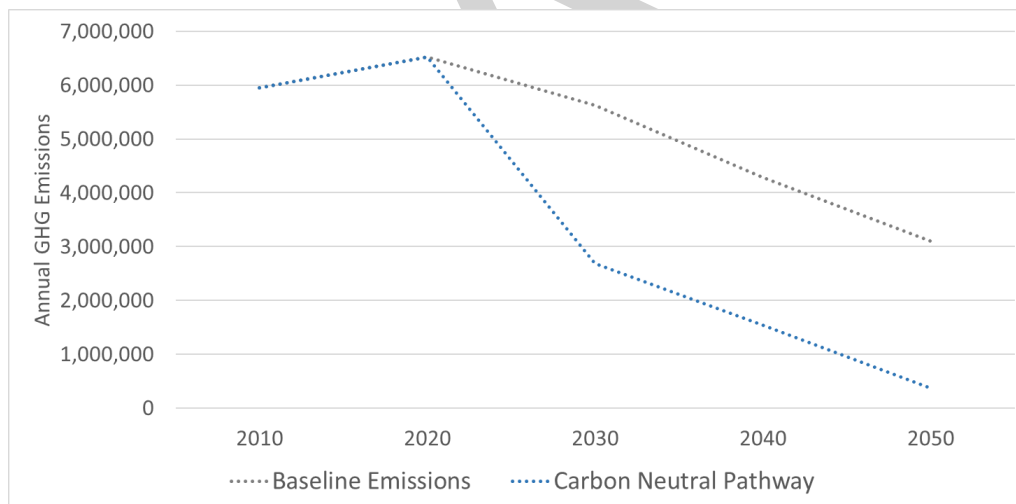
Achieving this vision means setting goals in each of the *Climate 2050 Roadmaps*, in order to ensure that each sector in the region plays as strong a role as possible in getting to a carbon neutral, resilient region.

Metro Vancouver has set these goals for transportation in this region, out to 2030 and 2050.

GOAL: All personal travel within the region is made by active transportation or using zero emission technologies powered by clean, renewable energy.	<u>Targets</u> By 2030: <ul style="list-style-type: none">- 65% reduction in greenhouse gas emissions, from 2010 levels By 2050: <ul style="list-style-type: none">- 100% reduction in greenhouse gas emissions- All passenger vehicles on the road are zero emission, powered by clean, renewable electricity or hydrogen
GOAL: All medium and heavy duty trucks and rail locomotives operating within the region use zero emission technologies powered by clean, renewable energy.	<u>Targets</u> By 2030: <ul style="list-style-type: none">- 35% reduction in greenhouse gas emissions, from 2010 levels By 2050: <ul style="list-style-type: none">- 100% reduction in greenhouse gas emissions- All medium duty trucks are zero emission, powered by clean, renewable electricity or hydrogen- All heavy duty trucks and rail locomotives use either zero emission technologies or biofuels
GOAL: All aircraft and marine vessels operating in the region use low emission and zero carbon technologies powered by clean, renewable energy.	<u>Targets</u> By 2030: <ul style="list-style-type: none">- 35% reduction in greenhouse gas emissions, from 2010 levels

	<p>By 2050:</p> <ul style="list-style-type: none"> - 75% reduction in greenhouse gas emissions, from 2010 levels
<p>Goal: the regional transportation system is safe, reliable, and resilient to the current and future impacts of climate change.</p>	<p><u>Targets</u></p> <p>By 2030:</p> <ul style="list-style-type: none"> - All major transportation infrastructure projects are located outside of areas with known, unmitigated climate hazards <p>By 2050:</p> <ul style="list-style-type: none"> - All transportation networks and infrastructure are protected from current and future impacts of climate hazards

The diagram below compares a baseline scenario – the pathway we are on now – with the pathway needed to reach a carbon neutral future, in line with the targets described above.



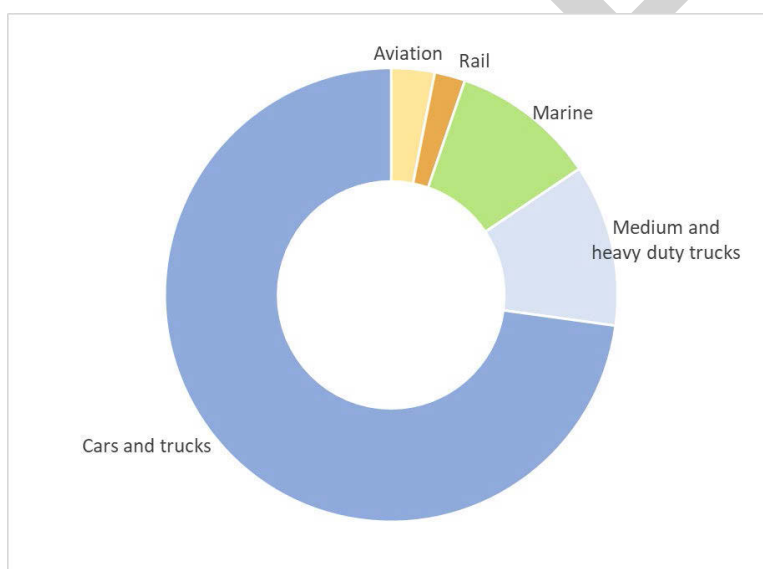
Emissions trajectory comparison for regional transportation emissions (all subsectors), comparing our baseline pathway to a potential pathway to regional carbon neutrality.

Reaching these ambitious goals will require extensive collaboration with key partners. Many of the actions identified in this Roadmap will be led by other governments (e.g., national, provincial, local, First Nations), TransLink, and industry. Metro Vancouver has a long history of working with all levels of government towards common goals. Fortunately, many of the organizations needed to make this transition are already actively working toward similar goals, including the Provincial Government and its *CleanBC* plan, the Federal Government's climate plan called *A Healthy Environment and a Healthy Economy*, Metro Vancouver's member jurisdictions, community and corporate climate plans, TransLink, utilities, First Nations, and, increasingly, industry associations.

Emissions from Transportation in Metro Vancouver

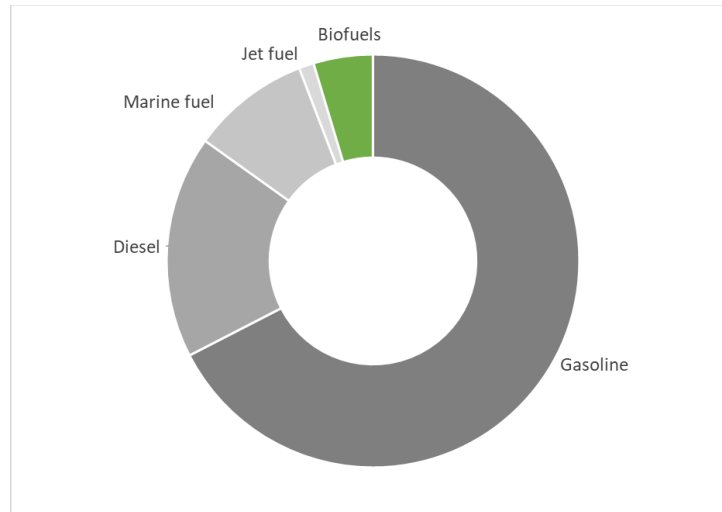
The movement of people and goods – whether by car, truck, train, aircraft or boat – is the largest source of greenhouse gas emissions in Metro Vancouver, accounting for over 40% of total annual regional greenhouse gas emissions. The 1.5 million passenger cars and trucks registered in the region make up most of those emissions, accounting for almost 75% of transportation emissions. 40,000 medium and heavy duty trucks registered in the region (plus the trucks registered elsewhere that travel in and out of the region) generate over 10% of regional transportation emissions.

Around 150 million tonnes of cargo are handled at port terminals in the region every year, supporting the regional economy. This cargo movement is the main driver of marine vessel emissions in the region, though passenger ferries, cruise ships, harbour vessels, and pleasure craft are also sources of emissions. Together, marine transportation causes about 10% of transportation emissions. Trains used for goods movement accounts for most rail emissions in the region. Along with a small amount of passenger rail travel, this contributes about 2% of transportation emissions. Airports in the region handle 25 million passengers per year, which generate about 3% of regional transportation emissions. While aviation and marine emissions account for a relatively small amount of local greenhouse gas emissions, they are a significant source of emissions globally.



Breakdown of Metro Vancouver transportation greenhouse gas emissions

Virtually all of the energy used to power transportation is fossil fuel based, the majority of which is gasoline and diesel used in cars and trucks. A small amount of natural gas is used as a fuel for compressed natural gas vehicles, such as transit buses. Marine vessels and aircraft use specialized fossil fuels. Most of the trains in the region use diesel, though the SkyTrain network runs on electricity. In recent years, the advent of electric vehicles and biofuels have introduced the use of some zero emission vehicles and low carbon biofuels, but these still account for a very small proportion of overall energy use in transportation.



Breakdown of transportation energy use. Compressed natural gas not shown as it accounts for less 1% of total energy use. Electricity is not shown; currently, electricity use for transportation is estimated to be small relative to other fuel types.

Call out Box: The Connection between Climate and Air Quality

In addition to being the region's largest source of greenhouse gas emissions, the transportation sector has a significant impact on regional air quality. It generates about half of diesel particulate matter, over half of nitrogen oxides, and roughly a third of sulphur oxides produced by all sectors in the region.

Residents in the region generally experience good air quality. However, health researchers have demonstrated that there are no known safe levels for some air contaminants that are harmful to human health. Many air quality impacts are localized and can be felt more in key transportation corridors and hubs, negatively impacting human health.

Metro Vancouver is responsible for managing and regulating air contaminants in the region, including greenhouse gases from transportation, under its authority delegated by the BC Government in *the Environmental Management Act*. The *Clean Air Plan*, Metro Vancouver's air quality and greenhouse gas management plan, will reduce health-harming air contaminant emissions and impacts in our region over the next 10 years. As many of the same actions that reduce greenhouse gases also reduce health-harming air contaminants, this supports the 30-year goal of a climate neutral region by 2050 while also working towards regional air quality targets. Actions in this Roadmap and the *Clean Air Plan* will help reduce all of these emissions to protect human health.

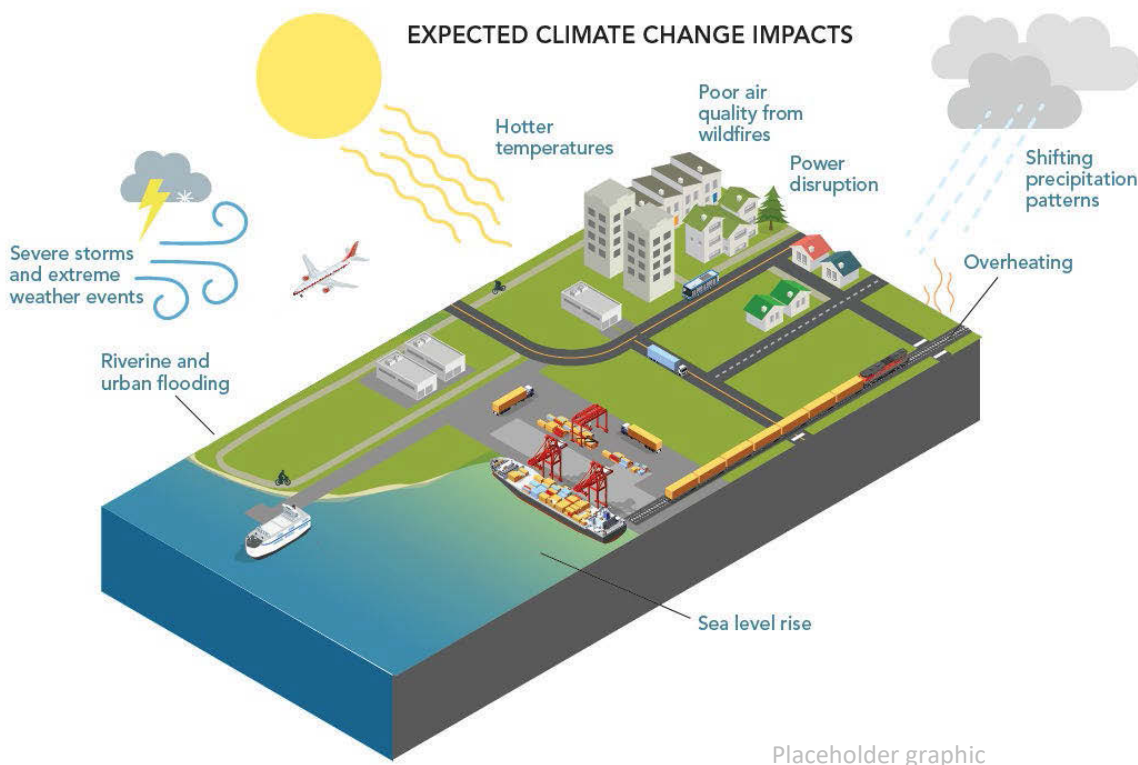
Climate Change Impacts on Transportation

We rely on our transportation system to reliably and comfortably get around the region and beyond, and for the supply of goods that we use every day. Ensuring that the transportation system is resilient to the impacts of a changing climate is essential. Transportation networks function smoothly due to infrastructure including roads, bridges, rail lines, transit, bike lanes, sidewalks, ports, ferry terminals, and airports. Most of this infrastructure lasts for decades, but has not always been designed to accommodate the anticipated impacts of climate change.

Metro Vancouver Climate Change Projections

While reducing regional greenhouse gas emissions will contribute to the global effort against climate change, some impacts from a changing climate are locked in and are likely to occur even with drastic emission reductions. There are already a number of projected changes to local climate conditions in Metro Vancouver:

- **Warmer temperatures:** with increasing daytime and nighttime temperatures, there will be more hot summer days and fewer winter days with frost or ice.
- **Longer summer dry spells:** summer rainfall will decline by nearly 20%, with increased likelihood of extended drought periods.
- **Wetter fall and winters:** although on average the total annual rainfall is expected to increase by just 5%, there will be a large increase in rainfall during fall and winter.
- **More extreme precipitation events:** more rain will fall during the wettest days of the year and the frequency of extreme rainfall events will increase.
- **Decreased snowpack:** the deep spring snowpack in the mountainous watersheds is expected to decrease by over 50% compared to present day.
- **Sea level rise:** in addition to these weather-related changes predicted in our region, warming global temperature is projected to bring at least 1 metre of sea level rise by 2100, which will impact coastal areas in the region.



Climate Change Impacts on Regional Transportation

Existing and new transportation infrastructure will need to adapt to increasing impacts from:

- **Riverine and urban flooding** caused by periods of heavy rainfall during extreme weather events such as storms, or as a result of major spring freshets (snow melts) linked to changing snowpack. This can lead to localized flooding, power failures, landslides, and disruptions to the transportation system.
- **Sea level rise**, which will impact coastal areas in our region, threatening low elevation parts of the transportation network with flooding. Sea level rise can also magnify the impact posed by other hazardous conditions in coastal areas such as subsidence (land sinking), king tides and storm surges, and heavy winds and precipitation caused by storms.

- **Heatwaves, wildfires, and droughts** caused by warmer temperatures and changing precipitation patterns can impact the safety and comfort of walking, cycling, and taking transit. Major wildfire events could also disrupt inter-regional travel.

These impacts could have consequences to this region's transportation networks in numerous ways, such as:

- **Provincial highways, municipal arterial roads, and local roads** around the Fraser River and Burrard Inlet may be susceptible to flooding that could disrupt emergency services, delay goods movement, and isolate residents and workers. Wildfires and landslides pose additional threats by affecting transportation access in and out of the region.
- **Public transit** across the region could be impacted by flooding through disruptions to services and infrastructure for SkyTrain, West Coast Express, SeaBus terminals, and roads used by transit buses which would prevent residents and workers from travelling for work, school, recreation, and access to other services.
- The **Vancouver International Airport** is located at sea level so its runways, terminal grounds, and access roads are vulnerable to flooding and sea level rise. Flooding could also impact smaller regional airports such as Boundary Bay Airport, Pitt Meadows Airport and Delta Heritage Air Park.
- **Truck routes and rail lines** servicing the Vancouver Fraser Port Authority and industrial lands in the region could be damaged or disrupted by flooding, sea level rise, storm surges and heat waves, which could have cascading effects for supply chains.
- **BC Ferries terminals** could be susceptible to sea level rise, flooding and increased delays from high winds, impacting passenger transportation as well as goods movement.
- **Bike lanes and regional greenways** could be prone to flooding if they are located near natural areas or along the Fraser River. Additionally, hotter temperatures and degraded air quality from wildfire activity may result in dangerous conditions for walking and cycling.

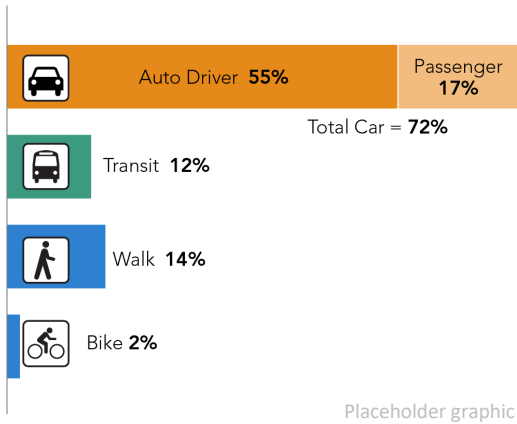
Zero Emission, Low Carbon Transportation

Emissions from transportation are caused by engines using fossil fuels, such as gasoline and diesel. The two key pathways to reducing emissions in transportation are to shift trips to active transportation, transit, and more energy efficient vehicles, reducing the use of fossil fuels, and to increase the use of zero emission vehicles and biofuels. Reducing the amount of driving in cars and trucks is a first step towards reducing transportation emissions, but achieving significant emission reductions in transportation will also mean switching from fossil fuels to clean, renewable energy that is zero emission or low carbon and replenished over days or years. Some modes of transportation, like cars or small trucks, are rapidly developing electric options. Other types of vehicles, such as heavy trucks used for goods movement, are more technologically challenging to electrify, and may rely more on the use of hydrogen or biofuels to reduce greenhouse gas emissions. Trains, ships, and aircraft are large, complex pieces of equipment that move between regions and countries, and face some unique challenges.

Reducing Driving

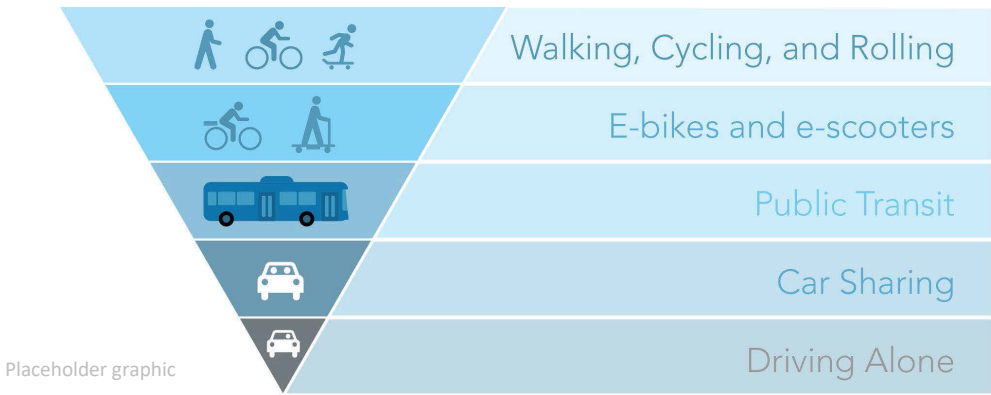
Over 70% of all trips in the region are made by car, and most of those are made by cars with a single occupant, the driver. However, there are many ways residents and visitors can make their daily trips: walking, cycling, taking transit, and driving with or without other passengers. These different modes have different impacts on greenhouse gas emissions. When people walk or cycle to their destination, they do not produce any emissions. On transit, one bus or train replaces several individual car trips. Carpooling also reduces the number of cars on the roads. New technologies and services like electric bicycles, car sharing, and ride hailing help reduce the need for people to drive or own their own car. These are all ways to reduce emissions by driving less. Driving less also means using less energy in cars, freeing up clean, renewable energy for use in other modes of transportation or sectors.

REGIONAL DAILY TRIPS BY MODE



Many of the modes which produce little to no greenhouse gas emissions also have significant co-benefits. People who walk, cycle and ride transit enjoy lower transportation costs and improved health and well-being. Reduced driving can lessen road congestion. Having multiple ways to get to and from key destinations also helps create a system that is more resilient to climate impacts.

Better Transit Choices



By shaping our neighbourhoods and communities with effective urban design, land use, zoning, and allocation of road space, we can create complete, compact communities that make walking, rolling and cycling well connected and comfortable for most short trips, and result in more efficient trips by car. Complete communities also support a frequent and efficient transit network that connects key destinations with comfortable, reliable service. However, even as the region continues to build towards well-connected, compact communities served by transit, many trips will be taken by vehicles. In order to eliminate greenhouse gas emissions from personal transportation, we need to find ways to make our vehicles zero emissions.

Call out Box: Working Together to Reduce Regional Transportation Emissions

Strong regional land use policies are foundational to achieving the targets in the *Climate 2050 Transportation Roadmap*. There are several organizations that manage regional land use and transportation planning:

Metro Vancouver, in partnership with its member jurisdictions, manages regional land use and growth through the *Regional Growth Strategy*, which is being updated to extend to 2050 (*Metro 2050*). The *Strategy* outlines a vision for a compact region with a network of complete communities well connected by public transit.

TransLink is responsible for regional transportation planning, managing regional road networks, and delivering transit services. TransLink is currently developing *Transport 2050*, the region's long range regional transportation strategy, which will guide investment and planning decisions for the regional transportation system over the next 30 years. Together, *Metro 2050* and *Transport 2050* will shape how we live and move.

The **BC Government** is responsible for major transportation infrastructure such as highways, provides funding for capital projects, and sets policy to meet provincial environmental and economic objectives.

The *Transportation Roadmap* links together land use, transportation planning, and emissions reducing technologies to identify a pathway to reaching a carbon neutral and resilient transportation sector. This includes actions by other organizations that affect the regional transportation system.

Zero Emission Transportation Options

Electricity is a well-known zero emission source of energy that we already encounter every day. In British Columbia, almost all of the electricity that we use is generated from hydropower, making electricity a form of clean, renewable energy. When electricity is used as a source of energy to power vehicles in Metro Vancouver, there are no emissions from the tailpipe. Electric vehicles have become an increasingly familiar sight on the road, and are the best known type of zero emission vehicles. TransLink's fleet of transit vehicles also makes use of electric trolleys with overhead wires, and they have committed to transitioning to a 100% renewably powered fleet by 2050 through the *Low Carbon Fleet Strategy*.

British Columbia has world-leading legislation in place (the *BC Zero-Emission Vehicles Act*) that requires that more new cars and small trucks sold in British Columbia are zero emission, reaching 100% of new vehicle sales by 2040. However, because most vehicles stay on the road for at least 10 years after they are purchased, it will take a long time for gasoline and diesel powered vehicles purchased over the next two decades to reach the end of their lifecycle and be replaced with new zero emission vehicles. Additionally, these sales targets allow for the use of plug-in hybrid vehicles. As these vehicles use gasoline or diesel as a fuel in addition to electricity, they are not truly zero emission, but can be a low emission alternative to conventional fossil fuel-powered vehicles.

While electric vehicles are an important technology to reduce emissions from transportation, not all modes of transportation are ready to move to fully electric technologies. Electrifying some types of medium and heavy duty trucks is more challenging due to the heavier loads they carry, specialized operating needs, long driving ranges, and lack of rapid electrical charging in dispersed, remote destinations outside of the region. Electric options for ferries and small aircraft are available, but still very much under development. Larger marine vessels and aircraft are difficult to electrify due to the long distances they travel and specific operating demands, and no fully electric options are available for the largest and most complex of these. Electric rail locomotives are used widely in other parts of the world, such as Europe. However, transitioning inter-provincial railways to these zero emission fuels is costly and requires coordination at the provincial and national level.

Hydrogen can also be a zero emission fuel. Hydrogen technologies are emerging for all transportation modes, and could play an important role in helping some modes that are challenging to electrify transition to zero emission technologies. While hydrogen engines generally produce zero tailpipe greenhouse gas emissions, hydrogen can be

produced using carbon intensive means that affect its overall carbon footprint. When produced using clean, renewable energy, hydrogen can be a zero emission and low carbon transportation fuel.

Call Out Box: Hydrogen: A Zero Emission Fuel?

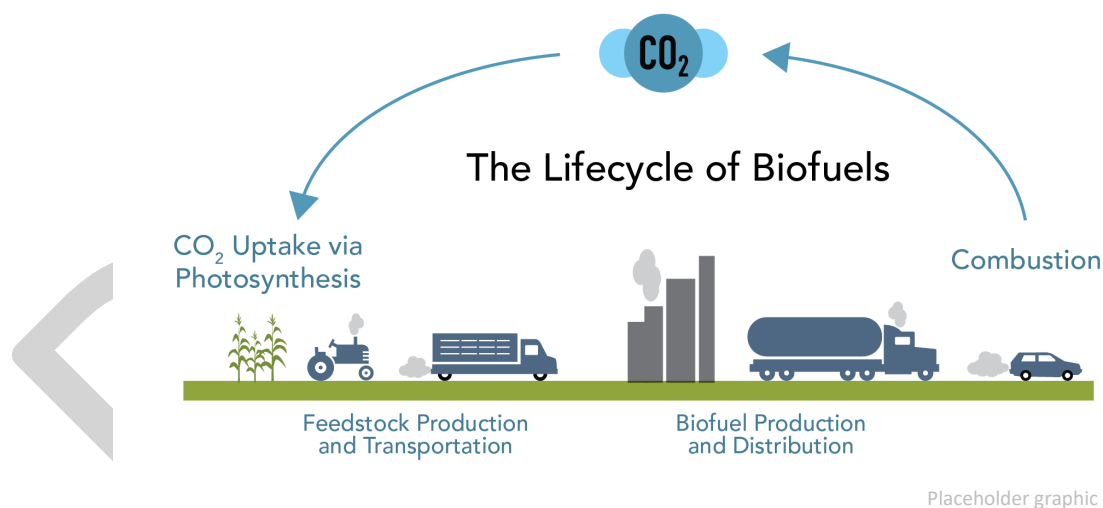
There are several different means of production for hydrogen that determine how emission intensive it is:

- **Grey hydrogen** is produced using natural gas, creating significant greenhouse emissions and a reliance on fossil fuels.
- **Blue hydrogen** is also produced using natural gas, but the emissions created during production are captured and stored.
- **Green hydrogen** is produced using electricity, and can be a zero emission and zero carbon fuel if the electricity used is generated from clean, renewable sources.

In the transportation sector, hydrogen can be used to power vehicles, marine vessels, trains, and more in the form of **hydrogen fuel cells** or as **fuel for an internal combustion engine**. These technologies release water vapor from the tailpipe, and don't produce direct greenhouse gas emissions. However, hydrogen combustion engines may produce some nitrogen oxides, a health-harming air contaminant.

Strategic Use of Low Carbon Biofuels

In addition to zero emission sources of energy such as electricity and hydrogen, there are a number of fuels that have a low carbon footprint and are produced from organic matter derived from biomass such as plants. These biofuels are renewable and can be a low carbon source of energy. To use some of these fuels, specialized engines may be required, whereas others can be used directly in regular gasoline and diesel combustion engines. While not as visible as electric cars on the road, this is another example of a climate solution we already encounter every day. As a result of the BC Low Carbon Fuel Standard and federal requirements, a small proportion of biofuels are blended into the regular gasoline and diesel that we use in British Columbia.



Though biofuels can be low carbon alternatives to gasoline and diesel, they still produce tailpipe greenhouse gas emissions as well as air contaminants that can have negative impacts for public health and the environment. Feedstocks must be carefully managed to ensure that greenhouse gas emissions are balanced with carbon uptake in order for biofuels to be truly low carbon. While biofuels are currently available and used in limited quantities, widespread use could have consequences for the way that we use agricultural land, forests, and other ecosystems. Some biofuels and renewable gas are produced in the region, including production at a number of Metro

Vancouver facilities. However, biofuels produced outside of the region will be needed to meet demand. A lifecycle view of the carbon emissions from biofuels is needed to ensure that they are a low carbon alternative to fossil fuels and do not have unintended ecological impacts.

If used strategically, biofuels have the potential to displace the use of fossil fuels in large and specialized trucks, rail locomotives, aircraft, and marine vessels that are difficult to electrify, especially in the short term while new zero emission technologies are developed. Biofuels can also lower the carbon footprint associated with hybrid technologies that are not solely powered by electricity.

Call Out Box: Low Carbon Transportation Biofuels

Low carbon diesel fuels include biodiesel and renewable diesel:

- **Biodiesel** is made from vegetable oils (such as canola) and waste animal fats. It can be blended in fossil diesel in amounts up to 20% and used in conventional diesel engines. When used in higher amounts, a specialized engine is required.
- **Renewable diesel** is also made from vegetable oils and animal fats, but is produced using a different process that makes the end fuel identical to fossil diesel. Because there is no chemical difference from fossil diesel, renewable diesel can be used directly in conventional diesel engines in amounts up to 100% without requiring engine modifications.

Ethanol is the most common renewable alternative to gasoline. Made from plants such as corn or sugar cane, it can be blended in regular gasoline in amounts up to 10% before a different engine is required. Flex fuel vehicles that can accommodate gasoline blends with up to 85% ethanol have become increasingly common in North America.

Renewable natural gas is produced from decomposing waste, and can be used in compressed natural gas vehicles and other equipment as a renewable, low carbon alternative to fossil natural gas.

There are specialized types of renewable fuels for aircraft and marine vessels, such as **sustainable aviation fuel**.

Low Carbon Aircraft, Trains, and Ships

All modes of transportation move in and out of the region some of the time, but aircraft, trains, and ships almost exclusively travel in and out of the region. They often travel long distances that cross provincial and international borders. Marine and air movement between countries is governed by international organizations such as the International Maritime Organization and the International Civil Aviation Organization. Policies and standards adopted by these organizations, action taken by other countries, and actions by the federal government are key determinants of whether and how these sectors will reduce greenhouse gas emissions. Rail transport faces similar challenges, as rail lines coming into and out of the region are subject to federal regulations and, when they cross the American border, the United States' regulations. National and international cooperation is essential to find ways to reduce emissions in these sectors.

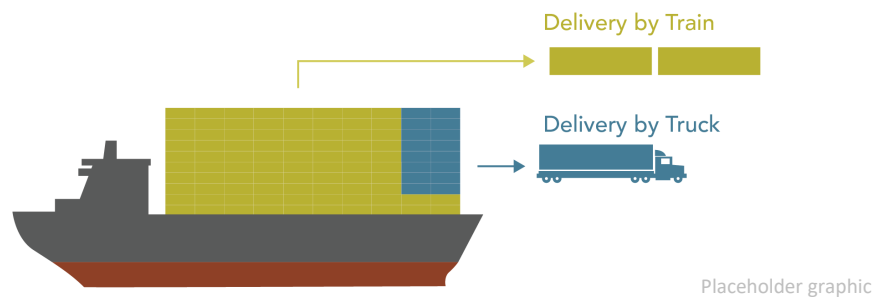
Call Out Box: Working Across Borders to Reduce Emissions

Canadian National Rail and **Canadian Pacific Rail** are the two major freight railways in Canada, both of which operate in the Metro Vancouver region. They are subject to legislation and regulation by the federal government. While Transport Canada has regulations in place to manage air contaminants from rail, there is no federal strategy in place to significantly reduce greenhouse gas emissions from rail. Some rail lines in the region also cross the American border, creating a need for international alignment.

The **International Maritime Organization (IMO)** is a United Nations agency with responsibility for the prevention of marine and atmospheric pollution by ships, as well as their safety and security. It has committed to a target of reducing total annual greenhouse gas emissions from international shipping by at least 50% by 2050 (compared to 2008). It has also introduced technical and operational emission reduction measures for new ships. Individual member nations, like Canada, are responsible for adopting, implementing, and enforcing IMO requirements within their own domestic regulations.

The **International Civil Aviation Organization (ICAO)** is a United Nations agency that facilitates regulatory alignment between 193 member nations. It has adopted the aspirational goals of carbon neutral growth for the international aviation sector from 2020 onwards, as well as 2% annual fuel efficiency improvement from 2021 to 2050. Member nations are responsible for developing their own regulatory approaches to reaching these goals.

The Metro Vancouver region is as a key hub for goods movement and air travel in Canada and the Pacific Northwest through Canada's largest port, The Port of Vancouver (operated by the Vancouver Fraser Port Authority), as well as Canada's second busiest airport, the Vancouver International Airport. The region can leverage this position and accelerate change in these sectors by creating opportunities that support the use of zero emission technologies and biofuels. Developing supply chains for biofuels, offering access to infrastructure for zero emission engines and biofuels, using zero emission technologies for smaller vessels and shorter in-region trips, and establishing requirements for trains, planes, and ships that service the region are important components of a larger national and international approach to reducing emissions in these sectors. Actions taken in the region can help reduce aviation and marine emissions well beyond Metro Vancouver's borders.



Metro Vancouver is a hub for goods movement through the largest port in Canada, the Port of Vancouver

Ferries and local airlines move passengers between Metro Vancouver and neighbouring regions. Some of these, such as BC Ferries and Harbour Air, have introduced the use of innovative zero emission technologies. BC Ferries operates a number of battery-equipped ships on shorter routes. The ships are designed for full electric operation, but are fitted with hybrid technology that bridges the gap until shore charging infrastructure becomes available. Harbour Air has demonstrated the world's first fully electric commercial aircraft in a short test flight, and is advancing this technology for use in full length commercial flights in the future.

In addition to reducing greenhouse gas emissions from air, marine, and rail sources, it is critical that key transportation corridors and facilities such as ports, airports, and rail lines are resilient to the impacts of future climate hazards to minimize disruptions to goods movement, supply chains, and personal travel. Ships and aircraft used for goods movement, as well as ferries and rail lines used for passenger travel, must be adapted to a changing climate to ensure that connections to neighbouring regions and islands are reliable and safe.

Social Equity

We must ensure no one is left behind in the transition to a carbon neutral and resilient region. Metro Vancouver's efforts to move towards zero emission and low carbon transportation will continue to incorporate the voices and needs of a full range of communities to ensure that fairness and equity are of the highest priority. Organizations responsible for transportation related climate policies must consider whether inequity is created or magnified, and address these inequities to ensure a just transition.

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

Barriers and Opportunities

The transportation sector presents an important opportunity to reduce regional greenhouse gas emissions in the next ten years and beyond, leading early emission reduction efforts in the region. Member jurisdictions, such as the City of Vancouver, and the BC government are global leaders in taking action to reduce transportation emissions, and have put in place a number of policies that provide a strong foundation. However, additional action is needed to leverage this opportunity to its full potential.

Reduce Driving through Compact Communities

Underpinning shifts in the technologies and fuels we use to move people and goods will be the continued development of a compact region. Existing compact communities along transit networks and around transit hubs bring people closer to the places they wish to go and facilitate some of the highest public transit ridership levels in North America. However, the population of Metro Vancouver is expected to grow from 2.7 million to 3.8 million, an increase of over 40%, from 2020 to 2050. It is critical that regional growth is concentrated in compact, transit serviced areas to minimize growth in car use and driving distances. Ensuring that more people live in compact communities that are well-connected to work, school, services, and amenities will enable a more affordable, resilient, and efficient transition to zero emission day-to-day trips.

Rapid Uptake of Electric Vehicles

Electric vehicle and charging technologies have advanced substantially in recent years. Costs continue to decline, driving ranges are getting longer, and charging is getting faster. More makes and models will soon be available for larger vehicles. However, there are still barriers to rapidly increasing the amount of electric vehicles on the road:

- **Lack of affordable used electric vehicles.** Electric vehicles for personal use are widely available, inexpensive to charge, and declining in up front cost, but they still cost more than their fossil fuel counterparts and there is not yet an affordable used market for them. This creates inequities for lower income groups, and slows down the uptake of electric vehicles.
- **Diverse vehicle models are needed.** A greater variety of different electric vehicle models, such as SUVs, vans, and pickup trucks, are needed to meet diverse needs. Electric options are under development and will be available in coming years, but are not yet widely available for purchase.
- **Access to charging in large buildings can be challenging.** It can be expensive and complicated to access and install charging in large commercial and residential buildings like condos, townhomes, and multi-unit rentals. Better access to charging in these types of buildings is needed to support widespread electric vehicle uptake.
- **Infrastructure to support electric vehicle charging is needed.** As more people start using electric vehicles, new public fast charging stations and networks will be needed to support longer trips. A modernized electricity grid that integrates smart grid technologies can also help to support vehicle charging as electricity demand changes as a result of widespread electric vehicle use.

- **Accelerating electric vehicle uptake.** While the *BC Zero-Emission Vehicles Act* mandates sales targets for new electric vehicles, every new gasoline or diesel car sold in 2021 is likely to remain on the road until at least 2030. Additionally, market demand in the Metro Vancouver region has already exceeded regulated sales targets for early years. Finding ways to further accelerate electric vehicle uptake beyond the Provincial minimums to get more electric vehicles on the road earlier is a critical pathway to drastically reduce greenhouse gas emissions over the next ten years and beyond.

Reducing Emissions from Medium and Heavy Duty Trucks

Medium and heavy duty trucks used commercially will be slower and more difficult to transition to zero emission technologies than smaller vehicles used for personal transportation. It is unlikely that all of these vehicles will be ready to transition to zero emission technologies by 2050, creating a need for low carbon alternatives to bridge that gap. There are a number of barriers to wider adoption of zero emission and low carbon commercial vehicles:

- **Availability of zero emission vehicles is limited.** While there are several electric and hydrogen models developed for medium and heavy duty trucks, very few are in use and they are not yet widely available in British Columbia. The market for these vehicles must be expanded to make it possible to purchase zero emission vehicles in large quantities for a variety of commercial purposes.
- **Existing technologies have high up front costs.** The up front cost of zero emission vehicles is considerably higher than their conventional fossil fuel counterparts. As the market develops and production scales up, these costs are likely to follow trends in passenger vehicles and drop quickly. However, action is needed to accelerate market demand. Financial support will be needed to facilitate this transition.
- **Biofuel supply and availability is not yet developed.** Though some biofuels are already in use in gasoline and diesel used in the Metro Vancouver region, a significant ramp up of supply, production, and distribution of these fuels is needed before they can be deployed on a wider scale. As these supply chains develop, carbon intensity requirements are needed to ensure that biofuels have a lifecycle climate benefit.
- **Access to recharging and refueling outside the region may lag behind.** Recharging and refueling options for zero emission and low carbon vehicles will be more difficult to access for commercial vehicles that travel in and out of the region to far or remote destinations where access to fast electric charging, hydrogen refueling, and biofuels may not develop at the same pace as regional infrastructure.

Zero Emission and Low Carbon Technologies for Marine Vessels, Rail Locomotives, and Aircraft

As on-road vehicles transition to zero emission technologies and biofuels, marine vessels, rail locomotives, and aircraft will become the largest remaining sources of regional transportation greenhouse gas emissions. Additionally, as our economy grows, goods movement within and through the region will continue to grow, compounding the need to reduce emissions from marine and rail while maintaining a competitive local economy. However, reducing emissions from these sources is challenging for a number of reasons:

- **Innovative zero emission and low carbon technologies are still under development.** While there are some electric and hydrogen options developed for rail locomotives and small ferries, zero emission options for aircraft, harbour tugs, and large marine vessels are virtually non-existent. Rapid innovation in these modes is needed to develop and scale up production of viable zero emission technologies, especially as many of these engines last for decades and will still be in use in 2050.
- **Global demand for biofuels requires complex supply chains and large quantities of feedstocks.** Widespread use of biofuels for global marine and air movement will require huge amounts of these fuels and a high degree of coordination at production and refueling facilities around the world. A better understanding of global supply and production constraints is needed to effectively build a role for biofuels in sectors with significant international connections.
- **National and international cooperation is needed to effectively reduce emissions.** Cooperating with research institutions, industry partners, international agencies such as the IMO and ICAO, and other governments – locally, provincially, federally and internationally – will be key to developing new

technologies and building reliable refueling and recharging networks. A shared vision for emission reductions is needed to ensure these sectors are on a pathway to carbon neutrality.

The Journey to Carbon Neutral, Resilient Transportation

Call out Box: Linkages to Other *Climate 2050 Roadmaps*

There are many linkages between transportation and other *Climate 2050* issue areas. Some of the related issue areas for transportation include:

Land use and growth management – policies that support more compact, complete communities influence the form and location of the transportation network, how people move and how goods are transported;

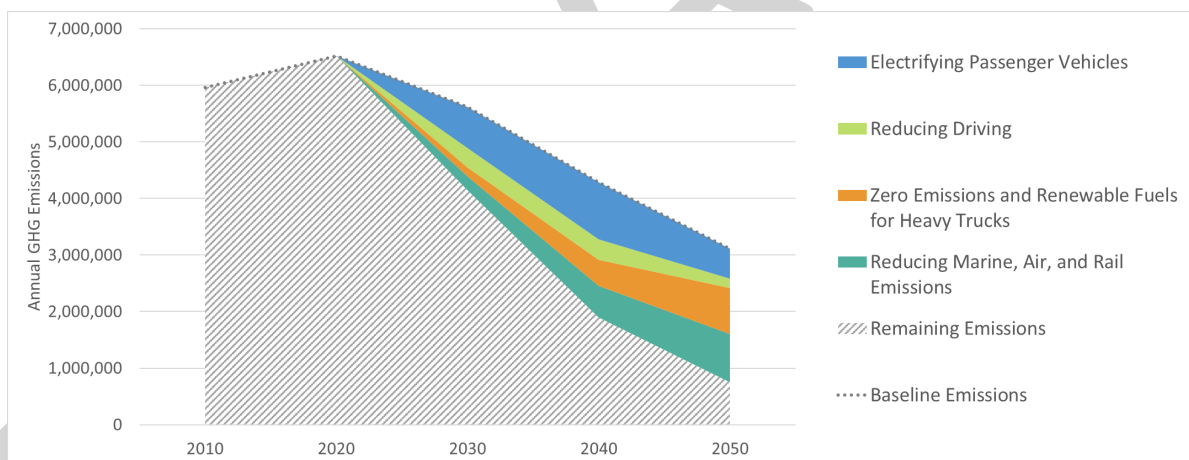
Infrastructure – the regional transportation network includes infrastructure such as roads, rail lines, bridges, and bike paths;

Energy – availability of clean, renewable energy to power regional transportation;

Human health and well-being – active transportation modes improve public health;

Buildings – home and workplace charging for electric vehicles will become more common, and;

Industry – delivery of goods and provision of services impact the amount and types of transportation that take place in the region.



Potential impacts of the strategies and actions described in the Roadmap

Strategy 1: Accelerate the Transition of the Passenger Vehicle Fleet to Electric Vehicles

The 1.5 million passenger vehicles registered in the region are our largest source of greenhouse gases, contributing almost a third of all regional emissions. Electrifying passenger vehicles is the fastest way to significantly reduce these emissions, though work is needed to ensure that electric vehicles and charging infrastructure are reasonably accessible to everyone, including lower income households. The *BC Zero-Emission Vehicles Act* provides a pathway to 100% zero emission vehicle sales by 2040, but this timeline should be accelerated to get more electric vehicles on the road faster.

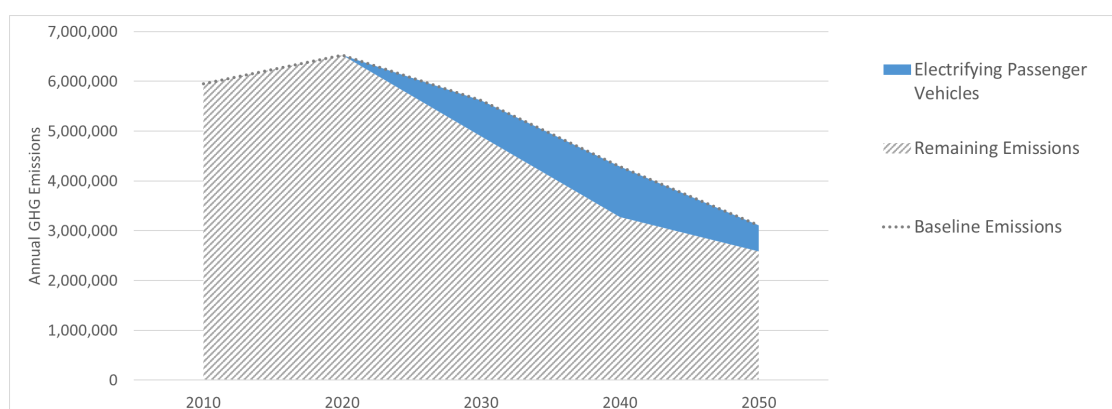
Potential Impacts of Strategy

Reduce annual greenhouse gases by up to **710,000 tonnes** by 2030

Reduce annual greenhouse gases by up to **520,000 tonnes** by 2050

Key Partners

- Member jurisdictions
- BC Government
- BC Hydro



Potential greenhouse gas emissions reductions associated with Strategy 1, Accelerate the Transition of the Passenger Vehicle Fleet to Electric Vehicles

- 1.1 Accelerate Sales Targets for New Electric Vehicles. (BIG MOVE)** Advocate to the BC Government to accelerate the sales targets in the *BC Zero-Emission Vehicles Act* to reach 100% zero emission vehicle sales by 2030 (instead of current 2040 target). The BC Government should also modify the *Act* to prioritize 100% electric vehicles.
- 1.2 Develop Regional Emission Requirements for Passenger Vehicles. (BIG MOVE)** Develop regulatory emission requirements for existing passenger vehicles, to be implemented by the BC Government or Metro Vancouver. Requirements could include low or zero emission zones, or a vehicle emission levy with rebates for replacing older vehicles. Any regulatory program must consider equity and be coordinated with member jurisdictions. Any program could also support actions focused on reducing total driving distances, including Action 2.3 on regional mobility pricing.
- 1.3 Make Electric Vehicles More Affordable. (BIG MOVE)** Advocate to BC Government, Government of Canada and other regional partners to continue providing funding (e.g., incentives, loans and tax credits) for the purchase of new and used electric vehicles. Funding should be available for personal and business purchases and should prioritize groups who generally cannot afford these vehicles without funding programs, such as low and middle income residents.
- 1.4 Regional Electric Vehicle Charging Strategy.** Develop a long-term regional strategy for electric vehicle charging infrastructure, coordinating with member jurisdictions, energy utilities, TransLink, and other regional partners. A strategy would identify where additional publicly accessible electric vehicle chargers are needed to ensure equitable access, as well as provide guidance on user fees, design and siting. The strategy should align with similar actions for medium and heavy duty trucks (Action 3.6).
- 1.5 Make New Passenger Vehicles Cleaner.** Advocate to the Government of Canada to adopt more stringent fuel economy and emission standards for new passenger vehicles.
- 1.6 Expand Electric Vehicle Charging in Buildings.** Work with member jurisdictions, BC Government, BC Hydro and Government of Canada to expand access to electric vehicle charging in buildings. This should include adoption of provincial “Right-to-Charge” legislation as well as code requirements that new or substantially renovated

buildings are wired for electric vehicle chargers. Expanding access should also include increased support and funding (e.g., incentives, loans, tax credits) for electric vehicle charging in existing buildings. Funding should prioritize groups who generally would not have access to chargers, such as residents living in rental buildings, strata buildings, non-market housing or secondary suites.

- 1.7 Electric Vehicle Outreach Programs.** Enhance existing and deliver new public outreach programs about the benefits of electric vehicles and how to install electric vehicle chargers at workplaces and multi-family buildings, working with member jurisdictions and other regional partners.
- 1.8 Accelerated Electrification Targets for Ride-Hailing Services.** Advocate to BC Government to establish vehicle electrification targets for ride-hailing and taxi fleets.
- 1.9 Transition the Corporate Fleet to Zero Emissions. (CORPORATE LEADERSHIP)** Transition Metro Vancouver's corporate on-road fleet to zero carbon emission between 2035 and 2040, and zero emission by 2050. The transition would include both passenger and medium and heavy duty vehicles.

Strategy 2: Reduce Driving through Active Transportation and Public Transit

Transportation emissions at the community scale are driven by where people live, work, study and play. The Metro Vancouver *Regional Growth Strategy* and the *Regional Transportation Strategy* both outline policies to help create communities that are complete, compact, and transit oriented. When people live closer to where they work, study and play, more trips can be made by walking and cycling and on public transit. Emerging technologies and services such as electric bicycles and car sharing can also support a wider range of transportation options.

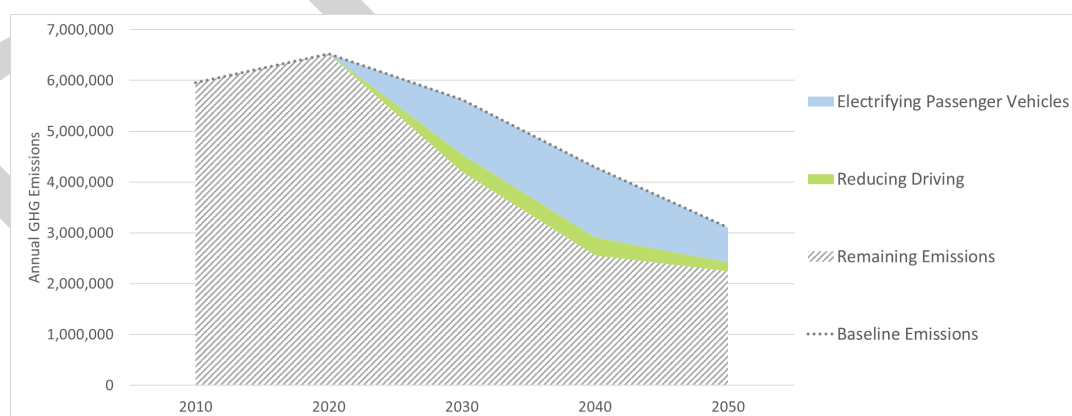
Reducing the amount of driving in the region contributes to many different goals, such as improving air quality and health impacts and managing traffic congestion as regional population grows. Active transportation in particular has important co-benefits such as improved health. However, helping residents and businesses to drive less is a long-term transition, and significant funding is needed to expand public transit and active transportation options.

Potential Impacts of Strategy

Reduce annual greenhouse gases by up to **280,000 tonnes** by 2030
Reduce annual greenhouse gases by up to **170,000 tonnes** by 2050

Key Partners

- Member jurisdictions
- TransLink
- BC Government
- Government of Canada



Potential greenhouse gas emission reductions associated with Strategy 2, Reduce Driving through Active Transportation and Public Transit. Strategies 1 and 2 together show emission reductions in personal transportation, which are completely eliminated by 2050.

- 2.1 More Stable Funding for Regional Transit.** Advocate to BC Government and Government of Canada to expand stable funding for the regional transit system to cover both operations and capital investments, including investments to transition to zero emission technologies.
- 2.2 Enhance and Improve Regional Transit. (BIG MOVE)** Advocate to TransLink to increase public transit in the region. TransLink should increase transit frequency in key areas, transition to using clean, renewable energy, and implement other related air quality and climate actions outlined in the *Regional Transportation Strategy*. Regional emission reductions should be prioritized in transit expansion and service decisions, while ensuring that all residents have access to transportation options in a connected region.
- 2.3 Support Mobility Pricing.** Support the development of mobility pricing in coordination with BC Government, TransLink and member jurisdictions. Any mobility pricing program for the region should prioritize reducing total driving distances and emissions, promoting fairness and equity, and should align with any low or zero emission zones in the region (see Actions 1.2 and 3.3).
- 2.4 More Stable Infrastructure Funding for Regional Active Transportation Networks.** Advocate to BC Government and Government of Canada to expand stable funding for comprehensive regional and local active transportation networks. The networks should be well-connected, comfortable for most, and integrated with public transit. Network expansion should prioritize under-served areas to ensure all residents have access to active transportation options in a connected region. Network elements should include walking and cycling paths, regional greenways, separated bike lanes, and end-of-trip facilities suitable for all bike and mobility types, including charging for electric mobility devices.
- 2.5 Regional Parking Strategy to Reduce Driving.** Develop a Regional Parking Strategy to prioritize active transportation and other low emission transportation options, coordinating with member jurisdictions and TransLink. The strategy could include replacing building parking minimums with maximums, establishing parking minimums for bicycles, implementing dynamic parking pricing and reducing free parking spaces. The strategy could also support uptake of electric and car-share vehicles by establishing electric vehicle charging requirements for parkades, and enhancing preferential parking rates and spaces for electric and car-share vehicles.
- 2.6 Support Residents and Businesses in Active Transportation.** Advocate to the BC Government and Government of Canada to provide incentives (including tax credits) to residents and businesses to support active transportation, including for buying, renting or sharing all bike and mobility types. Incentive availability should prioritize groups who generally cannot access these transportation options, such as low-income residents.
- 2.7 Communicate the Benefits of Walking, Cycling and Public Transit.** Support outreach campaigns led by TransLink, member jurisdictions and health authorities that show the benefits of walking, cycling (including electric bikes) and public transit, including the associated improvements to regional air quality and greenhouse gas emissions.
- 2.8 Implement Trip Reduction Programs.** Advocate to BC Government to require large employers and major trip generators (e.g., shopping malls) to implement trip reduction programs. Such programs could require large employers and other major trip generators to measure staff or customer driving habits and take action to reduce driving. These programs should consider availability of lower emission alternatives and opportunities for remote and flexible work options.

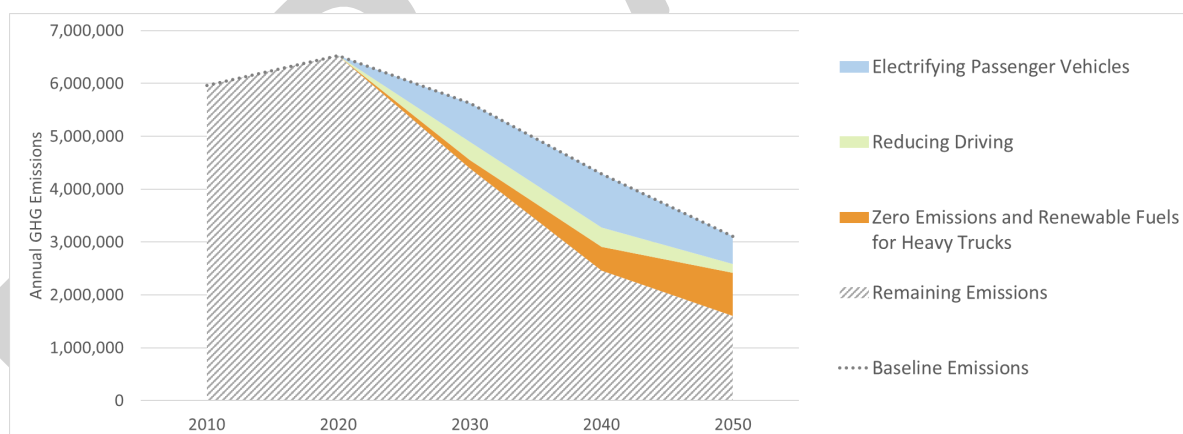
2.9 Support the Use of Bike- and Car-Sharing Services. Develop a regional strategy to support the increased use of bike- and car-sharing services, coordinating with member jurisdictions, TransLink and other regional partners. These services have been shown to reduce total driving distances among users.

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

Strategy 3: Reduce Heavy Truck Emissions and Support Early Adoption of Zero Emission Heavy Trucks

As our economy grows, goods movement in the region will continue to grow. Federal emission standards ensure new trucks use fuel more efficiently, and provincial clean fuel standards have reduced the carbon intensity of diesel, the primary fuel for medium and heavy duty trucks. Sales targets, incentives and a regional refueling strategy will accelerate the long term transition to zero emission medium and heavy duty trucks, reducing greenhouse gases and improving regional and local air quality while supporting a competitive local economy. Other medium and heavy duty vehicles used in the region, such as transit vehicles, must also shift towards zero emission technologies and low carbon fuels.

<p><i>Potential Impacts of Strategy</i></p> <p>Reduce annual greenhouse gases by up to 170,000 tonnes by 2030</p> <p>Reduce annual greenhouse gases by up to 810,000 tonnes by 2050</p>	<p><i>Key Partners</i></p> <ul style="list-style-type: none"> - BC Government - TransLink - Trucking industry - Vancouver Fraser Port Authority - Member jurisdictions
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Potential greenhouse gas emission reductions associated with Strategy 3, Reduce Heavy Truck Emissions and Support Early Adoption of Zero Emission Heavy Trucks

3.1 Regulate Existing Medium and Heavy Trucks. Develop regulatory requirements for existing medium and heavy duty trucks, implemented by the BC Government or Metro Vancouver. Regulatory approaches to reduce emissions could include an inspection and maintenance program that requires repairs on higher emitting trucks, registration requirements targeting older vehicles, and low or zero emission zones (aligned with Action

1.2). Requirements should be developed in coordination with member jurisdictions, Vancouver Fraser Port Authority, TransLink and other regional partners.

- 3.2 Require Zero Emission Sales Targets for New Medium and Heavy Trucks. (BIG MOVE)** Advocate to the BC Government to set mandatory zero emission vehicle sales targets for new medium and heavy duty trucks. For medium duty trucks, the zero emission sales target should reach 100% by 2050. For heavy duty trucks, the zero emission sales target should reach 100% before 2060.
- 3.3 More Stringent Low Carbon Fuel Standards. (BIG MOVE)** Advocate to the BC Government to increase the stringency of the BC *Low Carbon Fuel Standard* to reduce the carbon intensity of transportation fuels. Advocate to the Government of Canada to adopt a *Clean Fuel Standard* that includes stringent carbon intensity targets for all transportation fuels.
- 3.4 Make Low and Zero Emission Heavy Trucks More Affordable.** Advocate to BC Government, Government of Canada and other regional partners to enhance incentives (including loans, tax credits) for the purchase of low and zero emission medium and heavy duty trucks. Any funding program should consider whether incentives should be targeted to groups less able to afford low and zero emission medium and heavy duty trucks.
- 3.5 Regulate Fuel Economy and Emissions for Medium and Heavy Trucks.** Advocate to the Government of Canada to adopt more stringent fuel economy and emission standards for medium and heavy duty trucks. Cleaner trucks will improve regional air quality in the short term and support the long term transition to zero emission vehicles.
- 3.6 Zero Carbon Refueling Strategy for Medium and Heavy Trucks.** Develop a long-term regional zero carbon refueling strategy for medium and heavy duty trucks, coordinating with member jurisdictions, energy utilities, Vancouver Fraser Port Authority, TransLink and other regional partners. The strategy would identify where refueling stations are needed for different fuels including electricity, hydrogen, renewable diesel and others. The strategy could identify pilot projects and should also consider opportunities to leverage public investment in electric bus charging infrastructure for commercial vehicle use. This strategy should align with similar strategies for passenger vehicles (Action 1.4).
- 3.7 Funding for Zero Carbon Refueling Infrastructure for Medium and Heavy Trucks.** Advocate to the BC Government, Government of Canada and energy utilities to increase funding (e.g., incentives, loans, tax credits) for zero carbon refueling infrastructure for medium and heavy duty trucks. This infrastructure would support early adoption of low and zero emission medium and heavy trucks, prior to wider commercialization.
- 3.8 Large Fleets to Adopt “ZEV-First” Procurement.** Develop and support implementation of “ZEV-first” fleet procurement policies, coordinating with member jurisdictions and large fleet operators in the region, to transition fleets to zero emission vehicles by the late 2040s. The policies would be supported by regularly updated information on the availability of zero emission passenger vehicles and medium and heavy duty trucks. The policies could also include guidance on right-sizing fleets, and potential regional coordination of purchases of zero emission vehicles for fleets.
- 3.9 Efficient Goods Movement to Reduce Emissions.** Work with member jurisdictions, large fleet operators, Vancouver Fraser Port Authority and other regional partners to support fleets in reducing emissions. This could include enhancing sustainable fleet management programs (currently funded by BC Government and Government of Canada) to improve fleet logistics, regional coordination of HOV lane use for zero emission heavy duty trucks, shifting deliveries to off-peak hours, small urban consolidation centres (“microHubs”), and cargo bike delivery pilot projects.

3.10 Support Innovation in Zero Emission Technology for Medium and Heavy Trucks. Advocate to industry, academic institutions and other governments to accelerate innovation in low and zero emission technologies for medium and heavy duty trucks, including supporting pilot projects.

3.11 Use Business Licences to Support Emission Reductions. Work with member jurisdictions to explore whether business licences can be used to accelerate adoption of low and zero emission medium and heavy duty trucks.

Strategy 4: Reduce Marine, Rail, and Aviation Emissions

Marine, rail, and aviation are significant sources of greenhouse gas emissions globally. While they account for a relatively small amount of regional greenhouse gas emissions, regional rail lines, ports, and airports are important hubs in larger networks that must decarbonize to meet global climate targets. Achieving significant emission reductions in the marine and rail sectors depend on efforts by the Government of Canada and the BC Government to develop and implement strategies to advance cleaner fuels and engine technologies. The Government of Canada also needs to advocate to international organizations such as the International Maritime Organization to accelerate the implementation of more stringent emission standards. Locally, the Vancouver Fraser Port Authority is working to reduce greenhouse gas and health-harming air contaminant emissions associated with shipping in the region.

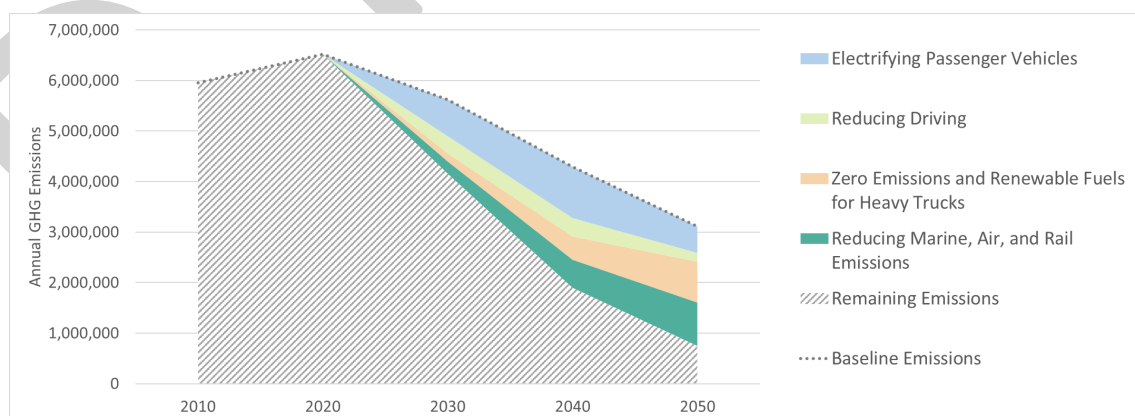
International standards have improved fuel economy from aircraft and the Vancouver International Airport Authority is electrifying airport operations. While electrification of small aircraft is progressing, achieving significant emission reductions for large aircraft is challenging. In the short term, increasing the availability of sustainable aviation fuel will reduce greenhouse gases from aviation. In the long term, the Government of Canada needs to develop a national strategy to transition to a carbon neutral aviation sector. This likely would include advocacy to international organizations such as the International Civil Aviation Organization.

Potential Impacts of Strategy

Reduce annual greenhouse gases by up to **250,000 tonnes** by 2030
Reduce annual greenhouse gases by up to **860,000 tonnes** by 2050

Key Partners

- Vancouver Fraser Port Authority
- Government of Canada
- BC Government
- Airlines
- Vancouver International Airport Authority
- BC Ferries



Potential greenhouse emission reductions associated with Strategy 4, Reduce Marine, Rail, and Aviation Emissions. Most remaining emissions in 2050 are from these modes of transportation.

- 4.1 Accelerate Emission Reductions from Marine Vessels. (BIG MOVE)** Advocate to the Government of Canada and BC Government to develop and implement a long-term strategy to accelerate emission reductions from ocean-going marine vessels, harbour vessels and passenger ferries in the region. In the short term, the strategy should prioritize cleaner engines, more renewable fuels and more shore power, particularly for vessels operating in areas that are most impacted by marine emissions. In the long term, the strategy should establish more stringent greenhouse gas emission targets, standards and regulations, to achieve a carbon neutral marine sector by 2050. The strategy should also consider efficiency improvements and the design and supportive funding for regional refueling infrastructure for zero carbon marine vessels.
- 4.2 Carbon Neutral Aviation Sector.** Advocate to Government of Canada to develop and implement a long-term strategy to accelerate greenhouse gas emission reductions from the aviation sector. The strategy should include more stringent fuel economy and emission standards for aircraft, to achieve a carbon neutral aviation sector by 2050. The strategy should also increase the availability of sustainable aviation fuel, and could include mandatory carbon offsets or carbon taxes for air travel.
- 4.3 Accelerate Emission Reductions from Rail Locomotives.** Advocate to the Government of Canada and BC Government to develop and implement a long-term strategy to accelerate emission reductions from rail locomotives in the region. In the short term, the strategy should prioritize cleaner locomotives, particularly those operating near neighbourhoods most exposed to rail emissions, as well as fugitive emissions from rail cars. In the long term, the strategy should establish more stringent greenhouse gas emission targets, standards and regulations for line-haul and switch locomotives, to achieve a carbon neutral rail sector by 2050. The strategy should also consider efficiency improvements and the design and supportive funding for regional refueling infrastructure for zero carbon locomotives.
- 4.4 Support Emission Reduction Actions at Vancouver Fraser Port Authority.** Advocate to the Vancouver Fraser Port Authority to enhance actions that reduce greenhouse gas emissions and minimize air quality impacts on neighbourhoods most exposed to marine and port-related emissions. Actions under the *Northwest Ports Clean Air Strategy* should include expanding emission incentive programs for marine vessels and harbour tugs, tightening emission requirements for the Port's Truck Licensing System, consideration of short-sea shipping, and expanding shore power capacity at container and cruise terminals.
- 4.5 Develop Local Sources of Sustainable Aviation Fuel.** Support airlines at Vancouver International Airport and other regional partners in increasing local availability of sustainable aviation fuel.
- 4.6 Support Innovation in Low and Zero Emission Marine and Rail Technologies.** Advocate to BC Government and Government of Canada to help accelerate innovation in low and zero emission technologies for marine vessels, harbour tugs, passenger ferries and rail locomotives, including supporting pilot projects. Emerging engine technologies include hybrid, battery-electric and hydrogen fuel cells. This should include coordination with Vancouver Fraser Port Authority, BC Ferries, rail companies, governments and other regional partners.
- 4.7 Technologies for Zero Emission Aircraft.** Advocate to Government of Canada and BC Government to support development of zero emission aircraft, including electrification of small aircraft.
- 4.8 Support Low Carbon Corporate Business Travel. (CORPORATE LEADERSHIP)** Update and adapt corporate business travel policies to reduce emissions, including air travel considerations, corporate carbon offsets, and remote attendance.

Resilient Transportation Strategies

Strategy 5: Protect Existing Transportation Networks from Future Climate Impacts

While reducing regional emissions will contribute to the global effort against climate change, some impacts from a changing climate are locked in and are likely to occur even with drastic emission reductions. Rising sea levels, increased frequency and severity of riverine flooding, and more frequent and intense heatwaves, wildfires, and droughts are already recognized as potential climate hazards that are likely to impact regional transportation networks within the next 100 years. Many existing transportation networks and infrastructure will remain standing for decades, but have not been designed to withstand impacts from changing climate hazards. Identifying current and future climate impacts and protecting existing transportation infrastructure from the hazards posed by these impacts is essential in order to create a resilient transportation system that is adapted to a changing climate.

- 5.1 Support Regional Emergency Management Planning. (BIG MOVE)** Work with member jurisdictions, TransLink, neighbouring regions, and the BC government through convening groups such as the Integrated Partnership for Regional Emergency Management (IPREM) to collaborate on data sharing and policy development, and consider critical regional infrastructure interdependencies that could result in cascading effects in the event of regional climate disruption.
- 5.2 Protect Road Networks.** Work with the BC government and member jurisdictions to ensure that existing road networks are protected from future climate impacts (such as flooding and sea level rise) through projects such as dikes and drainage systems that mitigate potential climate impacts in known risk areas.
- 5.3 Protect Key Transportation Hubs.** Advocate to the Vancouver Fraser Port Authority, Vancouver International Airport Authority, and Federal government to protect key transportation hubs in low-lying coastal areas from hazards such as sea level rise and riverine flooding.
- 5.4 Adapt Active Transportation and Transit Networks.** Work with member jurisdictions and TransLink to make sidewalks, bike paths, regional greenways, and transit networks comfortable and safe to use even when impacted by climate hazards such as hotter temperatures, degraded air quality due to wildfires, and heavy precipitation.
- 5.5 Prepare for Regional Disruption.** Advocate to TransLink, Vancouver Fraser Port Authority, BC Ferries, and local airports to develop and maintain climate change adaptation plans that establish “safe-to-fail protocols” in the event of severe climate shocks that cause regional disruption, as well as post-event intervention and review procedures.

Strategy 6: Develop Climate Resilient Transportation Networks

Defining and assessing future climate risk must look beyond past trends in order to successfully create a transportation network that is resilient to future climate conditions. Climate change adaptation needs to be considered during the location, construction, maintenance, and operation of transportation infrastructure to avoid creating vulnerabilities that make adaptation more difficult and expensive in the future. Long range transportation planning must include hazard, risk, and vulnerability assessments to ensure that all new infrastructure is located in areas without known, unmitigated hazard risks. Land use and development can be coordinated with transportation networks to create robust regional transit, walking, and cycling options that provide a multitude of ways to get to and from key destinations, enhancing low carbon resilience.

- 6.1 Minimize Risk Exposure for New Transportation Infrastructure. (BIG MOVE)** Work with the BC government, member jurisdictions, and TransLink to ensure that new transportation infrastructure is located outside of areas with known, unmitigated hazards, such as flooding and sea level rise.
- 6.2 Create Flexible Transportation Networks. (BIG MOVE)** Work with member municipalities and TransLink to develop flexible transportation systems through low-cost, low-emission travel options such as active transportation and transit options that minimize reliance on vulnerable transportation networks, and create multiple travel options in the event of a disruption.
- 6.3 Build Climate Resilient Transportation Infrastructure.** Advocate to the BC government and Federal governments to strengthen climate change resilience requirements for new transportation infrastructure projects.
- 6.4 Identify Regional Climate Hazards, Risks, and Vulnerabilities Impacting Transportation Networks.** Work with the BC government, member jurisdictions, TransLink, Vancouver Fraser Port Authority, BC Ferries, and local airports to collect data for baseline, trend, and monitoring purposes, and integrate forward-looking hazard, risk and vulnerability analysis into long-range transportation planning.

Setting the Path Ahead

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

Transportation is one of the best opportunities for significant early reductions of greenhouse gases in the region, particularly for personal transportation. The region is well positioned to continue with intentional land use planning that supports walking, cycling, transit, and other shared mobility modes. Electric vehicles are readily available and ready to be deployed on a large scale. It’s critical that the actions identified in this Roadmap to support faster uptake of electric vehicles are implemented without delay to set this transition in motion as soon as possible. Taking early action to reduce emissions can also help improve air quality, support health and well-being through exercise, and enhance low carbon resilience sooner rather than later. Taking action to improve the resilience of regional transportation networks should also begin right away to adapt to changing climate conditions.

As personal transportation transitions to zero emissions, medium and heavy trucks, marine vessels, aviation, and rail will become the largest sources of transportation greenhouse gas emissions in the region. Action that supports rapid development and scale-up of zero emission and low carbon options for these sectors is needed to ensure that the transportation sector as a whole can transition to carbon neutrality by 2050.

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

Climate 2050 Transportation Roadmap Action Timeline			
Strategy	2021-2023	2024-2029	2030-Beyond
1. Accelerate Transition of the Passenger Vehicle Fleet to Electric Vehicles	Accelerate Sales Targets for New Electric Vehicles		
		Develop Regional Emission Requirements for Passenger Vehicles	
	Make Electric Vehicles More Affordable		
	Regional Electric Vehicle Charging Strategy		
		Make New Passenger Vehicles Cleaner	
	Expand Electric Vehicle Charging in Buildings		
	Electric Vehicle Outreach Programs		
		Accelerated Electrification Targets for Ride-Hailing Services	
	Transition the Corporate Fleet to Zero Emissions		
2. Reduce Driving through Active Transportation and Public Transit	More Stable Funding for Regional Transit		
	Enhance and Improve Regional Transit		
	Support Mobility Pricing		
	More Stable Infrastructure Funding for Regional Active Transportation Networks		
	Regional Parking Strategy to Reduce Driving		
	Support Residents and Businesses in Active Transportation		
	Communicate the Benefits of Walking, Cycling and Public Transit		
		Implement Trip Reduction Programs	
		Support the Use of Bike- and Car-Sharing Services	
	Support Low Emissions Commuting by Staff		
3. Reduce Heavy Truck Emissions and Support Early Adoption of Zero Emission Heavy Trucks	Regulate Existing Medium and Heavy Trucks		
	Require Zero Emission Sales Targets for New Medium and Heavy Trucks		
		More Stringent Low Carbon Fuel Standards	
	Make Low and Zero Emission Heavy Trucks More Affordable		
	Regulate Fuel Economy and Emissions for Medium and Heavy		
		Zero Carbon Refueling Strategy for Medium and Heavy Trucks	
		Funding for Zero Carbon Refueling Infrastructure for Medium and Heavy Trucks	
		Large Fleets to Adopt “ZEV-First” Procurement	
	Efficient Goods Movement to Reduce Emissions		
	Support Innovation in Zero Emission Technology for Medium and Heavy Trucks		
	Use Business Licences to Support Emission Reductions		
4. Reduce Marine, Rail, and Aviation Emissions	Accelerate Emission Reductions from Marine Vessels		
		Carbon Neutral Aviation Sector	
	Accelerate Emission Reductions from Rail Locomotives		
	Support Emissions Reduction Actions at Vancouver Fraser Port Authority		
	Develop Local Sources of Sustainable Aviation Fuel		
	Support Innovation in Low and Zero Emissions Marine and Rail Technologies		
		Technologies for Zero Emission Aircraft	
	Support Low Carbon Corporate Business Travel		
	5. Protect Existing Transportation Networks from Future Climate Impacts	Support Regional Emergency Management Planning	
Protect Road Networks			
Protect Key Transportation Hubs			
Adapt Active Transportation and Transit Networks			
		Prepare for Regional Disruption	
6. Develop Climate Resilient Transportation Networks	Minimize Risk Exposure for New Transportation Infrastructure		
	Create Flexible Transportation Networks		
	Build Climate Resilient Transportation Infrastructure		
	Identify Regional Climate Hazards, Risks, and Vulnerabilities Impacting Transportation Networks		

Measuring our Progress

The table below lists examples of some of the performance indicators that could be used to help Metro Vancouver measure regional progress towards meeting the targets set out for this purpose. The performance indicators used will depend, to some extent, on the availability of this information from other organizations. Because the *Transportation Roadmap* is calling for actions from many different partners and stakeholders, data sharing will be

foundational to understanding the pace of progress towards our common goals, and will help governments to continue to shape equitable and cost-effective pathways to a carbon neutral future. While much of the data needed to measure progress in on-road transportation is already collected, there are significant data gaps for rail, marine, and air transportation. Additional work is needed to understand what key performance indicators and data effectively measure progress towards regional resilience.

Roadmap Element	Key Performance Indicator	Data Source	Data is Currently Collected
Accelerate Transition of the Passenger Vehicle Fleet to Electric Vehicles	Proportion of new vehicles sales that are electric, hybrid, hydrogen (number of new vehicle sales, % of total sales)	BC Government ICBC Market research firms Vehicle manufacturers	Yes
	Regional vehicle registration by engine type: internal combustion, electric, hybrid, hydrogen (number of new vehicle registrations, % of total registrations)	ICBC	Yes
	Kilometers travelled by vehicle model year, vehicle size, engine type (vehicle kilometers travelled, VKT)	ICBC TransLink Metro Vancouver	Partial
	Fuel use by type: fossil diesel, fossil gas, biofuels, electricity, hydrogen (Gigajoules, GJ)	Metro Vancouver BC Hydro BC Government	Partial
	Regional vehicle fleet make up by engine type: internal combustion, electric, hybrid, hydrogen (number of vehicles, % of total regional vehicle stock)	ICBC Metro Vancouver TransLink	Yes
Reduce Driving through Active Transportation and Public Transit	Mode share by trip (number of trips, % of total trips)	TransLink Statistics Canada Municipalities	Yes
	Kilometers travelled by mode type: walking, cycling, transit, single occupant vehicle, multiple occupant vehicle (Person kilometers travelled, PKM)	TransLink Municipalities	Yes
	Kilometers of bike lanes, paths, and greenways	Metro Vancouver Municipalities	Yes
	Proportion of household and employment growth concentrated in urban centres and frequent transit development areas (FTDAs) (% of households, % of jobs in urban centres and FTDAs)	Metro Vancouver	Yes
Reduce Heavy Truck Emissions and Support Early Adoption of Zero Emission Heavy Trucks	New vehicle sales by engine type: internal combustion, electric, hybrid, hydrogen, compressed natural gas (number of new vehicle sales, % of total sales)	Vehicle manufacturers ICBC Market research firms Industry associations	Yes
	Regional vehicle registration by engine type (number of new vehicle registrations, % of total registrations)	ICBC	Yes
	Kilometers travelled by vehicle model year, vehicle class, engine type (VKT)	TransLink Metro Vancouver ICBC	Partial

Roadmap Element	Key Performance Indicator	Data Source	Data is Currently Collected
	Fuel use by type: fossil diesel, fossil gas, compressed natural gas, renewable natural gas, biofuels, electricity, hydrogen (Gigajoules, GJ)	Metro Vancouver TransLink BC Hydro BC Government Market research firms Industry associations	Partial
Reduce Marine, Rail, and Aviation Emissions	Marine vessels with access to shore power by vessel type: cruise, container, tanker, ferry other (number of shore power terminals, % of marine vessels with access to shore power)	Vancouver Fraser Port Authority BC Ferries and other ferry operators	Yes
	Kilometers travelled by marine vessels using zero or low emission fuels (kilometers, % of total kilometers travelled)	Vancouver Fraser Port Authority International Maritime Organization Metro Vancouver Transport Canada BC Ferries BC Government	No
	Marine vessel fuel use by type: fossil fuels, liquefied natural gas, renewable natural gas, biofuels, electricity, hydrogen (GJ)	Vancouver Fraser Port Authority International Maritime Organization Transport Canada BC Ferries Metro Vancouver BC Hydro	No
	Kilometers travelled by rail locomotives using zero or low emission fuels (kilometers, % of total kilometers travelled)	Canadian National Rail Canadian Pacific Rail TransLink Other rail companies Metro Vancouver Transport Canada	No
	Locomotive and switch operations fuel use by type: fossil fuels, biofuels, electricity, hydrogen (GJ)	Canadian National Rail Canadian Pacific Rail TransLink Other rail companies Metro Vancouver Vancouver Fraser Port Authority Transport Canada	No
	Kilometers travelled by aircraft using zero or low emission fuels (kilometers, % of total kilometers travelled)	Transport Canada Regional airports Airlines	No
	Aircraft fuel use by type: fossil fuels, biofuels, electricity, hydrogen(GJ)	Transport Canada Regional airports Airlines	No
Protect Existing Transportation Networks from Future Climate Impacts	TBD	TBD	TBC

Roadmap Element	Key Performance Indicator	Data Source	Data is Currently Collected
Develop Climate Resilient Transportation Networks	TBD	TBD	TBC

Feedback and Engagement Process

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

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

The project team continues to be open to feedback, at any time, in this *Transportation Roadmap* and any other aspect of the climate action initiatives led or coordinated through Metro Vancouver. Send any comments direct to the Project Team through Climate2050@metrovancouver.org or phone 604-432-6200.

Glossary

Active transportation includes self-powered modes of transportation such as walking, biking, skateboarding, in-line skating/rollerblading, jogging and running, wheel chairing, snowshoeing and cross-country skiing. Electric technologies such as bikes or scooters may be used to support electric mobility on active modes.

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

Biofuels are renewable transportation fuels that have a low carbon (see below) footprint and are produced from organic matter derived from biomass such as plants.

Carbon dioxide (CO₂) is the primary driver of climate change, and is produced primarily by burning fossil fuels.

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

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

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

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

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

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

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

Large fleet operators are organizations that purchase, operate, and maintain a significant amount of vehicles for public sector or commercial use.

Low carbon fuels produce direct greenhouse gas emissions, but have no net greenhouse gas emissions when the fuel lifecycle is taken in to account.

Low emission technologies produce some greenhouse gas emissions or air contaminants, but significantly less than conventional fossil fuel counterparts. This may include high efficiency vehicles or plug in hybrid technologies.

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

Medium and heavy duty trucks are mostly freight vehicles such as long-haul trucks and cube vans used for commercial purposes, but also includes buses and refuse trucks.

Mobility pricing refers to fees for transportation services. Some types of mobility pricing (e.g., decongestion charging, low emission zones) are used to manage demand for roads and reduce emissions.

Passenger vehicles include motorcycles, cars, SUV, minivans and light trucks. Buses are included as part of medium and heavy duty trucks.

“Right-to-charge” legislation provides residents of multi-unit residential buildings with the right to install and use a charging station for their electric vehicle.

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

“Safe-to-fail” protocols anticipate possible system failures so that they can be contained and minimized.

Vulnerability is the degree to which ecosystems, economies, infrastructure and communities are susceptible to, or unable to cope with, the adverse effects of climate change. Vulnerability varies based on exposure, sensitivity and

adaptive capacity. Geographic location, socio-economic conditions, and other factors can impact susceptibility to harm and adaptive capacity.

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

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

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

DRAFT

To: Climate Action Committee

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

Date: March 22, 2021 Meeting Date: April 16, 2021

Subject: **Best Management Practices for Invasive Species: Hedge Bindweed and American Bullfrog**

RECOMMENDATION

That the MVRD Board:

- a) receive for information the report dated March 22, 2021, titled “Best Management Practices for Invasive Species: Hedge Bindweed and American Bullfrog”; and
 - b) direct staff to forward the Best Management Practices and suite of seventeen invasive species fact sheets to member jurisdictions for information.
-

EXECUTIVE SUMMARY

Building on an existing library of technical guidance for fifteen priority invasive species, Metro Vancouver has again worked with the Invasive Species Council of Metro Vancouver, member jurisdictions and other local experts to produce a new set of best management practices – this time for hedge bindweed (also known as morning glory) and American bullfrog. These documents provide information for practitioners about how to identify, track, report, dispose, prevent further spread, and effectively control these species, as well as regulatory requirements, monitoring and restoration tips, references and additional resources. Each guide also describes how these invasive species may adapt as our climate changes.

In addition, seventeen new fact sheets (one for each priority invasive species) have been created in collaboration with staff from the Invasive Species Council of Metro Vancouver, UBC Botanical Garden, and member jurisdictions. These public-friendly fact sheets provide general information on each species.

PURPOSE

To provide the Climate Action Committee and the MVRD Board with two new invasive species best management practices documents and a suite of seventeen new fact sheets for information.

BACKGROUND

In 2018, 2019, and 2020, the Climate Action Committee received reports regarding best management practices for 15 invasive species: knotweed species, giant hogweed, European fire ant, European chafer beetle, Himalayan blackberry, Scotch broom, English holly, English and Irish ivies, yellow archangel, Himalayan balsam, parrot’s feather, purple loosestrife, reed canarygrass, wild chervil, and yellow flag iris. This report presents best management practices for two additional priority invasive species identified by the Regional Planning Advisory Committee (RPAC) – Invasive Species Subcommittee.

THE NEED FOR AND DEVELOPMENT OF REGIONAL BEST MANAGEMENT PRACTICES

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

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

Metro Vancouver retained the Invasive Species Council of Metro Vancouver (ISCMV) to create the best management practice documents. The target audiences are local government staff, crews, project managers, contractors, consultants, developers, stewardship groups, and others who have a role in invasive species management. The best management practices include technical guidance about identification, tracking, reporting, effective prevention and control strategies, regulatory requirements, disposal, monitoring and restoration, as well as references and additional resources. The recommendations were informed by the best available scientific expertise and local experience.

OVERVIEW OF LATEST BEST MANAGEMENT PRACTICES

The best management practices for hedge bindweed (Reference 1) and American bullfrog (Reference 2) have been reviewed by members of the RPAC-Invasive Species Subcommittee and additional local experts. An overview of each document is provided below.

Hedge Bindweed

Also known as morning glory, hedge bindweed is a persistent plant that spreads by underground stems and roots that can re-sprout from fragments left in the soil. It can twist around other plants and structures, often forming a tangled mass that overwhelms gardens, weighing down branches or stems of other plants, and sometimes causing breakage.

Manual control is recommended, carefully removing new seedlings by hand from other plants and structures, while also digging up all underground stems and roots. Effective hedge bindweed control will likely involve several years of ongoing monitoring and removal.

American Bullfrog

Native to eastern North America, the robust American bullfrog was first introduced as a delicacy for human consumption, but they escaped or were released, and subsequently spread, including into several wetlands across Metro Vancouver. Bullfrogs are voracious predators that consume a variety of prey, including smaller native and some endangered frog species. They can also spread deadly viruses and funguses to other amphibians, and damage wetland habitats and water supply infrastructure.

Control methods include egg mass removal (late May to early September), or capturing tadpoles or adults with dip nets or by hand with subsequent humane euthanasia. The elimination of American

bullfrogs from this region is likely impossible, so efforts should be focused on preventing further spread and improving habitat for native species.

Climate Adaptation

This set of best management practice documents features a section on 'Climate Adaptation' that describes how these species may adapt as our climate changes based on their ability to withstand warmer temperatures, summer drought, warmer wetter winters, and an extended growing season. All of the existing best management practices will be updated to include a Climate Adaptation section over the coming months.

FACT SHEETS AND NEXT STEPS

In 2020, the RPAC-Invasive Species Subcommittee requested the creation of one-page plain language fact sheets to help share the best practice guidance beyond practitioners. Seventeen fact sheets - featuring information on impacts, identification, prevention, recommended control options, and tips for how residents can help - have been produced, one for each of the 15 previous priority species (References 5-19), as well as the two latest that are the subject of this report (References 3 and 4). These resources have been posted on [Metro Vancouver's Invasive Species webpage](#). To increase awareness of the new best practices and suite of fact sheets, staff recommends circulation to member jurisdictions, as per Alternative 1.

ALTERNATIVES

1. That the MVRD Board:
 - a) receive for information the report dated March 22, 2021, titled "Best Management Practices for Invasive Species: Hedge Bindweed and American Bullfrog"; and
 - b) direct staff to forward the Best Management Practices and suite of seventeen invasive species fact sheets to member jurisdictions for information.
2. That the Climate Action Committee receive for information the report dated March 22, 2021, titled "Best Management Practices for Invasive Species: Hedge Bindweed and American Bullfrog", and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

The 2020 MVRD Board-approved Regional Planning budget included \$10,000 for best management practices presented in this report.

CONCLUSION

Best management practices have been compiled for two additional invasive species found within the Metro Vancouver region: Hedge bindweed and American bullfrog. These documents provide locally-tested technical guidance about identification, tracking, reporting, climate adaptation, effective prevention and control strategies, regulatory requirements, disposal, monitoring and restoration, as well as references and additional resources. A set of one-page fact sheets has also been created to increase public awareness of the seventeen priority invasive species. Staff recommend Alternative 1, that the Board receive these documents for information, and direct staff to forward them to member jurisdictions.

References

1. [Best Management Practices for American Bullfrog in the Metro Vancouver Region - March 2021](#)
2. [Best Management Practices for Hedge Bindweed in the Metro Vancouver Region - March 2021](#)
3. [American Bullfrog Fact Sheet - March 2021](#)
4. [Hedge Bindweed Fact Sheet - March 2021](#)
5. [English and Irish Ivies Fact Sheet - December 2020](#)
6. [English Holly Fact Sheet - December 2020](#)
7. [European Chafer Beetle Fact Sheet - December 2020](#)
8. [European Fire Ants Fact Sheet - December 2020](#)
9. [Giant Hogweed Fact Sheet - December 2020](#)
10. [Himalayan Balsam Fact Sheet - December 2020](#)
11. [Himalayan Blackberry Fact Sheet - December 2020](#)
12. [Knotweeds Fact Sheet - December 2020](#)
13. [Parrots Feather Fact Sheet - December 2020](#)
14. [Purple Loosestrife Fact Sheet - December 2020](#)
15. [Reed Canarygrass Fact Sheet - December 2020](#)
16. [Scotch Broom Fact Sheet - December 2020](#)
17. [Wild Chervil Fact Sheet - December 2020](#)
18. [Yellow Archangel - December 2020](#)
19. [Yellow Flag Iris Fact Sheet - December 2020](#)

44585003

To: MVRD Board of Directors

From: Climate Action Committee

Date: April 19, 2021

Meeting Date: April 30, 2021

Subject: **Help Cities Lead Campaign**

CLIMATE ACTION RECOMMENDATION

That the MVRD Board write letters expressing its support for the Help Cities Lead Campaign, to the following Provincial Ministers:

- i. Minister of Environment and Climate Change Strategy;
- ii. Minister of Municipal Affairs;
- iii. Minister of Energy, Mines and Low Carbon Innovation;
- iv. Minister of Finance; and
- v. Attorney General and Minister responsible for Housing.

At its April 16, 2021 meeting, the Climate Action Committee reviewed correspondence, presented in the Committee's agenda for information, from the District of North Vancouver, the City of Victoria and the City of Port Moody requesting Metro Vancouver's support of the Help Cities Lead Campaign. The Committee subsequently passed the recommendation presented above.

The Help Cities Lead campaign sets out a number of climate action initiatives related to new and existing buildings, which align with Metro Vancouver's work on the *Climate 2050* roadmap for buildings.

This matter is now before the Board for its consideration.

Attachment

1. Correspondence re Help Cities Lead Campaign from Mayor Mike Little, District of North Vancouver, dated March 4, 2021
2. Correspondence re Help Cities Lead Campaign from Mayor Lisa Helps, City of Victoria, dated March 10, 2021
3. Correspondence re Help Cities Lead Campaign from Mayor Rob Vagramov, City of Port Moody, dated March 29, 2021

355 West Queens Road
North Vancouver BC
V7N 4N5

www.dnv.org



Mayor Mike Little
Phone: 604 990 2208
Cell/Text: 604 209 3971
mayor@dnv.org

March 4, 2021

File:

Dear Chair Dhaliwal and Board:

Re: Help Cities Lead (HCL) Campaign

The District of North Vancouver is sending this letter to you requesting support of the Help Cities Lead (HCL) campaign.

At its regular meeting of February 22, 2021, the District of North Vancouver Council passed the following resolution:

THAT Council support the Help Cities Lead initiative by writing letters to Ministers Heyman (Minister of Environment and Climate Change Strategy), Osborne (Minister of Municipal Affairs), Ralston (Ministry of Energy, Mines, and Low Carbon Innovation), Eby (Attorney General and Minister Responsible for Housing), and Robinson (Minister of Finance) requesting five policy actions which would empower the District of North Vancouver to help align building policy with Intergovernmental Panel on Climate Change (IPCC) science to achieve our climate targets;

AND THAT Council send a letter Metro Vancouver Regional District asking Metro Vancouver to also support the initiative;

AND THAT Council send a letter to all BC Local Governments asking them to support the initiative.

Please find a copy of the letter sent to the ministers attached for your information and consideration.

Sincerely,

Mike Little
Mayor

Enclosure

CHAIR <input checked="" type="checkbox"/>	DAO <input checked="" type="checkbox"/>	JD MAR 23 2021 38
Action: _____		
Need - Board?		
Info Copy: _____		
File No. _____		
Doc. No. 44585584		
CAO Tracker No: _____		

355 West Queens Road
North Vancouver BC
V7N 4N5

www.dnv.org



Mayor Mike Little
Phone: 604 990 2208
Cell/Text: 604 209 3971
mayor@dnv.org

March 3, 2021
File:

The Honourable Minister George Heyman
Minister of Environment and Climate Change Strategy

The Honourable Josie Osborne
Minister of Municipal Affairs

The Honourable Bruce Ralston
Minister of Energy, Mines, and Low Carbon Innovation

The Honourable David Eby
Attorney General and Minister responsible for Housing

The Honourable Selina Robinson
Minister of Finance

Dear Ministers:

Re: Help Cities Lead (HCL) Campaign

The District of North Vancouver is sending this letter to you as an endorsement of the Help Cities Lead (HCL) campaign.

As you are aware, municipalities are on the front lines of climate change dealing with the impacts of floods, droughts, forest fires, heat waves, etc. We directly influence about half of Canada's energy use and emissions. The success of the province in achieving deep emissions reductions from the building sector is directly connected to the success of local governments in achieving their own targets. While municipalities have shown strong climate leadership, expanded regulatory authority is needed for taking bolder steps to achieving our climate targets.

HCL is an education and awareness campaign focused on accelerating building decarbonization through collaboration between the Province of British Columbia and local governments. The group is led by Climate Caucus and supported by local governments and environmental NGO's.

Why buildings? Emissions from buildings account for about 11% of the province's greenhouse gas (GHG) emissions and for municipalities, GHG emissions from existing buildings account for 40-60% of community emissions. A number of BC local governments have made climate emergency declarations and set ambitious targets to significantly reduce GHG emissions from buildings over the next 10 years. However, local governments are largely limited to information

campaigns and incentives for pursuing these ambitious reduction targets. Recent climate policy modelling shows that on their own, these policy tools are insufficient to achieve broad and deep energy and GHG reductions given limited budgets.

HCL campaign recommends a suite of expanded authorities for local governments that will enable communities to take bolder action on reducing GHG emissions from new and existing buildings:

- Property assessed clean energy (PACE) financing
- Mandatory home energy labelling
- Regulating GHG emissions for new buildings
- Regulating GHG emissions for existing buildings
- Mandatory building energy benchmarking and reporting

We are pleased to see that the November 2020 mandate letters to the Ministers of Municipal Affairs and Energy, Mines and Low Carbon Infrastructure support the implementation of PACE financing. We also note that the mandate letter for the Minister of Finance supports home energy labelling. Finally we pleased to see that the mandate letter to the Attorney-General and Minister Responsible for Housing includes support for regulation of GHG emission of new buildings.

We support the directions set out in these new mandate letters regarding PACE financing, home energy labelling, and GHG requirements for new buildings and request that the province empower local governments to opt to take action, if they so choose, on the two remaining items of the Help Cities Lead's campaign, namely GHG requirements for existing buildings and building energy benchmarking. Additional information about each of the initiatives can be found at <https://www.helpcitieslead.ca/>

It is our hope that you would consider meeting with a delegation from Help Cities Lead for further discussion on these initiatives.

Sincerely,



Mike Little
Mayor

THE CITY OF VICTORIA



OFFICE OF THE MAYOR

March 10, 2021

Dear Colleagues,

On behalf of Victoria City Council, I am writing today to inform you that Council has voted to endorse the Help Cities Lead campaign and to request that your city consider doing the same. Emissions from buildings account for about 11% of the province's GHG emissions. This is the third highest source of GHG emissions in BC after road transportation (27.1%) and the oil and gas sector (17.6%). For municipalities, GHG emissions from existing buildings account for 40-60% of community emissions. In Victoria, this number is around 50% of our community GHG inventory.

In British Columbia, the regulation of buildings typically occurs at the provincial level. For the past two decades British Columbia has been at the forefront of action and policies taken in Canada to reduce energy use and GHG emissions from buildings. The 2018 CleanBC Plan moved the province further in this direction with key commitments for the building sector such as a net-zero energy building standard by 2032, a building upgrade standard by 2024, and exploring building energy labelling options.

A number of local governments, including Victoria, are keen to take even bolder action, and have set ambitious targets of our own to significantly reduce GHG emissions from buildings over the next 10 years in alignment with climate emergency declarations. The success of the Province in achieving deep emissions reductions from the building sector are directly connected to the success of local governments to achieve their own targets because most buildings are situated within these communities. However, tools currently available to local governments to pursue these ambitious reduction targets are largely limited to information campaigns and incentives. Although helpful, on their own these tools are insufficient to achieve broad and deep energy and GHG reductions given limited budgets.

Help Cities Lead (helpcitieslead.ca) is an education and awareness campaign working to build support for more focused collaboration between the Province of British Columbia and local governments on building climate policy.

The campaign project team identifies five regulatory measures where additional authority would be instrumental for municipalities in accelerating climate action:

1. Regulating GHG emissions for new buildings – the BC Energy Step Code only regulates energy efficiency in new buildings. Leading local governments would also like the ability to regulate GHG emissions from new buildings.
2. Mandatory home energy labelling - In Canada and British Columbia, legislation requires energy labelling for a broad range of consumer products including motor vehicles, furnaces, windows, lightbulbs, and kitchen appliances. However, there are no labeling requirements for the single largest purchase a given Canadian is likely to make—their home.

3. Property assessed clean energy (PACE) financing - programs allow property owners to finance the up-front cost of building energy efficiency upgrades—such as more efficient heating systems, or windows—by paying the costs back over time via a voluntary property tax assessment. The assessment is attached to the property, not an individual; if, and when, the property is sold, the financing carries on with the new owner.

4. Regulating GHG emissions for existing buildings – this would include the development of a new regulation that would set greenhouse gas emissions targets from existing buildings.

5. Mandatory building energy benchmarking and reporting - Energy benchmarking is the process of collecting and monitoring energy data from a large number of buildings over time so that governments and the private sector can compare the performance of any one participating building against similar properties.

Direction to implement the first three of these measures – enabling local governments to regulate GHG emissions for new buildings, home energy labelling, and PACE financing – were included in the ministerial mandate letters issued in November 2020. Help Cities Lead encourages the Province to move as quickly as possible and in close consultation with local governments to develop and implement these measures.

Help Cities Lead would also like the Province to enable local governments to choose, when ready, to opt into the remaining two measures not addressed by the mandate letters – namely, regulating GHG emissions for existing buildings and building energy benchmarking and reporting.

The suite of initiatives is intended to compliment what the provincial government and utilities are already doing in this area and help to lay the groundwork for eventual province-wide adoption of these measures.

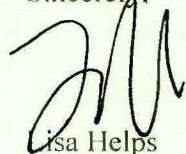
These actions would let municipalities, ready to take bolder action on climate, lead the way in regulating emissions in buildings. This would provide a template for action for other jurisdictions and even for provincial regulation in the future.

As such, we are requesting that your city consider endorsing the Help Cities Lead campaign and that you communicate this support directly to the Province by writing to the below Ministers:

- Minister of Environment and Climate Change Strategy, ENV.Minister@gov.bc.ca
- Minister of Municipal Affairs, MAH.Minister@gov.bc.ca
- Minister of Energy, Mines, and Low-Carbon Innovation, EMPR.Minister@gov.bc.ca
- Minister of Finance, FIN.Minister@gov.bc.ca
- Attorney General and Minister responsible for Housing, AG.Minister@gov.bc.ca

Thank you for your time and consideration. Please do not hesitate to reach out should you have any questions regarding this letter.

Sincerely,



Lisa Helps
Victoria Mayor

The City of Victoria recognizes the Songhees and Esquimalt Nations in whose traditional territories we live and work "Hay swx qa"

March 29, 2021

Metro Vancouver Board Members
4730 Kingsway
Burnaby, BC V5H 0C6

To Metro Vancouver Board Members,

On March 2, 2021 Port Moody City Council passed the attached resolution.

I am writing to you today on behalf of Port Moody City Council requesting regional endorsement from Metro Vancouver for the Help Cities Lead Campaign. Endorsing the Help Cities Lead Campaign is an opportunity to support an advocacy campaign related to building greenhouse gas emissions reductions in British Columbia. Supporting this campaign will result in completing an action related to advocacy under the Buildings focus area in the 2020 Climate Action Plan.

The Help Cities Lead campaign presents a suite of climate policy initiatives that support emissions reductions from new and existing buildings in BC. I have included a copy of the Council report dated January 25, 2021 from the Community Development Department – Policy Planning Division regarding Endorsement of Advocacy Campaign Help Cities Lead to provide further information on this topic.

Metro Vancouver covers 2,883 km² of British Columbia and has an estimated population of 2.46 million people. This is a big portion of our province, and getting on board with such an important initiative would show the leadership that is required in order to make the changes we need when it comes to the reduction of greenhouse gas emissions. It takes a team to make a difference and it is so important to have all levels of government on board, including regional districts.

City Council hopes that Metro Vancouver will endorse this campaign, showing support for a very important legislative change to expand climate action powers in order to meet very important targets in reducing greenhouse gas emissions in British Columbia.

Sincerely,



Mayor Rob Vagramov
City of Port Moody

Attachment:

1. Resolution from the City of Port Moody – Helping Cities Lead Campaign



City of Port Moody
Council Resolution
March 2, 2021

CW21/020

Moved, seconded, and CARRIED

THAT Council formally endorse the Help Cities Lead campaign as recommended in the report dated January 25, 2021 from the Community Development Department – Policy Planning Division regarding Endorsement of Advocacy Campaign “Help Cities Lead”, and take the following actions:

- a) write a letter to the following provincial ministers to voice support for the five policies detailed in this report:*
 - Minister of Environment and Climate Change Strategy;*
 - Minister of Municipal Affairs;*
 - Minister of Energy, Mines, and Low-Carbon Innovation;*
 - Minister of Finance; and*
 - Attorney General and Minister responsible for Housing;*
- b) request a meeting with the Ministers listed above;*
- c) write a letter to Metro Vancouver requesting regional endorsement of the campaign; and*
- d) write letters to all BC local governments asking them to endorse the campaign;*

AND THAT Council authorize staff to participate in activities supporting the Help Cities Lead campaign, including information sharing presentations to other municipal Councils.



To: Regional Parks Committee

From: David Leavers, Division Manager, Visitor & Operations Services, Regional Parks

Date: March 11, 2021 Meeting Date: April 7, 2021

Subject: **MVRD Regional Parks Regulation Amending Bylaw No. 1321, 2021 – Amends Bylaw 1177, 2012**

RECOMMENDATION

That the MVRD Board:

- a) give first, second and third reading to *Metro Vancouver Regional District Regional Parks Regulation Amending Bylaw No. 1321, 2021*; and
 - b) pass and finally adopt *Metro Vancouver Regional District Regional Parks Regulation Amending Bylaw No. 1321, 2021*.
-

EXECUTIVE SUMMARY

The Regional Parks Regulation Bylaw sets out prohibitions and a system for permitted use that taken together, are designed to regulate park visitor behaviour and activities. Included in the bylaw is the schedule of Regional Parks fees and charges.

There are no regulatory changes to the bylaw being proposed at this time. Two recommended amendments to Schedule A – Fees and Charges are included in this report.

In anticipation of the introduction of pay parking at Boundary Bay and Lynn Headwaters Regional Park, the Board approved an hourly rate of \$2 per hour in November, 2020. Staff have heard from the two park communities that a full day rate is needed. In order to keep our parks as accessible as possible, this bylaw amendment further addresses parking permits for pay parking at these two parks, to include a full day rate maximum of \$12 per day.

PURPOSE

To consider an amendment to the *Metro Vancouver Regional District Regional Parks Regulation Bylaw No. 1177, 2012* that proposes new fees and charges (Attachment).

BACKGROUND

The Regional Parks Regulation Bylaw is typically amended annually in the fall to bring forward any recommended regulatory changes to regulate visitor behavior and activities and to amend existing, or establish new fees and charges. Proposed bylaw amendments help improve public safety, further protect park natural assets, and better define acceptable public conduct and park officer enforcement powers. Proposed fees and charges changes help ensure the appropriateness of the fees based on current market conditions.

Regional Parks Regulations

There are no regulatory changes being proposed at this time. Regulatory changes (if any) will be bundled and brought forward with the next scheduled amendment of the bylaw, in November 2021.

Regional Parks Fees and Charges

Regional Parks fees and charges are established by comparing them with municipal parks systems across Metro Vancouver, the private sector and other government and non-profit agencies. The fee schedule is typically adjusted based on Regional Parks' approach to remain in the mid-range market of comparable fees, and avoid overly large, less frequent adjustments. Fees and charges generate revenues that help recover, or partially offset, operating and maintenance costs.

PROPOSED FEES AND CHARGES AMENDMENTS (TO TAKE EFFECT MAY 1, 2021)

Parking Permits (Section 1.3)

In November 2020, the Board approved new fees and charges related to the proposed implementation of pay parking at Belcarra and Lynn Headwaters Regional Parks. A seasonal parking rate of \$2/hour was approved for both parks. Pay parking is scheduled to be implemented at Lynn Headwaters on March 29, 2021 and at Belcarra Regional Park on April 1st, 2021. This \$2/hour rate is lower than the hourly rate being introduced by the District of North Vancouver for the adjacent Lynn Canyon Park. Staff anticipate that some vehicle spillover from Lynn Canyon Park could occur.

Since the new hourly parking rate was approved, the need for a full day rate at Belcarra Regional Park has been suggested to cap the daily cost of parking for those visitors that stay longer than 6 hours. In addition, the need for a daily maximum amount for pay parking at Lynn Headwaters Regional Park has been expressed by park users who typically stay longer than 6 hours. Many of the hikes at this park are full day excursions.

Staff are conscious of the need to ensure our parks remain accessible, and have responded to this call by recommending two amendments to Schedule A – Fees and Charges, included in this report. Both changes address parking permits and the desire to include a full day rate of \$12 per day maximum for pay parking at Belcarra Regional Park and Lynn Headwaters Regional Park.

Staff compared rates across the region and determined that a full day rate of \$12 per day at Belcarra Regional Park and Lynn Headwaters Regional Park is appropriate.

Seasonal pay parking will encourage visitor turnover as well as the use of alternative transportation options including carpooling, cycling, transit and shuttle busses, as available. Staff have been working with Translink seeking the improvement of local transit access to both parks.

The new fees proposed in this amending bylaw are to be effective May 1, 2021.

ALTERNATIVES

1. That the MVRD Board:
 - a) give first, second and third reading to *Metro Vancouver Regional District Regional Parks Regulation Amending Bylaw No. 1321, 2021*; and
 - b) pass and finally adopt *Metro Vancouver Regional District Regional Parks Regulation Amending Bylaw No. 1321, 2021*.
2. That the MVRD Board receive for information the report dated March 11, 2021, titled “MVRD Regional Parks Regulation Amending Bylaw No. 1321, 2021 – Amends Bylaw 1177, 2012” and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

If the MVRD Board approves Alternative 1, the financial implications of the proposed amendments are negligible.

SUMMARY / CONCLUSION

The proposed bylaw amendments, subject to MVRD Board approval, will adjust existing fees and charges to better align them with current market conditions.

Staff recommends the MVRD Board adopt Alternative 1. With the Board’s approval, these new fees and charges will be implemented on May 1, 2021.

Attachment (44713262)

Metro Vancouver Regional District Bylaw No. 1321, 2021 – A Bylaw to Amend Metro Vancouver Regional District Regional Parks Regulation Bylaw No. 1177, 2012

44133298

**METRO VANCOUVER REGIONAL DISTRICT
BYLAW No. 1321, 2021
A Bylaw to Amend Metro Vancouver Regional District Regional Parks Regulation
Bylaw No. 1177, 2012**

WHEREAS:

- A. the Metro Vancouver Regional District Board of Directors has adopted “Metro Vancouver Regional District Regional Parks Regulation Bylaw No. 1177, 2012”, a bylaw to establish rules and regulations for the management, maintenance, operation, enforcement, control, and use of regional parks and property in regional parks; and
- B. the Metro Vancouver Regional District Board of Directors wishes to amend “Metro Vancouver Regional District Regional Parks Regulation Bylaw No. 1177, 2012”.

NOW THEREFORE the Board of Directors of the Metro Vancouver Regional District enacts as follows:

Citation

- 1. This bylaw may be cited as “Metro Vancouver Regional District Regional Parks Regulation Amending Bylaw No. 1321, 2021”.

Amendment of Bylaw

- 2. “Metro Vancouver Regional District Regional Parks Regulation Bylaw No. 1177, 2012” is hereby amended as follows:
 - a) Effective May 1, 2021 Schedule A is deleted and replaced by the Schedule A which is attached to and forms part of this bylaw.

Read a first, second and third time this _____ day of _____, _____.

Passed and finally adopted this _____ day of _____, _____.

Sav Dhaliwal, Chair

Chris Plagnol, Corporate Officer

SCHEDULE A
(Effective May 1, 2021)

Section 1.0 GENERAL FEES				
1.1 Staff Assistance Fees				
	Staff Time			
	Staff time – regular hours			\$85/hour
	Staff time - overtime			\$170/hour
	Pre-event Site Visit			\$100/visit
1.2 Liquor Administration Fee				
	Number of Persons			Fee, per day
	1 to 199 persons			\$115
	200 - 299 persons			\$170
	300 - 999 persons			\$225
	1000 or more persons			\$335
1.3 Parking Permits / Reservation Fees				
	Regional Park	Location	Fee, per hour	Fee, per day
	Pacific Spirit	Fraser Lot	\$2.50	\$12.50
	Belcarra		\$2.00	\$12.00
	Lynn Headwaters		\$2.00	\$12.00
			Fee, per half day	Fee, per day
	Boundary Bay (Parking Reservation)	Centennial Beach	\$5.00	\$10.00
Section 2.0 COMMERCIAL USE PERMIT FEES				
2.1 Commercial Use Permit Application and Annual Fees				Fee
	Commercial use permit application fee			\$175
	Annual commercial use permit fee for general commercial activities			\$175
	Commercial use permit fee for dog walking, up to 4 dogs			\$470
	Commercial use permit fee for dog walking, more than 4 dogs			\$780
	Commercial use permit fee for equestrian usage			\$2,000
	Commercial use ID card for approved equestrian permittees			\$35/ID

SCHEDULE A (continued)
(Effective May 1, 2021)

Section 2.0 COMMERCIAL USE PERMIT FEES (Continued)		
2.2	Commercial Use Permit Specialized Fees	Fees
	Locker storage of commercial-use related equipment at Wreck Beach, where the maximum rental period permitted is April 1 to September 30 of each year	\$100 per small bin per rental period (non-refundable) \$200 per medium bin per rental period (non-refundable) \$300 per large bin per rental period (non-refundable)
	Replacement key for locker storage at Wreck Beach	\$15 per replacement
	Vest	\$35 per vest
	Daily or Annual Parking Permit for buses and other motor vehicles that enter a regional park in connection with a commercial use	11 or fewer seats: \$20 per vehicle per day or \$700 annually per vehicle
		12 to 24 seats: \$31 per vehicle per day or \$1,000 annually per vehicle
		25 seats or more: \$51 per vehicle per day or \$1,450 annually per vehicle

SCHEDULE A (continued)
(Effective May 1, 2021)

Section 3.0 REGIONAL PARK FACILITY PERMIT FEES				
3.1 Outdoor Facilities – Picnic Shelters				
	Regional Park	Facility	Fee on weekends and holidays, per day	Fee on weekdays, per day
	Aldergrove	Blacktail Picnic Shelter	\$154	\$75
	Belcarra	Belcarra 1 Picnic Shelter	\$154	\$75
	Belcarra	Belcarra 2 Picnic Shelter	\$154	\$75
	Boundary Bay	Cattail Picnic Shelter	\$154	\$75
	Boundary Bay	Sandpiper Picnic Shelter	\$154	\$75
	Campbell Valley	Old Orchard Picnic Shelter	\$154	\$75
	Crippen	Crippen 1 Picnic Shelter	\$154	\$75
	Crippen	Crippen 2 Picnic Shelter	\$154	\$75
	Crippen	Crippen 3 Picnic Shelter	\$154	\$75
	Deas Island	Deas Picnic Shelter	\$154	\$75
	Deas Island	Muskrat Meadows Picnic Shelter	\$154	\$75
	Derby Reach	Marpole Picnic Shelter	\$154	\$75
	Surrey Bend	Hawk Picnic Shelter	\$154	\$75
	Surrey Bend	Warbler Picnic Shelter	\$154	\$75
	Surrey Bend	Wren Picnic Shelter	\$154	\$75

SCHEDULE A (continued)
(Effective May 1, 2021)

Section 3.0 REGIONAL PARK FACILITY PERMIT FEES (Continued)					
3.1 Outdoor Facilities – Fields					
	Regional Park	Facility	Fee		
	Aldergrove	Aldergrove Bowl	\$117		
	Boundary Bay	Centennial Beach South End	\$96		
	Campbell Valley	Little River Bowl	\$96		
	Campbell Valley	Little River Field	\$96		
	Campbell Valley	Rowlatt Farm Field (with access to electrical power and washrooms)	\$294		
	Campbell Valley	Order of the Canada Grove	\$96		
	Capilano River	Cleveland Dam Field	\$96		
	Crippen	Middle Field	\$96		
	Crippen	Snug Cove Field (with access to electrical power and washrooms)	\$294		
	Deas Island	Fisher's Field	\$96		
	Pacific Spirit	Plains of Abraham	\$96		
	Pacific Spirit	Lily Site	\$96		
	Pacific Spirit	Heron Site	\$96		
	Pacific Spirit	Salish Site	\$96		
3.1 Outdoor Facilities - Miscellaneous					
	Campbell Valley	Campbell Downs Equestrian Riding Rings	\$154		
	Campbell Valley	Campbell Downs Overflow Parking Lot	\$96		
	Campbell Valley	McLean Pond	\$41		
3.1 Outdoor Facilities - Camping					
			Fee, per night	Youth group fee, per night	
	Campbell Valley	Camp Coyote Group Camp	\$224	\$112	
	Deas Island	Muskrat Meadows Group Camp	\$224	\$112	
	Tynehead	Raven's Nest Group Camp	\$224	\$112	
	Camping outside	\$6 per person	\$6 per person	\$6 per person	
				Seniors/Persons with disabilities fee, per night	
	Derby Reach	Edgewater Bar Campground Site	\$25	\$22	
		Additional Vehicle	\$12	\$11	

SCHEDULE A (continued)
(Effective May 1, 2021)

Section 3.0 REGIONAL PARK FACILITY PERMIT FEES (Continued)					
3.2 Indoor Facilities					
				Fee	Youth Group fee
	Capilano River	Camp Capilano	Overnight rental	\$1,120 per night	\$468 per night
			Day use, from 9am to 5pm	\$560 per day	\$246 per day
			Late checkout	\$200 per hour	\$200 per hour
			Lifeguarding service	\$40 per hour	\$40 per hour
			Security Deposit (0-2 nights)		\$250
			Security Deposit (3-6 nights)		\$500
	Boundary Bay	Cambridge House	Facility rental	\$84 per hour	n/a
			Tent or Over Occupancy Limit	\$335 per day	n/a
			Late checkout	\$200 per hour	n/a
			Security Deposit		\$500
	Deas Island	Inverholme Schoolhouse	Facility rental	\$62 per hour	n/a
			Security Deposit		\$500
	Minnekhada	Minnekhada Lodge	Facility rental	\$143 per hour	n/a
			Late checkout	\$200 per hour	n/a
			Security Deposit		\$500

Section 4.0 SPECIAL USE AND SPECIAL EVENT PERMIT FEES	
Type of Permit	Fee per day
Special Use Permit	NIL
Special Event Permit	Fee per day
Up to 50 persons	\$250
51 to 300 persons	\$435
301 to 500 persons	\$650
501 - 1500 persons	\$865
Over 1500 persons	\$1,930

SCHEDULE A (continued)
(Effective May 1, 2021)

Section 5.0 CANCELLATION FEES		
Park Permit	Cancellation Notification Period	Fee
Outdoor Facilities, See Schedule A section 3.1	More than 2 months prior to the rental date	\$25
	2 months or less prior to the rental date	100% of fee paid
Indoor Facilities, See Schedule A section 3.2	More than 6 months prior to the rental date	50% of security deposit
	6 months or less prior to the rental date	100% of security deposit
Special Events, See Schedule A section 4.0	More than 2 months prior to the event date	\$25
	2 months or less prior to the event date	100% of fee paid
Private Group, See Part 14 section 14.3	At least 14 days prior to the program date	\$25
	Fewer than 14 days prior to the program date	100% of fee paid
Edgewater Bar Camping, See Schedule A section 3.1	At least 2 days prior to arrival date	No Fee
	Fewer than 2 days prior to the arrival date	1 night of camping fees
	During stay (after arrival)	100% of fee paid

SCHEDULE A (continued)
(Effective May 1, 2021)

Section 6.0 FILMING FEES	
Location	Fee
Application Fee	\$250
MVRD Staff: Regular / Management	\$85/hr
Parkland – Reserves & Greenways – Film Day	\$900
Parkland – Reserves & Greenways – Still shoot Day	\$450
Parkland – Reserves & Greenways – Prep/Wrap/Hold Day	\$450
Parkland – Reserves & Greenways - Crew/Circus Staging Area	\$375/day
Parkland – Reserves & Greenways – Minor Shoot (crews of 10 people or less)	\$450
BC Mills House Houston House / Karr Mercer Barn Inverholme Schoolhouse	\$1,000/film day
BC Mills House Houston House Inverholme School House	\$600 prep/wrap/hold day
Burvilla Cammidge House Camp Capilano Delta Heritage Airpark Kanaka Creek Stewardship Centre Louck's House Minnekhada Lodge	\$1,875/film day
Burvilla Cammidge House Camp Capilano Delta Heritage Airpark Kanaka Creek Stewardship Centre Louck's House Minnekhada Lodge	\$1,125/ prep/wrap/hold day
Security Deposit (Certified Cheque) Note: Security Deposits can be amended subject to impact, risk of the facilities and Regional Parks	\$12,500

To: Regional Parks Committee

From: David Leavers, Division Manager, Visitor & Operations Services, Regional Parks

Date: March 11, 2021 Meeting Date: April 7, 2021

Subject: **Metro Vancouver Regional District Mosquito Control Service Amending Bylaw No. 1320, 2021 – Amends Bylaw 1164, 2012**

RECOMMENDATION

That the MVRD Board:

- a) give first, second and third reading to *Metro Vancouver Regional District Mosquito Control Service Amending Bylaw No. 1320, 2021*;
 - b) direct staff to seek consent of at least 2/3 of the participating member municipalities to amend the service by adding the City of Richmond to the Metro Vancouver Nuisance Mosquito Control Program, and following that, forward the *Metro Vancouver Regional District Mosquito Control Service Amending Bylaw No. 1320, 2021* to the Inspector of Municipalities for approval.
-

EXECUTIVE SUMMARY

The MVRD provides the service of preventing and abating the nuisance caused by mosquitoes to participating member jurisdictions. The MVRD Mosquito Control Service Bylaw provides the authority to do so. Since 2012, when the bylaw was last amended, the Metro Vancouver Mosquito Control Program has served five member municipalities: City of Coquitlam, City of Maple Ridge, City of Pitt Meadows, Township of Langley and the City of Surrey.

On March 8, 2021, the City of Richmond terminated its service agreement with Vancouver Coastal Health for a number of services, including mosquito control (Attachment 2). As a result, the City of Richmond is without a service provider and has requested that Metro Vancouver provide mosquito control services under the terms of the Metro Vancouver Nuisance Mosquito Control Program. A bylaw amendment is required to add the City of Richmond as a “Participating Area” under the bylaw.

Staff will fulfill all legal obligations required to amend this service including seeking consent of at least 2/3 of the participating member municipalities to amend the service and seeking the approval of the Inspector of Municipalities before presenting to the Board for consideration of final adoption and entering into a service agreement with the City of Richmond as a new Participating Area.

PURPOSE

To consider an amendment to the MVRD Mosquito Control Bylaw to add the City of Richmond as a Participating Area in the Metro Vancouver Nuisance Mosquito Control Program.

BACKGROUND

In 2005, the GVRD established the service of mosquito control administration and coordination by an establishment bylaw. Since that time, Metro Vancouver has overseen the administration of contracted mosquito control services for those member municipalities wishing to be part of the

program. Since the bylaw was last amended in 2012, the program has served five member municipalities: City of Coquitlam, City of Maple Ridge, City of Pitt Meadows, Township of Langley and the City of Surrey as the Participating Areas.

The current contract for mosquito control services is with Morrow BioScience Ltd and contract administration is undertaken by Regional Parks staff. The services provided by the contractor are summarized on the information sheet, Metro Vancouver Nuisance Mosquito Control Program (Attachment 3).

PROPOSED AMENDMENT

Participating Areas

The City of Richmond is without a mosquito control contractor and has expressed interest in becoming a Participating Area as part of the Metro Vancouver Nuisance Control Program. Under the terms of participation, the City of Richmond would receive the services of Metro Vancouver's contracted service provider to:

- monitor river levels, temperature, rainfall and snow pack levels
- monitor numbers of larval mosquitoes in water bodies
- apply natural occurring bacterial larvicide to water bodies
- monitor numbers of adult mosquitoes to gauge effectiveness of treatment
- provide public education and perform community outreach

Metro Vancouver's contractor has capacity to add the City of Richmond to the program without causing any reduction of service to the five existing Participating Areas. All costs of the program are borne by the Participating Areas.

As this is an amendment of an establishing bylaw, there are consent provisions to consider under the *Local Government Act*, including seeking the consent of at least 2/3 of participating member municipalities to amend the service and seeking the approval of the Inspector of Municipalities.

The Amending Bylaw is before the Board for first, second and third reading. Once third reading is given, the Amending Bylaw will be circulated to participating members to obtain their consent to the adoption of the Bylaw to include Richmond as a prospective participating area to the service. At least two-thirds consent of participants is required before the Amending Bylaw can be considered for adoption by the Board. Once consent is obtained, the Amending Bylaw will be forwarded to the Inspector of Municipalities for approval. If approved by the Inspector, the Amending Bylaw will be presented to the Board for consideration of final adoption. With the Board's final approval, Metro Vancouver will be able to enter into a service agreement with the City of Richmond as a new Participating Area.

ALTERNATIVES

- 1) That the MVRD Board:
 - a) give first, second and third reading to *Metro Vancouver Regional District Mosquito Control Service Amending Bylaw No. 1320, 2021*;
 - b) direct staff to seek consent of at least 2/3 of the participating member municipalities to amend the service by adding the City of Richmond to the Metro Vancouver Nuisance Mosquito Control Program, and following that, forward the *Metro Vancouver Regional District Mosquito Control Service Amending Bylaw No. 1320, 2021* to the Inspector of Municipalities for approval.
- 2) That the MVRD Board receive for information the report dated March 11, 2021, titled “Metro Vancouver Regional District Mosquito Control Service Amending Bylaw No. 1320, 2021 – Amends Bylaw 1164, 2012” and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

There are no financial implications to Metro Vancouver. The Participating Areas must pay the entire cost incurred by the District to provide the mosquito control services in each year that the services are provided. Such costs will be apportioned by the District among the Participating Areas, according to the usage of the mosquito control services by each Participating Area.

CONCLUSION

With the recommended bylaw amendment, the City of Richmond will join the Metro Vancouver Nuisance Mosquito Control Program as a Participating Area. Metro Vancouver would enter into an agreement for service with the City of Richmond that mirrors the agreements in place for the five member municipalities. Once this service agreement is in place, the City of Richmond will commence to receive the services of Metro Vancouver’s contractor as outlined in the report.

Attachments (44529678)

1. *Metro Vancouver Regional District Mosquito Control Service Amending Bylaw No. 1320, 2021 – Amends Bylaw 1164, 2012*
2. City of Richmond Regular Council Meeting Minutes dated March 8, 2021
3. Metro Vancouver Nuisance Mosquito Control Program

44200400

**METRO VANCOUVER REGIONAL DISTRICT
BYLAW NO. 1320, 2021
A Bylaw to Amend Greater Vancouver Regional District Mosquito Control Service
Bylaw No. 1164, 2012**

WHEREAS:

- A. Metro Vancouver Regional District's Board of Directors (the "Board") adopted the "Greater Vancouver Regional Mosquito Control Service Bylaw No. 1164, 2012" on March 30, 2012 (the "Mosquito Control Service Bylaw");
- B. The City of Richmond has advised that it wishes to participate in Metro Vancouver Regional District's service for preventing and abating the nuisance caused by mosquitoes; and
- C. The Metro Vancouver Regional District wishes to amend GVRD Mosquito Control Service Bylaw No. 1164, 2012.

NOW, THEREFORE, the Board of the Metro Vancouver Regional District enacts as follows:

Citation

- 1. The official citation of this bylaw is "Metro Vancouver Regional District Mosquito Control Service Amending Bylaw No. 1320, 2021". This bylaw may be cited as "Mosquito Control Service Amending Bylaw No. 1320, 2021".

Amendment of Bylaw

- 2. The Mosquito Control Service Bylaw is amended as follows:
 - a) Section 3 is amended by inserting ", City of Richmond" after "City of Surrey".

Read a first time this _____ day of _____, _____.

Read a second time this _____ day of _____, _____.

Read a third time this _____ day of _____, _____.

Passed and finally adopted this _____ day of _____, _____.

Sav Dhaliwal, Chair

Chris Plagnol, Corporate Officer



City of
Richmond

Minutes

Regular Council

Monday, March 8, 2021

Place: Council Chambers
Richmond City Hall

Present: Mayor Malcolm D. Brodie
Councillor Chak Au
Councillor Carol Day (by teleconference)
Councillor Alexa Loo (by teleconference)
Councillor Bill McNulty (by teleconference)
Councillor Linda McPhail (by teleconference)
Councillor Harold Steves (by teleconference)
Councillor Michael Wolfe (by teleconference)

Corporate Officer – Claudia Jesson

Call to Order: Mayor Brodie called the meeting to order at 7:00 p.m.

RES NO. ITEM

MINUTES

- R21/5-1-1 1. It was moved and seconded
That:
- (1) *the minutes of the Regular Council meeting held on February 22, 2021, be adopted as circulated;*
 - (2) *the Metro Vancouver 'Board in Brief' dated February 26, 2021, be received for information.*



**Regular Council
Monday, March 8, 2021**

The question on the motion was not called as discussion took place on the Metro Vancouver Board in Brief, specifically on (i) the George Massey Crossing Task Force, (ii) the burns bog ecological conservation area and learning from the recovery process, (iii) the micro plastics study and reducing production of micro plastics in Richmond, (iv) the impacts of water services on industrial lands and how Richmond can provide support, and (v) data on the Wipe It, Green Bin It campaign.

The question on the motion was then called and it was **CARRIED**.

Mayor Brodie noted that there were no members of the public permitted in the Council Chambers as a result of the December 4, 2020 Public Health Orders or pre-registered to participate by phone and therefore motions to resolve into Committee of the Whole to hear delegations from the floor on Agenda items and to rise and report (Items No. 2, 3, and 4) were not necessary.

CONSENT AGENDA

- R21/5-2 5. It was moved and seconded
That Items No. 6 through No. 14 be adopted by general consent.

CARRIED

6. **COMMITTEE MINUTES**

That the minutes of:

- (1) *the Parks, Recreation and Cultural Services Committee meeting held on February 23, 2021;*
 - (2) *the General Purposes Committee meeting held on March 1, 2021;*
 - (3) *the Finance Committee meeting held on March 1, 2021;*
 - (4) *the Planning Committee meeting held on March 2, 2021;*
- be received for information.*

ADOPTED ON CONSENT



**Regular Council
Monday, March 8, 2021**

7. 2021 COMMUNITY MURAL PROGRAM PROJECTS

(File Ref. No. 11-7000-09-20-255) (REDMS No. 6602983 v. 2; 6605716 v.3; 6211233; 6603651)

That the 2021 Community Mural Program projects as presented in the staff report titled “2021 Community Mural Program Projects” dated January 18, 2021, from the Director, Arts, Culture and Heritage Services, be approved and included in the Consolidated 5 Year Financial Plan (2021-2025).

ADOPTED ON CONSENT

**8. STEVESTON COMMUNITY PARK PLAYGROUND RENEWAL
NEXT STEPS**

(File Ref. No. 06-2345-20-STEV2) (REDMS No. 6581954 v. 6)

That the Steveston Community Park Playground Renewal Project proceed to detailed design and costing, as detailed in the staff report titled “Steveston Community Park Playground Renewal Next Steps,” dated January 20, 2021, from the Director, Parks Services, and that capital requests for implementation be submitted during the annual capital budget process.

ADOPTED ON CONSENT

9. YOUTH STRATEGY GUIDING PRINCIPLES

(File Ref. No. 07-3425-02) (REDMS No. 6611953 v. 2)

That the Guiding Principles detailed in the staff report titled “Youth Strategy Guiding Principles,” dated January 21, 2021, from the Director, Community Social Development, be endorsed; and be used to inform the strategic directions and actions of the draft Youth Strategy.

ADOPTED ON CONSENT



Regular Council
Monday, March 8, 2021

10. SENIORS STRATEGY GUIDING PRINCIPLES

(File Ref. No. 07-3400-01) (REDMS No. 6577387 v. 10)

That the Guiding Principles detailed in the staff report titled “Seniors Strategy Guiding Principles,” dated January 28, 2021, from the Director, Community Social Development, be endorsed and used to inform the strategic directions and actions of the draft Seniors Strategy.

ADOPTED ON CONSENT

11. VANCOUVER COASTAL HEALTH – TERMINATION OF SERVICE AGREEMENT

(File Ref. No. 10-6125-04-01; 01-0151-01; 12-8060-20-010240/10241; 03-1000-18-003) (REDMS No. 6615355 v. 2; 6599992; 6599874)

(1) That, as outlined in the staff report titled “Vancouver Coastal Health – Termination of Service Agreement” dated February 12, 2021 from the Director, Sustainability and District Energy and Acting Director, Public Works Operations:

(a) the service transition to the City for management and enforcement services currently provided by Vancouver Coastal Health (as defined in Public Health Protection Bylaw No. 6989 and Noise Regulation Bylaw No. 8856), be endorsed; and

(b) staff monitor the impacts of the service transition as it relates to service levels and the capacity of existing resources to absorb these activities and address any shortfalls as part of 2022 operating budget deliberations;

(2) That Public Health Protection Bylaw No. 6989, Amendment Bylaw No. 10240 be introduced and given first, second and third readings; and

(3) That Noise Regulation Bylaw No. 8856, Amendment Bylaw No. 10241 be introduced and given first, second and third readings.

ADOPTED ON CONSENT



**Regular Council
Monday, March 8, 2021**

12. EXTENDING NON-ACCEPTANCE OF CASH TRANSACTIONS AT CITY HALL

(File Ref. No. 09-5125-13-01; 03-1240-01) (REDMS No. 6615329)

That Council extends non-acceptance of cash transactions at City Hall until March 31, 2022

ADOPTED ON CONSENT

13. APPLICATION BY SPEERA VENTURES INCORPORATED FOR REZONING AT 10620 WILLIAMS ROAD FROM THE “SINGLE DETACHED (RS1/E)” ZONE TO THE “COMPACT SINGLE DETACHED (RC2)” ZONE

(File Ref. No. 12-08060-20-010244; RZ 20-891369) (REDMS No. 6612247 v. 3; 6614602)

That Richmond Zoning Bylaw 8500, Amendment Bylaw 10244, for the rezoning of 10620 Williams Road from the “Single Detached (RS1/E)” zone to the “Compact Single Detached (RC2)” zone, be introduced and given first reading.

ADOPTED ON CONSENT

14. MARKET RENTAL HOUSING AGREEMENT BYLAW 10242 TO SECURE MARKET RENTAL HOUSING UNITS AT 5500 NO. 3 ROAD

(File Ref. No. RZ 19-858804; 12-8060-20-010242) (REDMS No. 6610269 v. 1A; 6610734; 6602111)

That Market Rental Housing Agreement (5500 No. 3 Road) Bylaw 10242 to permit the City to enter into a Market Rental Housing Agreement substantially in the form attached hereto, in accordance with the requirements of Section 483 of the Local Government Act, to secure the Market Rental Housing Units required by Rezoning Application (RZ 19-858804), be introduced and given first, second and third readings.

ADOPTED ON CONSENT



Regular Council
Monday, March 8, 2021

ADJOURNMENT

R21/5-3

It was moved and seconded
That the meeting adjourn (7:48 p.m.).

CARRIED

Certified a true and correct copy of the
Minutes of the Regular meeting of the
Council of the City of Richmond held on
Monday, March 8, 2021.

Mayor (Malcolm D. Brodie)

Corporate Officer (Claudia Jesson)

METRO VANCOUVER NUISANCE MOSQUITO CONTROL PROGRAM

Morrow BioScience Ltd. has been contracted by Metro Vancouver to undertake nuisance mosquito control in areas of the Township of Langley, City of Surrey, City of Pitt Meadows, the District of Maple Ridge and the City of Coquitlam. The program includes:

- Monitoring river levels, temperature, rainfall and snow pack levels
- Monitoring numbers of larval mosquitoes in water bodies
- Applying naturally occurring bacterial larvicide to water bodies
- Monitoring numbers of adult mosquitoes to gauge effectiveness of treatment
- Public education and community outreach

Larval Mosquito Monitoring

Potential larval mosquito development sites are visited at least once every seven days from May through June to determine if any pesticide application is required. This process includes counting samples of larval mosquitoes in water bodies to determine when and how severe the hatch of adult mosquitoes will be and to best time larvicide applications to be most effective.

Controlling Mosquito Numbers with Larvicide

During larval mosquito monitoring, if the number of mosquito larvae counted in a sample exceeds predetermined threshold levels, a naturally occurring larvicide, Bti, is immediately applied to the water by hand or by helicopter over large areas. Bti is non-toxic, persists in the environment for only a few days and specifically targets mosquito larvae. Mosquito larvae ingest the bacteria with their food and die within a few hours. This is the most effective method to control numbers of adult mosquitoes.

Monitoring Effectiveness

To make sure the program is operating effectively, locations where larvicide have been applied are revisited and treated as required. Adult mosquito traps are also used to monitor effectiveness and provide species information.

Public Education and Community Outreach

Morrow BioScience Ltd. (MBL) operates a [Mosquito Hotline: 604-432-6228](tel:604-432-6228). Residents of Coquitlam, Langley, Surrey, Maple Ridge and Pitt Meadows can call this hotline number to report mosquito related concerns and get more information about mosquitoes and the Metro Vancouver Nuisance Mosquito Control Program. The phone line is available 24 hours a day and all inquiries are responded to within 24 hours of receiving messages. MBL also attends community education events in the participating municipalities to talk about the program and answer questions.

Protect Yourself

Mosquitoes are most active between dusk and dawn. If you are outside in the evening or early morning, minimize your exposure to bites by:

- Wearing long sleeved shirts and long pants.
- Wearing light-coloured clothing. Mosquitoes are attracted to dark, intense colours.
- Wearing clothing made of tightly woven materials that will keep mosquitoes away from the skin. The use of mesh “bug jackets” or “bug hats” is also recommended during extreme conditions.
- Using mosquito netting to protect infants when in an unscreened structure or when sleeping outdoors.
- Considering an insect repellent containing DEET or other approved ingredients.

For more information, call the Mosquito Hotline: 604-432-6228

COMMITTEE INFORMATION ITEMS AND DELEGATION SUMMARIES

Metro Vancouver Regional District

Board Meeting Date – Friday, April 30, 2021

This information item, listing recent information received by committee, is provided for the MVRD Board's information. Please access a complete PDF package [here](#).

Regional Parks Committee – April 7, 2021

Delegation Summaries:

No delegations presented

Information Items:

5.4 Status of Regional Parks Capital Expenditures to December 31, 2020

Regional Planning Committee – April 9, 2021

Delegation Summaries:

3.1 Blaire Chisholm, Pooni Group

Information Items:

5.1 Metro 2050 Q1 2021 Status Update

Performance and Audit Committee – April 14, 2021

Delegation Summaries:

No delegations presented

Information Items:

- 5.1 2020 Metro Vancouver Final Audit Findings Report
- 5.4 Capital Program Expenditure Update as at December 31, 2020
- 5.5 Semi-Annual Report on GVS&DD Development Cost Charges
- 5.7 Investment Position and Returns - September 1, 2020 to February 28, 2021
- 5.8 Tender/Contract Award Information – December 2020 to February 2021
- 5.9 Improving Metro Vancouver Financial Standing

Climate Action Committee – April 16, 2021

Delegation Summaries:

No delegations presented

Information Items:

- 5.2 Metro Vancouver Electric Vehicle Program Review and Recommendations
- 5.3 Feasibility of Targeted Invasive Plant Grazing in Metro Vancouver

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