metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

METRO VANCOUVER REGIONAL DISTRICT
AIR QUALITY AND CLIMATE

MEETING

Friday, July 4, 2025
9:00 am
28th Floor Committee Room, 4515 Central Boulevard, Burnaby, British Columbia
Webstream available at https://www.metrovancouver.org

A G E N D A

A. ADOPTION OF THE AGENDA

1. July 4, 2025 Meeting Agenda
That the Air Quality and Climate Committee adopt the agenda for its meeting scheduled for July 4, 2025 as circulated.

B. ADOPTION OF THE MINUTES

1. May 9, 2025 Meeting Minutes *pg. 7*
That the Air Quality and Climate Committee adopt the minutes of its meeting held May 9, 2025 as circulated.

C. DELEGATIONS

D. INVITED PRESENTATIONS

1. Dr. Mark Zacharias, Adjunct Professor, School of Public Policy, SFU and Special Advisor, Clean Energy Canada
Subject: BC's Electricity Grid Is Ready For 2030 And A Rapidly Electrifying Economy

E. REPORTS FROM COMMITTEE OR CHIEF ADMINISTRATIVE OFFICER

1. Update on Approach to Reduce Health-Harming Air Contaminants from Small Gas-Powered Equipment

pg. 15

Executive Summary

Small gas-powered equipment used in landscaping and light industrial applications generates about half the amount of health-harming air contaminants as all light-duty vehicles regionally. Several member jurisdictions have asked Metro Vancouver to explore reducing emissions from this source, and the Board directed staff to explore options.

Engagement with member jurisdictions, businesses, equipment users, and residents occurred in 2024 and 2025. Public sentiment was generally neutral or favored a shift to emission-free options, especially at the end-of-life of existing equipment. In general, there was strong support for education, incentives, and charging solutions with or without a regulation to address concerns about affordability, equipment performance, battery charging, and unfamiliar technology. Equipment users identified regulation and demand from clients as motivation for transitioning to emission-free equipment as long as timelines to change equipment are reasonable. Some types of equipment are more ready for the transition than others.

Based on engagement feedback, staff will develop an emission regulation proposal coupled with important supportive measures, seek input on the proposal from equipment users starting in Fall 2025, and then bring a resulting proposed regulation and supportive measures to the Board for consideration.

Recommendation

That the MVRD Board receive for information the report dated June 17, 2025, titled "Update on Approach to Reduce Health-Harming Air Contaminants from Small Gas-Powered Equipment".

2. BC Utilities Commission Proceeding on Renewable Natural Gas Definition and Accounting *pg. 40*

Executive Summary
Consistent with the MVRD Board's prior direction, staff are seeking the Board's approval to participate as an intervener in a BCUC-initiated proceeding to review accounting of renewable natural gas (RNG), in coordination with member jurisdictions. The proceeding will examine how RNG is defined and how associated greenhouse gas (GHG) emissions reductions are verified for RNG sourced from outside of BC. This issue is directly relevant to local governments in Metro Vancouver, both as policy makers and as RNG producers, and to the integrity of GHG reductions under CleanBC and local government policies. Staff would advocate for transparent, verifiable accounting aligned with regional and provincial policies and accepted GHG protocols.

Recommendation
That the MVRD Board direct staff to:
a) participate as an intervener in the BC Utilities Commission proceeding titled "BCUC Review of Renewable Natural Gas Definition and Accounting";
b) analyze and provide input to the proceedings to align with Board-adopted policies and targets including for regional air quality, clean and renewable energy, and GHG reduction, potentially including requests for information, comments, evidence, and replies; and
c) report back to the Air Quality and Climate Committee and the MVRD Board on the outcomes of the proceeding.

3. Air Pollutant Emissions Inventory and Trends in the Lower Fraser Valley *pg. 44*

Executive Summary
Metro Vancouver prepares emissions inventories for both Metro Vancouver and the broader Lower Fraser Valley to provide insights into emissions trends for greenhouse gases and air pollutants that directly affect human health. Reducing air pollutant emissions helps improve residents' health now and into the future - **a Health Canada study reported that today's cleaner air saves the lives of approximately 580 Metro Vancouver residents each year, compared to air quality in 2001.** The emissions inventory shows that from 2000 to 2020:

- emissions of most air pollutants are trending down;
- ozone precursor emissions (nitrogen oxides and volatile organic compounds) and sulphur oxides were significantly reduced;
- regional actions are helping to reduce fine particulate matter emissions; and
- continued efforts are needed to reduce greenhouse gas emissions.

Air quality improvements are due to actions by all levels of government, including regulatory and non-regulatory actions implemented by Metro Vancouver. Continued action is needed to further reduce air pollutants, many of which have no "safe" levels.

Recommendation
That the MVRD Board receive for information the report dated June 5, 2025, titled "Air Pollutant Emissions Inventory and Trends in the Lower Fraser Valley".

4. Trends in Emissions from Transportation (Personal Mobility) *pg. 55*

Executive Summary
In response to requests from Air Quality and Climate Committee members for more accessible and concise information about air quality and climate change, the attachment to this report summarizes current trends in the transportation (personal mobility) sector in the Metro Vancouver region to support discussions regarding regional policies and initiatives. Personal mobility remains the largest source of greenhouse gas (GHG) emissions and a significant source of other air pollutants that directly harm health. Between 2000 and 2019, regional GHG emissions from cars, SUVs, and small trucks and vans rose steadily, although per capita emissions decreased. Emissions decreased with COVID and then rebounded, though projections indicate a decrease in the years ahead. Specific trends include a shift towards more walking and cycling, more remote working, less travel in vehicles, and steadily increasing electric vehicle (EV) sales. Additionally, economic activity and jobs from the clean transportation industry are growing in BC and the Metro Vancouver region.

Recommendation
That the MVRD Board:
a) receive for information the report dated June 16, 2025, titled "Trends in Emissions from Transportation (Personal Mobility)"; and
b) direct staff to forward a copy of the report dated June 16, 2025, titled "Trends in Emissions from Transportation (Personal Mobility)" to member jurisdiction staff, with an offer of a presentation to Council upon request.

5. Trends in Emissions from Buildings *pg. 78*

Executive Summary
In response to requests from Air Quality and Climate Committee members for more accessible and concise information about air quality and climate change, the attachment to this report summarizes current trends in the buildings sector in the Metro Vancouver region to support discussions regarding regional policies and initiatives.

Buildings remain the second-largest source of regional greenhouse gas (GHG) emissions and a significant source of other air pollutants that directly harm human health. Upgrading existing buildings can improve energy efficiency and provide thermal safety for residents in response to more frequent extreme heat events. Between 2010 and 2022, GHG emissions increased from residential buildings by 11.5%, and by 20.7% from commercial and industrial buildings, primarily due to more than 42,000 new gas connections in this period. More local governments are adopting stronger standards for energy efficiency and GHG reduction in new construction but standards for upgrading existing buildings are lacking.

Recommendation
That the MVRD Board:
a) receive for information the report dated June 16, 2025, titled "Trends in Emissions from Buildings"; and
b) direct staff to forward a copy of the report dated June 16, 2025, titled "Trends in Emissions from Buildings" to member jurisdiction staff, with an offer of a presentation to Council upon request.

6. 2025 Update on Regional District Sustainability Innovation Fund Projects - Air Quality and Climate Action *pg. 100*

Executive Summary
This report provides an update on 17 Air Quality and Climate Action projects that were approved for funding between 2019 and 2024 under the Regional District Sustainability Innovation Fund and are currently in-progress or have been completed or discontinued since the last update to the designated Standing Committee.

Projects funded by the Sustainability Innovation Fund support regional sustainability, protect the environment, advance resilience, and continuously improve service delivery by allowing Metro Vancouver to explore and implement innovative approaches, and respond to emerging issues and evolving best practices. Of the 17 projects described in this report, five have been recently completed, one has been discontinued, and 11 are in progress, with six nearing completion. Recently completed projects include: an interactive, online toolkit to support climate literacy; a best practices guide with alternatives to open burning for managing agricultural waste; a database of building characteristics to support GHG emissions reductions; and an evaluation of new "hyperlocal" technologies for air quality monitoring.

Recommendation
That the MVRD Board receive for information the report dated June 6, 2025, titled "2025 Update on Regional District Sustainability Innovation Fund Projects – Air Quality and Climate Action."

7. Manager's Report *pg. 117*

Recommendation
That the Air Quality and Climate Committee receive for information the report dated June 13, 2025, titled "Manager's Report".

F. INFORMATION ITEMS

1. Metro Vancouver's 2025 Financial Performance Report No. 1 *pg. 121*

G. OTHER BUSINESS

H. RESOLUTION TO CLOSE MEETING

Note: The Committee 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.

I. ADJOURNMENT

That the Air Quality and Climate Committee adjourn its meeting of July 4, 2025.

Membership:

Dominato, Lisa (C) – Vancouver
Marsden, Dennis (VC) – Coquitlam
Baillie, Tim – Langley Township
Berry, Ken – Lions Bay
Dueck, Judy – Maple Ridge
Elford, Doug – Surrey
Gu, Alison – Burnaby
Lahti, Meghan – Port Moody
McCutcheon, Jen – Electoral Area A
McNulty, Bill – Richmond
Ross, Jamie – Belcarra
Ruimy, Dan – Maple Ridge
Wallace, Rosemary – Langley City
Watt, Linda – West Vancouver

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

METRO VANCOUVER REGIONAL DISTRICT
AIR QUALITY AND CLIMATE COMMITTEE

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Air Quality and Climate Committee held at 9:00 am on Friday, May 9, 2025 in the 28th Floor Committee Room, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:
Chair, Director Lisa Dominato, Vancouver
Vice Chair, Councillor Dennis Marsden, Coquitlam
Councillor Tim Baillie, Langley Township* (departed at 12:01 pm)
Director Ken Berry, Lions Bay*
Councillor Judy Dueck, Maple Ridge* (departed at 11:39 am)
Director Doug Elford, Surrey
Councillor Alison Gu, Burnaby
Director Jen McCutcheon, Electoral Area A (departed at 10:55 am)
Director Bill McNulty, Richmond
Director Jamie Ross, Belcarra
Director Dan Ruimy, Maple Ridge*
Councillor Rosemary Wallace, Langley City
Councillor Linda Watt, West Vancouver

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

MEMBERS ABSENT:
Director Meghan Lahti, Port Moody

OTHERS PRESENT:
Linda Fang, Hydrotechnical Specialist, Ebbwater Consulting
Jenny Koss, Assistant Program Manager, Flood Program, Ebbwater Consulting
Tamsin Lule, Principal, Ebbwater Consulting
Reza Rezvani, Water Resources Engineer-in-Training, Ebbwater Consulting

STAFF PRESENT:
Heather McNell, Deputy Chief Administrative Officer, Policy and Planning
Conor Reynolds, Director, Air Quality and Climate Action Services
Hadir Ali, Legislative Services Coordinator, Board and Information Services
Esther Bérubé, Division Manager, Air Quality Bylaw and Regulation Development, Air Quality and Climate Action Services
Erik Blair, Senior Planner, Air Quality and Climate Action Services
Morgan Braglewicz, Air Quality Planner, Air Quality and Climate Action Services
Geoff Doerksen, Air Quality Planner, Air Quality and Climate Action Services
Jason Emmert, Program Manager, Air Quality and Climate Action Policy, Air Quality and Climate Action Services
Daphne Mazarura, Senior Policy Analyst, Air Quality Bylaw and Regulation Development
Sara Muir, Air Quality Planner, Air Quality and Climate Action Services

Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services
Kathy Preston, Director, Environmental Regulation and Enforcement
Ken Reid, Superintendent Environmental Sampling and Monitoring, Air Quality and Climate Action Services
Lise Townsend, Division Manager, Air Quality and Climate Action Services
Johann Zerbe, Senior Policy & Planning Analyst, Air Quality and Climate Action Services

A. ADOPTION OF THE AGENDA

1. May 9, 2025 Meeting Agenda

That the Air Quality and Climate Committee adopt the agenda for its meeting scheduled for May 9, 2025 as circulated.

CARRIED

B. ADOPTION OF THE MINUTES

1. April 4, 2025 Meeting Minutes

That the Air Quality and Climate Committee adopt the minutes of its meeting held April 4, 2025 as circulated.

CARRIED

C. DELEGATIONS

1. Mariah Mund, Resilience Lead, Emergency Planning Secretariat and Deborah Carlson, Staff Lawyer, West Coast Environmental Law

Subject: Lower Fraser Floodplains Coalition

Mariah Mund, Resilience Lead, Emergency Planning Secretariat and Deborah Carlson, Staff Lawyer, West Coast Environmental Law, provided the committee with a presentation titled "A resilient future for the Lower Fraser: Multi-beneficial Flood Management" highlighting the work of the Lower Fraser Floodplains Coalition. Members were informed of the strategic work of the organization as well the organization's aim to facilitate cohesive strategic planning with stakeholders regarding developing and implementing the BC Flood Strategy.

In response to the presentation, Staff noted that at its April 25, 2025 meeting, the MVRD Board requested that the Board Chair send a letter to the Honourable Kelly Greene, Minister of Emergency Management and Climate Readiness, to request a meeting with the Chair of the Metro Vancouver Board and the Chair of the Metro Vancouver Air Quality and Climate Committee to discuss prioritizing the implementation of the BC Flood Strategy as it relates to the Metro Vancouver region.

D. INVITED PRESENTATIONS

1. Jenny Koss, Assistant Program Manager, Flood Program, Fraser Basin Council; and Reza Rezvani, Water Resources Engineer-in-Training, Ebbwater Consulting
Subject: Dike Vulnerability Mapping

Jenny Koss, Assistant Program Manager, Flood Program, Reza Rezvani, Water Resources Engineer-in-Training, and Tamsin Lyle, Principle, with Ebbwater Consulting, provided the Committee with a presentation titled "Dike Vulnerabilities Mapping" highlighting dike classifications and potential vulnerabilities in the Metro Vancouver region. Members were informed that vulnerability assessments are based on available information and they highlight a current gap in meeting design standards against risks of overtopping, breaching and/or earthquakes.

E. REPORTS FROM COMMITTEE OR CHIEF ADMINISTRATIVE OFFICER

1. Scan of Flood-related Capital Projects in the Metro Vancouver Region - Preliminary Results
Report dated April 17, 2025 from Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services, Regional Planning and Housing Services, presenting the preliminary results of the scan of flood-related capital projects in the Metro Vancouver region.

Marcin Pachcinski, and Linda Fang, Hydrotechnical Specialist, Ebbwater Consulting provided the Committee with a presentation titled "Scan of Flood-related Capital Projects in the Region" highlighting the initiative's aim to address information gaps around flood-related projects in the region, facilitate stakeholder involvement in projects, develop a prioritization criteria matrix and report back to the Committee as project work progresses.

It was MOVED and SECONDED
That the MVRD Board receive for information the report dated April 17, 2025, titled "Scan of Flood-related Capital Projects in the Metro Vancouver Region – Preliminary Results".

CARRIED

2. Climate 2050 Roadmap Update
Report dated April 9, 2025 from Johann Zerbe, Senior Policy & Planning Analyst, and Jason Emmert, Program Manager, Regional Climate Action Policy, Air Quality and Climate Action Services providing an update on a revised approach for integrating climate action and policy related to the four remaining *Climate 2050* issue areas into Metro Vancouver's planning processes and utility management plans.

Johann Zerbe and Jason Emmert provided committee members with a verbal update on the four remaining issues in the climate roadmap: land use and urban form, water and wastewater infrastructure, solid waste, and human health and wellbeing. Members were informed that a revised approach is being implemented, integrating these areas into existing departmental plans and implementation processes.

It was MOVED and SECONDED
That the MVRD Board receive for information the report dated April 9, 2025, titled "Climate 2050 Roadmap Update".

CARRIED

10:26 am the meeting was recessed.

10:30 am the meeting was reconvened.

3. Local Government Policy Toolkit for Improving Thermal Safety in Apartment Buildings

Report dated April 2, 2025 from Erik Blair, Senior Planner, Air Quality and Climate Action Services and Morgan Braglewicz, Air Quality Planner, Air Quality and Climate Action Services, providing the Air Quality and Climate Committee and MVRD Board with a policy toolkit, to support Metro Vancouver, member jurisdictions and regional agencies, designed to protect vulnerable residents from the health risks of extreme heat.

Erik Blair and Morgan Braglewicz provided committee members with a presentation titled "Local Government Policy Toolkit to Improve Thermal Safety in Apartment Buildings" highlighting the impact of the 2021 Heat Dome and the intention of this work to provide an actionable policy toolkit, to promote resident safety in apartments during extreme heat events, for local governments and regional authorities.

It was MOVED and SECONDED
That the MVRD Board:

a) receive for information the report dated April 2, 2025, titled "Local Government Actions for Improving Thermal Safety in Apartment Buildings"; and
b) direct staff to forward a copy of the report dated April 2, 2025, titled "Local Government Actions for Improving Thermal Safety in Apartment Buildings" to member jurisdictions with an offer of a presentation to Council upon request.

CARRIED

4. BC Utilities Commission Decisions on BC Hydro's Distribution Extension Policy and 2024 Rate Design Applications

Report dated April 10, 2025 from Lise Townsend, Division Manager, Air Quality and Climate Action Services and Sara Muir, Air Quality Planner, Air Quality and Climate Action Services informing the MVRD Board of the outcomes of two BC Utilities Commission Proceedings that Metro Vancouver participated in as an intervener.

Lise Townsend and Sara Muir provided the Committee with a verbal overview of the report noting that Metro Vancouver participated as Interveners for BC Hydro's Distribution Extension Policy and 2024 Rate Design applications. Members were informed that as a result of the participation, BC Hydro has committed to conduct more consultations with local governments on small scale multi-unit housing rate design and on the implications for the distribution extension policy.

10:55 pm Director McCutcheon departed the meeting.

It was MOVED and SECONDED

That the MVRD Board receive for information the report dated April 10, 2025, titled "BC Utilities Commission Decisions on BC Hydro's Distribution Extension Policy and 2024 Rate Design Applications."

CARRIED

5. Air Quality Advisory Program and Preparedness for 2025

Report dated April 7, 2025 from Geoff Doerksen, Air Quality Planner, Air Quality and Climate Action Services and Ken Reid, Superintendent Environmental Sampling and Monitoring, Air Quality and Climate Action Services, providing the Air Quality and Climate Committee with information regarding Metro Vancouver's air quality advisory program, wildfire smoke preparedness, and advisory planning activities for the 2025 advisory season.

Ken Reid and Geoff Doerksen provided committee members with a presentation titled "Air Quality Advisory Program and Preparedness for 2025" noting that the program's focus is to provide summer-time air quality warnings resulting from ground level ozone, smog and/or wildfire smoke. Members were informed that warnings are communicated through social media, media releases, the Metro Vancouver website and partner websites.

It was MOVED and SECONDED

That the MVRD Board receive for information the report dated April 7, 2025, titled "Air Quality Advisory Program and Preparedness for 2025".

CARRIED

6. Proposed Amendments to Air Quality Management Fees: Initiating Engagement

Report dated April 7, 2025 from Gaurav Singh, Air Quality Planner, Air Quality Bylaw and Regulation Development, and Esther Bérubé, Division Manager, Air Quality Bylaw and Regulation Development, Air Quality and Climate Action Services seeking MVRD Board approval to engage with interest holders on proposed amendments to MVRD Bylaw No. 1330, 2021.

Esther Bérubé and Kathy Preston, Director, Environmental Regulation and Enforcement provided the Committee with a presentation titled " Proposed Amendments to Air Quality Management Fees" providing an overview of proposed amendments to the Air Quality Management fee structure to better align with provincial and federal legislation. Members were advised that the aim of the amendments is to revise the fee schedule, correct inconsistencies, and ensure appropriate cost recovery.

In response to questions, committee members were advised that staff will provide more information on the background of the fees as well as legal costs and impacts in a cover report to the May 23, 2025 MVRD Board meeting.

11:39 am Cllr Dueck departed the meeting.

It was MOVED and SECONDED

That the MVRD Board direct staff to engage with interest holders on proposed amendments to the *Metro Vancouver Regional District Air Quality Management Fees Regulation Bylaw No. 1330, 2021*, based on the discussion paper in the report titled "Proposed Amendments to Air Quality Management Fees: Initiating Engagement", dated April 7, 2025.

CARRIED

7. Update on Work to Amend the GVRD Boilers and Process Heaters Emission Regulation Bylaw No. 1087, 2008

Report dated April 17, 2025, from Jacquay Foyle, Senior Project Engineer, Bylaw Regulation and Development, Air Quality and Climate Action Services and Lucy Duso, Division Manager, Collaboration and Engagement, External Relations, providing the MVRD Board with information on progress to update GVRD Bylaw No. 1087, 2008, which aim to reduce the impacts of nitrogen oxides (NOx) emissions from boilers and process heaters in this region.

It was MOVED and SECONDED

That the Air Quality and Climate Committee receive for information the report titled "Update on Work to Amend the GVRD Boilers and Process Heaters Emission Regulation Bylaw No. 1087, 2008", dated April 17, 2025.

CARRIED

8. Exploring Approaches to Manage Health-Related Air Contaminants from Commercial Food Production

Report dated April 11, 2025, from Daphne Mazarura, Senior Policy Analyst, Air Quality Bylaw and Regulation Development, and Esther Bérubé, Division Manager, Air Quality Bylaw and Regulation Development, Air Quality and Climate Action Services informing the Air Quality and Climate Committee about a project to explore health-related emission reduction measures for commercial food production equipment and processes.

Daphne Mazarura and Esther Bérubé informed committee members that Air Quality and Climate Action Services receive approximately 200 health-related complaints every year because of air contaminants from commercial food production and that the study proposed would assess the impacts of the contaminants as well as potential approaches to resolve existing policy gaps.

12:01 Councillor Baillie departed the meeting.

It was MOVED and SECONDED

That the Air Quality and Climate Committee receive for information the report dated April 11, 2025 titled "Exploring Approaches to Manage Health-Related Air Contaminants from Commercial Food Production".

CARRIED

9. Manager's Report

Report dated April 15, 2025, from Conor Reynolds, Director, Air Quality and Climate Action Services, providing the Air Quality and Climate Committee with an update on Climate 2050 Roadmaps.

Conor Reynolds informed committee members that staff are working with the Air Quality and Climate Committee Chair and Vice Chair to respond to correspondence from Stand.Earth regarding air quality and climate concerns related to the Tilbury LNG Expansion project as well as the environmental assessments related to the project.

It was MOVED and SECONDED

That the Air Quality and Climate Committee receive for information the report dated April 15, 2025, titled "Manager's Report".

CARRIED

F. INFORMATION ITEMS

No items presented.

G. OTHER BUSINESS

No items presented.

H. RESOLUTION TO CLOSE MEETING

No items presented.

I. ADJOURNMENT

It was MOVED and SECONDED

That the Air Quality and Climate Committee adjourn its meeting of May 9, 2025.

CARRIED

(Time: 12:05 pm)

Hadir Ali,
Legislative Services Coordinator

Lisa Dominato,
Chair

76205886

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Daphne Mazarura, Senior Policy Analyst, Air Quality and Climate Action Services
Laura Taylor, Senior Engagement Specialist, External Relations

Date: June 17, 2025 Meeting Date: July 4, 2025

Subject: **Update on Approach to Reduce Health-Harming Air Contaminants from Small Gas-Powered Equipment**

RECOMMENDATION

That the MVRD Board receive for information the report dated June 17, 2025, titled "Update on Approach to Reduce Health-Harming Air Contaminants from Small Gas-Powered Equipment".

EXECUTIVE SUMMARY

Small gas-powered equipment used in landscaping and light industrial applications generates about half the amount of health-harming air contaminants as all light-duty vehicles regionally. Several member jurisdictions have asked Metro Vancouver to explore reducing emissions from this source, and the Board directed staff to explore options.

Engagement with member jurisdictions, businesses, equipment users, and residents occurred in 2024 and 2025. Public sentiment was generally neutral or favored a shift to emission-free options, especially at the end-of-life of existing equipment. In general, there was strong support for education, incentives, and charging solutions with or without a regulation to address concerns about affordability, equipment performance, battery charging, and unfamiliar technology. Equipment users identified regulation and demand from clients as motivation for transitioning to emission-free equipment as long as timelines to change equipment are reasonable. Some types of equipment are more ready for the transition than others.

Based on engagement feedback, staff will develop an emission regulation proposal coupled with important supportive measures, seek input on the proposal from equipment users starting in Fall 2025, and then bring a resulting proposed regulation and supportive measures to the Board for consideration.

PURPOSE

To update the Air Quality and Climate Committee and MVRD Board on engagement and development work on a potential regulatory and supportive approach to reduce health-harming emissions from small gas-powered equipment.

BACKGROUND

The Metro Vancouver Regional District (MVRD) is responsible under the *Environmental Management Act* for the regulation of the air contaminants in the region and for managing air quality. Metro Vancouver's *Clean Air Plan* includes a strategy to reduce health-harming emissions from non-road equipment. At its May 31, 2024 meeting, the MVRD Board received a report

containing requests from three member municipalities calling on Metro Vancouver to explore reducing emission from small gas-powered equipment. At this meeting, the Board directed staff to "engage with interested audiences on options for developing a supportive framework and potential requirements to reduce health-harming air contaminant emissions from small non-road equipment".

IMPACTS OF EMISSIONS FROM SMALL GAS-POWERED EQUIPMENT

There are 400,000 to 600,000 pieces of small gas-powered equipment under 19 kW (25 horsepower) used in landscaping and light industrial applications in the region, and these generate about half as many tonnes of health-harming air contaminants as all the light-duty vehicles. Some of the equipment still uses emission-intensive, two-stroke engines. Emissions of concern include carbon monoxide, nitrogen oxides, fine particulate matter, and volatile organic compounds, all of which can harm human health. This is especially a concern for vulnerable groups including children, pregnant people, seniors, and people with existing health conditions.

The most common types are lawn mowers, hedge and line trimmers, leaf blowers, chain saws, and pressure washers. Most equipment is for personal use, however, professional equipment is used more intensively. As a result, personal use and professional operations contribute almost equally to the overall regional emissions.

READINESS FOR TRANSITION

Battery-powered equipment is a fast-developing, emission-free alternative to gas-powered engines. Battery-powered tools that match the performance of their gas-powered counterparts are becoming increasingly available, as manufacturers respond to both consumer demand and evolving requirements for emission-free technology. A technology review conducted for Metro Vancouver in 2024 and summarized in Attachment 1 found that battery-powered alternatives are more established for some categories of equipment. The findings were:

- Line trimmers, hedge trimmers, and small lawn mowers have similar performance and cost as gas-powered counterparts for personal and professional use.
- Leaf blowers and chainsaws are available for personal use but still require further development for professional needs.
- Electric ride-on mowers and utility vehicles are becoming more available, although costs remain relatively high.
- Specialized tools, such as pressure washers, log splitters, shredders, and augers, are the least transition ready.

ENGAGEMENT FEEDBACK

The engagement program explored pathways to reduce emissions from small gas-powered equipment by uncovering barriers and opportunities for different equipment users. The focus was professional landscapers, member municipalities, and grounds managers on large properties such as cemeteries, sports fields, and golf courses. Staff also surveyed residents, both equipment users and non-users. A summary of the engagement program appears in Figure 1 below. The engagement program communicated the benefits of reducing emissions, such as cleaner air and health protection, and the principles of regional consistency, fairness, and consideration for the health of

people exposed to equipment emissions. Details on the engagement program and findings can be found in Attachment 2.

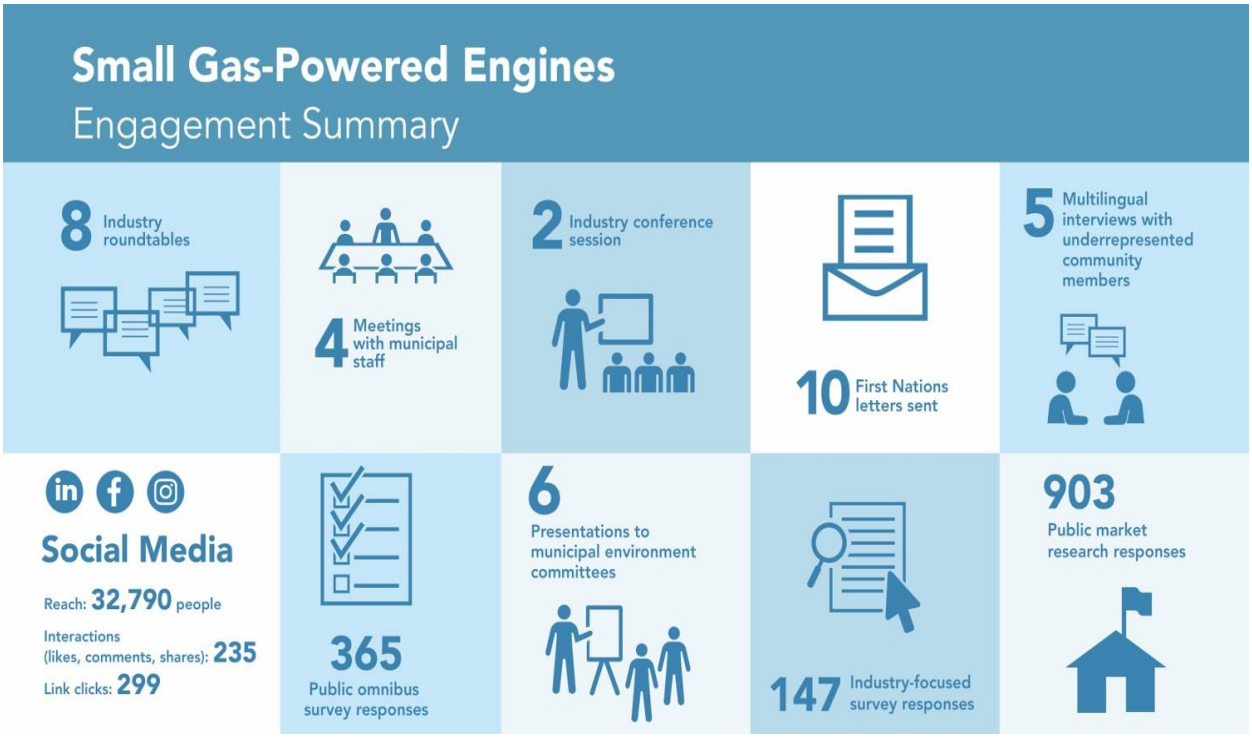


Figure 1: Small Gas-Powered Engines Engagement Summary.

Fifteen member jurisdictions participated in the engagement, either through municipal workshops or invitations to Metro Vancouver staff to attend municipal advisory committees. Professional and municipal users identified several challenges related to the adoption of emission-free equipment. Higher upfront costs including batteries were a major concern. Charging limitations, especially for large fleets, were consistently highlighted as a significant barrier to broader adoption. Many participants emphasized the need for a fair implementation timeline for any regional equipment replacement requirements, considering both equipment availability and performance in Metro Vancouver's wet climate.

Professional users stated that customer requirements and regulation, such as the City of Vancouver's motion in 2022 to "phase out and transition personal and commercial use of gasoline-powered landscape maintenance equipment in the City of Vancouver by 2024" (Reference 1), provided motivation for accelerating their transition to emission-free alternatives. Professional users expressed mixed opinions on the efficiency of emission-free alternatives, and a general lack of awareness about available equipment options was seen as a barrier.

While electric equipment was generally viewed as safer and easier to maintain, users noted that repair complexity and charging infrastructure remain ongoing issues. Participants also raised the need to improve recycling infrastructure for both old small gasoline-powered equipment and batteries. Personal users found costs to be relatively comparable to gas-powered models and less costly to maintain.

Suggestions to support the transition to emission-free equipment include incentives, buy-back programs, and education. A community of practice was identified as a valuable tool for sharing lessons learned, and public outreach with clear information is deemed essential. Public sentiment was generally neutral or favored a shift to emission-free options, especially at the end-of-life of existing equipment. Staff used this input to shape the approach for reducing emissions.

POTENTIAL REGULATORY APPROACH TO REDUCE HEALTH-HARMING EMISSIONS

The approach described below responds to the challenges and opportunities shared in the engagement program and includes pursuing an emission regulation.

Developing an emission regulation for small gas-powered equipment

Regulation would accelerate the regional transition to emission-free equipment and reduce emissions, particularly when combined with supportive measures and appropriate timelines. For instance, the MVRD Non-Road Diesel Engine Emission Regulatory Program for engines over 19 kW has helped to retire almost 370 large diesel engines since its inception in 2012. Similarly, a regulatory program for gas-powered engines under 19kW would also accelerate the phase-out of emission-intensive equipment. Many jurisdictions in Canada and abroad are implementing or considering regulations to shift away from small gas-powered equipment (References 1-4).

Staff will develop a regulatory proposal coupled with important supportive measures, engage on that proposal with the same audiences as described in this report starting in the fourth quarter of 2025, and return with a proposed regulation for Board consideration.

The regulatory proposal will seek to phase out the use of small gas-powered equipment over several years. The phase-out will start with categories where battery and gas-powered equipment are comparable, for instance, line and hedge trimmers. Other categories will be scheduled for a later phase-out, based on technology reviews and input from equipment users. Exemptions could apply to farming operations, emergency work, and seasonal work that requires higher performance. A regional emission regulation needs to align with existing policies and approaches in member jurisdictions. Addressing non-compliance is a key consideration, as it can be challenging to do for dispersed, transient activities such as the use of small equipment. Staff would engage with member jurisdictions on the potential for the Board to appoint staff from member jurisdictions as additional officers for the enforcement of an emission regulation.

SUPPORTIVE MEASURES

Engagement highlighted a need for supportive measures such as education, information exchange, incentives, and charging solutions that can be pursued with or without an accompanying regulation, as described below. This work will be phased into the work plans gradually for the next few years and absorbed by existing budget allocations.

Promote education, information exchange, and incentives

Professional users highlighted the importance of peer learning and education in this fast-evolving field, especially on technology, charging solutions, and best industry practices. Many equipment users indicated that incentives for purchasing large equipment and batteries and recycling gas-

powered equipment would accelerate the transition. Limited rebates are currently available through the BC Go Electric Program for utility golf carts and ride-on lawnmowers (Reference 5).

Actions for education, information exchange, and incentives include:

1. Organize and participate in demonstration events, workshops, and trade shows for equipment users, like the "Go Electric Parks!" Sustainability Innovation Fund project.
2. Promote peer learning networks and communities of practice on emission-free technology and sustainable landscaping practices.
3. Advocate for public access to affordable emission-free equipment via non-profit and community shared resources. An example of this is the Vancouver Tool Library (Reference 6).
4. Advocate for additional incentives with provincial and federal governments and explore other incentive mechanisms, such as the Regional District of Central Okanagan's Lawn Swap Program (Reference 7).
5. Share findings from Metro Vancouver's operational experience using small emission-free equipment.

Facilitate charging solutions for battery-powered equipment

Short battery run-time and access to charging remain major barriers for professional operators both on-site and off-site. Charging technologies are quickly emerging, driven by the uptake of battery-powered tool manufacturing, but these solutions are yet to be scaled up for broader applications.

Actions to support battery-charging solutions include:

1. Pilot battery-charging solutions with scalable potential in collaboration with academia, member jurisdictions, and energy utilities. An example of this is the "Lights, Camera, Climate Action!" Sustainability Innovation Fund project (Reference 8).
2. Promote adoption of battery-charging solutions via information exchange and peer networks.

USE OF EMISSION-FREE EQUIPMENT IN METRO VANCOUVER OPERATIONS

Metro Vancouver is a substantial user of small-gas powered equipment under 19 kW. For example, parks, housing, and utility facilities require landscape maintenance. The fleets program includes ride-on equipment near 19 kW, some service areas own hand-held or pushed equipment, and others hire contractors. Some service areas have already initiated the transition toward emission-free alternatives where feasible and cost-effective, particularly when equipment reaches its end of life. This would continue within existing budget allocations and asset management plans independently of potential regulatory development.

Actions for Metro Vancouver operations to lead by example include:

1. Evaluate the feasibility of switching to emission-free alternatives across the organization.
2. Review procurement procedures for small emission-free equipment where feasible.
3. Prioritize contractors that use small emission-free equipment where feasible, similar to the National Capital Commission (Reference 9).

4. Support the development of on-site and off-site battery-charging solutions for Metro Vancouver service areas through collaboration with academia, member jurisdictions, and energy utilities.

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

FINANCIAL IMPLICATIONS
Financial implications of compliance promotion mechanisms and enforcement will be evaluated during the engagement and regulation development. This information will be in the report presenting a proposed emission regulation for the Board's consideration. Work on supportive measures can be undertaken within existing resources and budget allocations during the next few years. Use of emission-free equipment in Metro Vancouver operations will continue within existing budget allocations and asset management plans.

CONCLUSION
This report presents an approach to reduce health-harming air contaminants from small gas-powered equipment, informed by the results of engagement with equipment users. Staff will develop a proposed emission regulation for small gas-powered equipment bolstered by supportive measures, such as charging solutions, education, and incentives. Any proposed regulation will be shaped by additional engagement and brought to the Board for consideration. Metro Vancouver is already demonstrating leadership by using emission-free equipment where operationally feasible and cost-effective.

ATTACHMENTS
1. "Technology Assessment of Readiness for Electrification of Small Non-Road Engines – Executive Summary", dated April 2024.
2. "Reducing Emissions from Small Gas-Powered Equipment - Engagement Summary, January to May, 2025", dated June 9, 2025.
3. Presentation re: "Update on Approach to Reduce Health-Harming Air Contaminants from Small Gas-Powered Equipment", dated July 4, 2025.

REFERENCES
1. City of Vancouver. (2022, January 26 and 27). *Minutes of the Standing Committee of Council on Policy and Strategic Priorities*. Item 9: Towards a Quieter and Emission-Free Landscape Maintenance Equipment Future in Vancouver (Member's Motion B.4). https://council.vancouver.ca/20220126/documents/pspc20220126min.pdf#page=27.
2. California Legislative Counsel. (2021-2022). *AB-1346 Air pollution: small off-road engines.* https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB1346
3. New York State. (2025). *Assembly Bill A2114.* https://www.nysenate.gov/legislation/bills/2025/A2114
4. District of Oak Bay. (2022, May 24). *Minutes of the Council Meeting*. Item 2022-434: Gas-Powered Leaf Blowers (Notice of Motion). https://oakbay.civicweb.net/document/82703/2022-05-24-Council-Minutes-6_00PM/.

5. Government of British Columbia. (n.d.). *Rebates*. CleanBC Go Electric. https://www.goelectricotherrebates.ca/rebate.
6. Vancouver Tool Library. (n.d.). https://vancouvertoollibrary.com/.
7. Regional District of Central Okanagan. (2025). *Lawn Swap*. Lawn Swap Rebate Program. https://www.rdco.com/en/environment/lawn-swap.aspx.
8. Metro Vancouver. (2021). *Sustainability Innovation Fund. Lights, Camera, Climate Action!*. https://metrovancouver.org/about-us/sustainability-innovation-fund/project/55.
9. National Capital Commission. (2021, November 17). *NCC banning gas-powered small tools*. https://ncc-ccn.gc.ca/news/ncc-banning-gas-powered-small-tools.

71796662

Technology Assessment of Readiness for Electrification of Small Non-Road Engines

Prepared for:

Metro Vancouver Regional District

April 2024

dunsky Energy + Climate

Submitted to:

Metro Vancouver Regional District

Marina Richter
Senior Air Quality Planner

Dunsky Project Number: 23116

Prepared by:

Dunsky Energy + Climate Advisors
50 Ste-Catherine St. West, suite 420
Montreal, QC, H2X 3V4

www.dunsky.com | info@dunsky.com
+ 1 514 504 9030

Notice to Reader: *This report has been reviewed by representatives of Metro Vancouver, who commissioned the study, but the interpretation of the results of this study, as expressed in the report, is entirely the responsibility of the consultant authors and does not imply endorsement of specific points of view by Metro Vancouver. The findings and conclusions expressed in the report are the opinion of the authors of the study and may not necessarily be supported by Metro Vancouver. Any use by a third party of the information presented in this report, or any reliance on or decisions made based on such information, is solely the responsibility of such third party.*

Executive Summary

Metro Vancouver has an opportunity to improve local air quality and reduce health-harming air contaminants. Gas- and diesel-powered (Internal Combustion Engine, or ICE) Small Non-Road Engines (SNREs) used in landscaping and maintenance equipment have a significant impact on air quality as many of the pieces of equipment are highly polluting 2-stroke engines. **Battery-powered equivalents are increasingly becoming available** though, allowing most users to transition to zero-emission alternatives to meet their needs. New entrants and established incumbent manufacturers are racing to enter this market because it is increasingly clear that electrified equipment is the best overall choice for users. However, local government has the potential to accelerate this transition through targeted incentives, regulations, leadership, and advocacy.

A core difficulty with regulating this equipment is understanding the **wide range of use cycles, functions, engines, and needs of the equipment and users.** This study examines the most common equipment that was identified by landscaping companies, distributors, and manufacturers in Metro Vancouver – it covers the most common residential and commercial landscaping equipment, while giving consideration to other niche, specialized pieces of equipment. Metro Vancouver Regional Districts Non-Road Diesel Engine Emission Regulation Bylaw No. 1329 addresses equipment over 25 Horsepower or 19 kW of output and the purpose of this study is to assess the technological readiness of equipment below that size threshold. For the purpose of this study, we have divided the customers between two categories – **residential** users and **commercial** landscaping companies.

Categories of equipment

The core four is a term used by manufacturers and distributors to categorize the four (or five) most common pieces of equipment owned by residential users which includes **lawn mowers, line trimmers, hedge trimmers,** and **leaf blowers** – a fifth addition also includes **chainsaws.** This equipment category is primarily small, handheld, and typically has low duty cycles and infrequent use. For residential users (sometimes referred to as "consumers" by manufacturers and distributors), this equipment is relatively easy to transition to battery-powered equipment. Operators report better safety, improved ergonomics and air quality, and higher satisfaction. Manufacturers are rushing to match ICE models of this equipment quickly as there is high demand in the market. It is available from major manufacturers and consistently is found to meet user needs. Metro Vancouver and stakeholders signaled a **strong desire to transition to battery-powered equipment** for this equipment category.

The second group of equipment are the high-performance commercial equivalents of the same handheld pieces of equipment **– chainsaws, line trimmers, and hedge trimmers are considered quite easy to transition while leaf blowers and lawnmowers have higher power requirements and are considered far more difficult** to transition to battery-powered equipment. The first three are small, handheld, have low power outputs, and have relatively low duty-cycles – perfect candidates to be transitioned to battery-powered options. The **leaf blowers and lawn mowers** have higher power requirements, are larger, and can have much longer duty-cycles that make it more difficult to meet all the needs of users. Battery-powered

leaf blowers in particular were identified by almost all users to be particularly difficult to use during the **commercial users' fall leafing season**.

The third category are **small vehicles – riding lawn mowers and utility vehicles** used in landscaping. These two types of battery-powered equipment are larger, significantly more expensive, and can struggle to meet the power needs of the equipment for the current duty cycle. There are fewer models available on the market as manufacturers focus on smaller equipment, so the options for residential and commercial customers are more limited. However, this market is **rapidly seeing new options** and there is a **growing acceptance** of the equipment in Metro Vancouver that suggests it is going to continue to grow in coming years.

The final category we found are the **other specialized equipment** – this is a broader category that can include niche equipment like **augers and wood splitters,** highly specialized equipment like **turfgrass mowers,** or industry-specific equipment like **commercial pressure washers.** This category of equipment has seen the least development of the market, which stakeholders suggested can be from several reasons – some said that as niche equipment, there is **not enough appetite in the market** to conduct research and development into niche equipment, whereas others suggested that the **power requirements** for this equipment can be too high to be met with batteries.

The **purchase, use, refueling, and maintenance of battery-powered equipment is also distinct** from ICE equipment. Purchasing the equipment is not as simple – commercial users in particular must carefully consider which brand they choose (due to manufacturer's battery non-interoperability, in which batteries are only able to be used for that specific manufacturer), determine the right number of batteries to meet their needs, and consider charging infrastructure in their workspace. Stakeholders repeated that the biggest pain point is coordinating charging and batteries to meet their daily needs. However, most stakeholders still suggested that the benefits of battery-powered equipment **outweigh the drawbacks.**

Incentives, regulations, and advocacy

This report identifies gaps, opportunities, and policy models that could be considered by Metro Vancouver to implement or work with the province to develop **incentives for battery-powered equipment** to help drive a faster transition to zero-emission equipment, which can include:

- **Rebates on equipment, batteries, and chargers** with options for trade-in, point-of-sale, or by application.
- **Expansion of provincial ZEV rebates** to include riding lawn mowers, utility vehicles, and portable chargers.

Different regulatory models could **allow the restriction of ICE equipment use** which would provide sufficient warning and be paired with incentives, supportive actions, and possible exemptions:

- **Electric first procurement policies** and **Environmental Benefit Adders in procurement** to contracts with private landscaping companies.
- **Education programs** to help residential and commercial customers learn and understand options, like "test-drives" and partnering with industry associations.

- **Harmonization of noise and nuisance bylaws and regulations** with member municipalities in Metro Vancouver.
- Advocacy to **reduce workers compensation insurance costs** for commercial users of battery-powered equipment.
- Advocacy to the provincial government to **better align ZEV incentives.**

metrovancouver

Reducing Emissions from Small Gas-Powered Equipment

Engagement Summary, January to May, 2025

Acknowledgements
Thank you to everyone who provided input on a regional approach to reduce emissions from small gas-powered equipment. Metro Vancouver embraces collaboration and innovation to provide sustainable regional services, contributing to a livable and resilient region and a healthy natural environment for current and future generations. We sought input on a regional approach to reducing emissions from small gas-powered equipment with the goal to share information about the scope of emissions, gain insight on industry trends and best practices, understand any barriers various communities and sectors were experiencing to transitioning to emission-free equipment, and generate a feasible approach to accelerate a transition to emission-free equipment in the region.

About Metro Vancouver
Metro Vancouver is a diverse organization that plans for and delivers regional utility services, including water, sewers and wastewater treatment, and solid waste management. It also regulates air quality, plans for urban growth, manages a regional parks system, provides affordable rental housing, and serves as a regional federation. The organization is a federation of 21 municipalities, one electoral area, and one treaty First Nation located in the region of the same name. The organization is governed by a Board of Directors of elected officials from each member jurisdiction.

4515 Central Boulevard, Burnaby, BC, V5H 0C6
www.metrovancouver.org
June 9, 2025

This engagement report provides a summary of the engagement program that took place between October 2024 and January 2025 to hear from equipment users about reducing emissions from small gas-powered equipment, largely used in landscaping. This engagement gathered input from both professional and residential equipment users, and staff from member municipalities. The input provided valuable insights that staff have used to develop recommendations for decision makers.

About the initiative to reduce emissions from small gas-powered equipment

Gas-powered equipment like lawnmowers, chainsaws, and leaf blowers are used by both personal and professional operators. These types of equipment emit harmful air pollutants, including fine particulate matter, carbon dioxide, methane, and nitrogen oxides, which contribute to poor air quality and have significant health impacts—particularly for children, seniors, and people with existing health conditions.

The Metro Vancouver Board supported engaging with other governments, including member jurisdictions and First Nations, the professional landscaping industry and other relevant industries, and the public to identify an effective approach for reducing emissions from small gas-powered equipment (SGPE).

The long term, regional goal is to transition to emission-free equipment, and this initiative explored how Metro Vancouver can support and accelerate this transition.

Executive Summary

Staff delivered a five-month engagement program to explore pathways to reducing harmful emissions from gas-powered equipment. Communications highlighted the benefits of reducing emissions (resident health, cleaner air, environmental protection) as well as the co-benefits (noise reduction, worker health). Professional representation included landscaping associations, irrigation companies, cemeteries, golf clubs, member parks departments, school boards, horticulture and landscaping university instructors, and sports venues. Staff also asked for input from First Nations, member jurisdictions, and the health agencies. Public opinion was captured through market research.

Participants shared a range of perspectives. The main themes heard were largely around upfront costs, specifically battery components and battery charging infrastructure for larger fleet managers; request for financial supports; support for phased in requirements (for example as technologies expand); preference for regulations that allow existing working equipment to continue until end of life; regional consistency in approach and enforcement; and support for protecting public health.

About the Engagement Program

Metro Vancouver conducted a comprehensive engagement program to inform and gather input on potential approaches to reduce emissions from small gas-powered equipment. The engagement aimed to raise awareness, better understand the issues different types of engine owners have in transitioning to emission-free equipment, and collect input on a feasible approach from a broad range of interests. A web resource provided information and highlighted opportunities for input. An invitation to participate was distributed via direct correspondence, social media, industry association channels, municipal networks, and at landscaping industry events. Roundtables were hosted for industry professionals and other governments. To better understand the distinct perspectives from underrepresented communities, in-depth interviews were conducted in multiple languages.

An industry-focused survey was promoted to industrial users, and public interests were captured through surveys. All input was documented, analyzed, and used to inform the proposed approach to be considered by the MVRD Board.

The table below provides a summary of engagement activities including intended audiences.

Activity	Audience	Timing 2024-2025	Medium
Invitation to complete feedback form and attend a roundtable	Industry representatives including golf courses, cemeteries, large property maintainers, school boards	October – December 2024	Webpage, Emails, Social Media, Industry Association correspondence
Presentations to Municipal Environment Committees	Surrey Environment and Climate Change Committee, Langley Environmental Sustainability Committee, Coquitlam Sustainability And Environmental Advisory Committee, Port Moody Climate Action Committee, District Of West Vancouver Environment Committee, Burnaby Environment Committee	September – November 2024	Virtual and In-Person
Focused discussion with member jurisdictions	Member municipal staff including parks and others who operate or manage fleets with this engine type	July – September 2024	Virtual
Invitation to First Nations to provide input	First Nations (ten): • Katzie First Nation • Kwantlen First Nation • Kwikwetlem First Nation • Matsqui First Nation • Musqueam Indian Band • Qayqayt First Nation • Semiahmoo First Nation • Squamish Nation • Tsawwassen First Nation • Tsleil-Waututh Nation	October 2024	Email
Industry Roundtables	Industry representatives including golf courses, cemeteries, large property maintainers, school boards	2024: October 16 November 12 November 14 November 19 November 22 November 25 November 27 December 2	Virtual and In-Person

Industry Conferences: Presentation and Dialogue Session	Landscaping professionals, turf grass professionals, students, and relevant associations	September 27, 2024 February 12&13, 2025	In-Person
In-language interviews with landscapers	Professional landscapers who speak languages other than English and are representative of newcomer/ immigrant communities.	December 2024 / January 2025	Virtual
Omnibus survey	Residents of Metro Vancouver	October 2024	Virtual and phone
Market research on resident buying trends and preferences	Residents of Metro Vancouver, with a focus on equipment owners/users	March / April 2025	Virtual

Engagement Promotion

The engagement was promoted on the Metro Vancouver website and on social media. Industry associations assisted in distributing information directly to their members.

Website

During this engagement, there were over 500 project webpage views and visits from 406 unique users.

Feedback Form

The feedback form consisted of ten questions as well as the opportunity to provide comments and suggestions. The feedback form was promoted on the Metro Vancouver homepage, social media, as well as in direct email promotions and at all meetings and roundtables.

Social Media

The engagement was promoted on social media on LinkedIn and Facebook - using targeted posts to specific interests on Facebook and specific job titles on LinkedIn - to build awareness of the project, encourage feedback and social sharing.

E-mails

The engagement was promoted in e-mails to the project database, Metro Vancouver Air Quality Initiative subscribers, as well as association member databases, including the BC Landscape and Nursery Association, Municipal environmental committee networks, and Irrigation Industry Association of BC.

Engagement Participation

Roundtable Meetings

Over 80 participants joined 8 roundtable meetings between October to December 2024 to learn about the scope of regional emissions from small gas-powered equipment, potential approaches to reduce or eliminate them, and provide input about issues and opportunities to emission-free engine transition. The roundtables were tailored to the audience; landscaping professionals, golf course managers, school boards, universities, cemeteries, and other interested parties. Over 40 member jurisdiction staff joined discussions with Metro Vancouver staff to discuss local government fleet transitions.

Presentations at externally hosted sessions
Metro Vancouver staff attended six municipal environment committees to present, and hear input on managing emissions from small gas-powered equipment. Staff were also asked to present at a BCLNA conference session, which had over 25 attendees from the landscape and nursery industry, as well as students and instructors of professional landscaping training programs, participating in dialogue on industry barriers and opportunities to transitioning to emission-free equipment, and input on potential approaches.

Feedback Form Responses
Staff received 147 feedback forms mainly from professional landscapers, large property maintainers, and municipal parks and maintenance departments. These responses provided valuable insights into current equipment use and perceptions around transitioning to emission-free alternatives. A large majority (92%) reported using gas-powered equipment, with smaller proportions using diesel (72%) or manual tools. Many larger fleets reported using a combination of gas and electric equipment. When asked about the most realistic timeframe for a full transition, the majority of respondents (40%) identified a 3–5 year window as most feasible.

Respondents also shared that equipment is typically replaced only at end-of-life, suggesting that any transition strategy must account for long replacement cycles. Additionally, 84% indicated there are circumstances in which electric equipment cannot currently meet their needs, highlighting performance limitations as a key barrier.

To help accelerate the transition, the top three supports identified were:
- rebates and financial incentives,
- free or subsidized equipment trials, and
- more accessible information on equipment and performance.

Respondents also expressed strong interest in the creation of a community of practice to share knowledge, as well as testimonials from current users of emission-free equipment to help guide informed decision-making and build confidence in emerging technologies.

In-language Interviews
To better understand the barriers and opportunities for small, independent landscapers transitioning to emission-free equipment, Kambo Energy Group, through its Empower Me program, conducted targeted outreach on behalf of Metro Vancouver to landscapers from newcomer and immigrant communities—groups often missed by traditional engagement. Using a culturally sensitive, community-led approach, they issued callouts through trusted networks and platforms like WeChat to recruit participants.

Five small commercial landscapers operating in the Lower Mainland were selected for in-depth, in-language interviews. As newcomers or immigrants serving clients from similar backgrounds, participants shared both personal experiences and community-driven perspectives.

Key findings included:
- Financial constraints (high upfront costs, labour, battery replacement) as a primary barrier
- Performance issues with electric equipment, especially for intensive tasks and wet conditions
- Openness to using electric tools for lighter jobs
- Strong interest in incentives, training, and peer learning opportunities

This approach enabled honest, detailed input that revealed not only business-level challenges, but also how community expectations shape equipment choices and service delivery.

Omnibus Survey

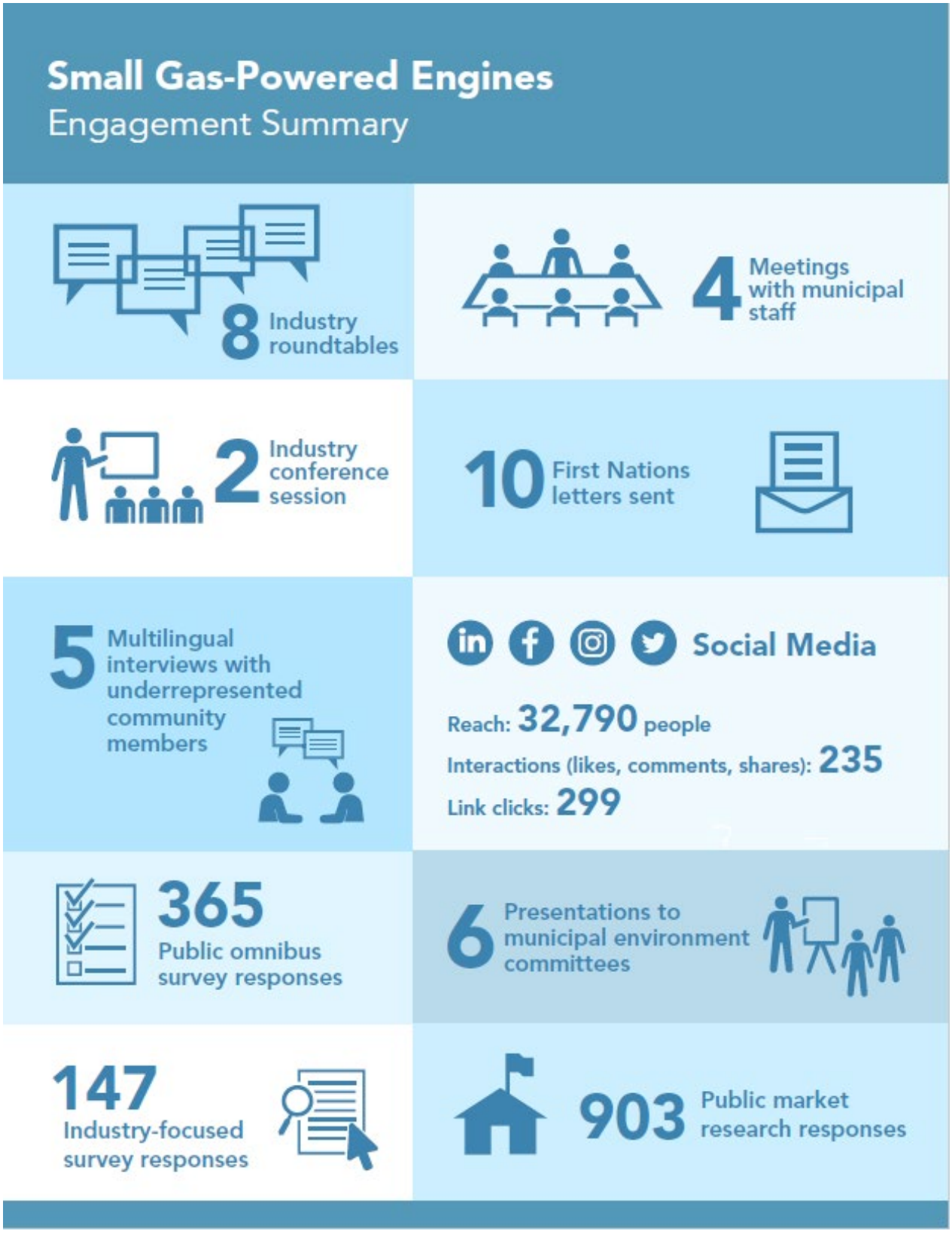
Metro Vancouver surveyed residents aged 18 and older about their ownership and use of small gas-powered equipment (SGPE) and their attitudes toward transitioning to emission-free alternatives. Conducted online with 670 participants, the survey found that 39% of households own SGPE, with lawnmowers and pressure washers being the most common.

Awareness that SGPE emits air pollutants is high (91%), and 61% of respondents expressed concern, though owners were generally less concerned than non-owners. Despite this, 70% of all residents—and 62% of owners—support a transition to emission-free equipment, with non-owners showing stronger support overall. Looking ahead, 61% of owners would choose an emission-free replacement when their equipment reaches end-of-life, while 30% would repurchase gas-powered tools.

Market Research

Metro Vancouver surveyed 903 residents, and discovered about half own small engine equipment, with one-third owning gas-powered models, over 40% owning electric models, and a quarter owning both. Pressure washers, lawn mowers, leaf blowers, and line trimmers are the most commonly owned tools. Residents typically own two pieces of equipment, and gas-powered push lawn mowers are the most prevalent. While gas and electric models are perceived as similar in purchase cost, gas-powered tools are seen as more expensive to maintain. Cost—both upfront and ongoing—is the top consideration when purchasing, followed by performance.

Among gas-powered equipment owners (about one-third of residents), most expect to replace their tools within the next decade, with 41% to 63% anticipating replacement within five years depending on the equipment type. Just over half of these owners plan to switch to electric models, often motivated by ease of use, environmental benefits, and quieter operation. However, over one-third plan to stick with gas, mainly citing perceived superior performance. Financial incentives—especially point-of-sale discounts or partial refunds—are widely seen as effective in encouraging a switch. Support for local government involvement in promoting electric equipment is moderate: 44% of gas users and nearly half of electric users are supportive, while most others remain neutral. Satisfaction among electric equipment owners is high (88%–95%), particularly for ride-on mowers.


Small Gas-Powered Engines
Engagement Summary
8 Industry roundtables
4 Meetings with municipal staff
2 Industry conference session
10 First Nations letters sent
5 Multilingual interviews with underrepresented community members
Social Media
Reach: 32,790 people
Interactions (likes, comments, shares): 235
Link clicks: 299
365 Public omnibus survey responses
6 Presentations to municipal environment committees
147 Industry-focused survey responses
903 Public market research responses

What We Heard and How We're Responding

Issue/ Theme	Feedback and Response
Financial Impact	What we heard: Respondents identified higher upfront costs for small gas-powered equipment alternatives as a key barrier, primarily due to battery costs and the need for multiple batteries to meet operational demands. Additional expenses related to retrofitting workshops or buildings and establishing reliable charging infrastructure were also noted. While personal users felt costs were more comparable, many commercial users with larger fleets recommended rebate programs—including for batteries—as well as trade-in or buy-back programs to help offset transition costs. How we're responding: • Promote and advocate for incentives for emission-free equipment • Support for the development of charging solutions for battery-powered equipment
Implementation of a potential requirement	What we heard: Respondents emphasized the need for adequate time, planning, and information to support a successful transition. A phased approach to any regulation or requirement was recommended, taking into account equipment availability, seasonal performance, and the ability to use existing gas-powered equipment until end-of-life. Some professional landscapers reported that regulation and requirements from their customers was a motivator them to transition to emission-free equipment. Concerns were also raised about whether current electric options meet performance and ergonomic needs, particularly for commercial use, though some noted they are adequate for residential tasks. How we're responding: • Provide timelines to phase out equipment that is ready for transition in the development of a regulatory proposal
Education	What we heard: Respondents highlighted the importance of public education and outreach, including workshops and community events, to support a smooth transition. A peer learning network was also recommended to allow users to share experiences and feedback on electric equipment. How we're responding: • Promote and advocate for education and information exchange e.g., demonstration events, workshops, communities of practice
Operations	What we heard: Users noted that electric equipment is generally easier to use and maintain, safer, and more space-efficient, eliminating the need to store gasoline. However, repair complexity and longer downtimes were concerns due to the specialized knowledge required. Proper recycling of old SGPE and batteries was emphasized as a high

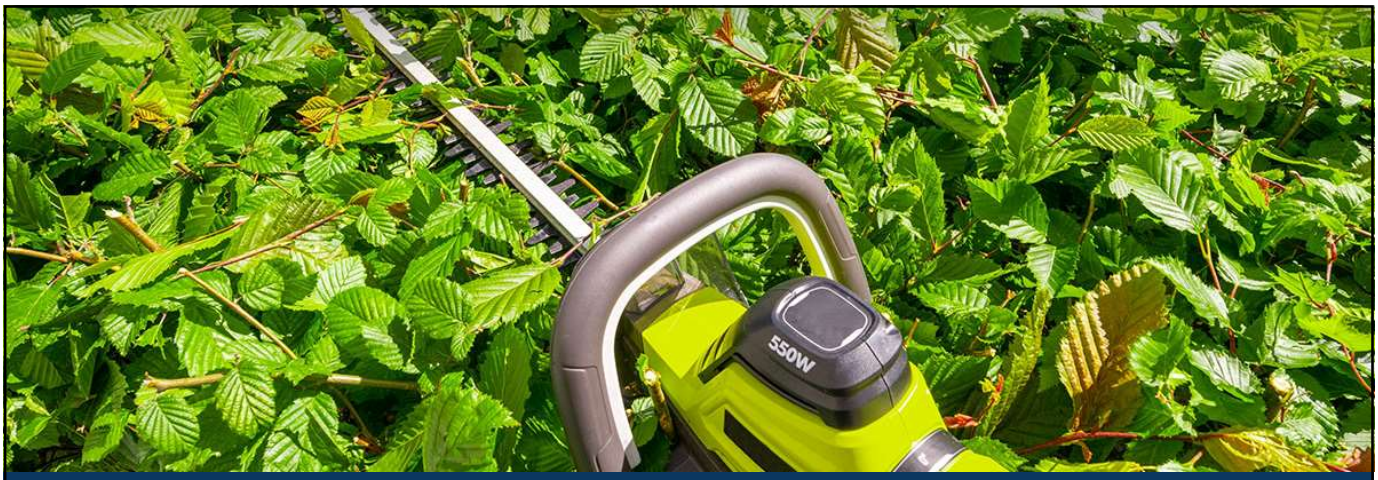
	priority for any form of transition, along with education on safe disposal and minimizing environmental impact. How we're responding: • Promote and establish communities of practice and workshops on topics such as electrical equipment maintenance • Advocate and explore options to establish an incentive program that promotes recycling of equipment and batteries
Infrastructure	What we heard: Professional users cited challenges with grid capacity, on-the-go charging, and the need for on-site charging availability, while personal users generally reported home charging as sufficient. How we're responding: • Support the development of charging solutions for battery-powered equipment
Jurisdictional Coordination	What we heard: Respondents noted the need for clear and fair enforcement for and personal users, not just professional landscapers, and called for coordination across jurisdictions, including alignment with provincial approaches and existing policies like the leaf blower ban in the West End of the City of Vancouver. How we're responding: • Include member jurisdictions in planning for enforcement mechanisms for the development of a regulatory proposal

First Nations Engagement

All First Nations in the region were contacted to provide input on this initiative. Squamish Nation responded to the information to relay their conditional support of this initiative, provided it continues to progress towards the use of electric and non-polluting machinery, and did not request to meet with staff.

How Feedback Will Be Used

Feedback gathered through this engagement process will be integrated with emissions inventory data, best practices research, and insights from a technical equipment market readiness report to inform the development of a regional strategy for accelerating the transition to emission-free equipment. This combined input will help ensure the approach is evidence-based, practical, and reflective of the reality of user needs.



Update on Approach to Reduce Health-Harming Air Contaminants from Small Gas-Powered Equipment

Daphne Mazarura
Senior Policy Analyst

Laura Taylor
Senior Engagement Specialist

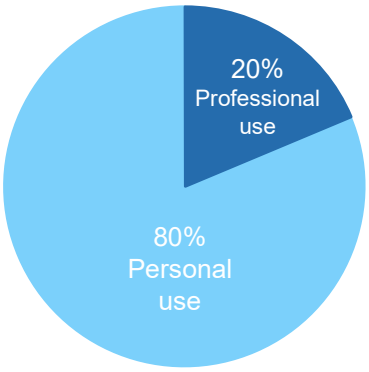
Air Quality and Climate Committee Meeting - July 4, 2025
76726705

metrovancouver

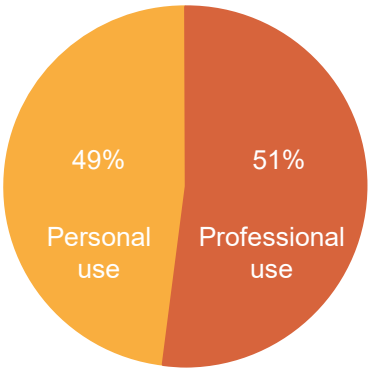
1

SMALL GAS-POWERED EQUIPMENT USE AND EMISSIONS

Estimated 400-600K equipment units in Metro Vancouver generate as much as half the health-harming emissions from light-duty vehicles in region



Equipment Ownership



Health-harming Air Contaminants from Small Gas-Powered Equipment

2

Small Gas-Powered Engines
Engagement Summary

- **8** Industry roundtables
- **4** Meetings with municipal staff
- **2** Industry conference session
- **10** First Nations letters sent
- **5** Multilingual interviews with underrepresented community members
- **Social Media**
  - Reach: **32,790** people
  - Interactions (likes, comments, shares): **235**
  - Link clicks: **299**
- **365** Public omnibus survey responses
- **6** Presentations to municipal environment committees
- **147** Industry-focused survey responses
- **903** Public market research responses

metrovancouver 3

3

FEEDBACK HEARD

- Affordability
- Equipment performance and operations concerns
- Charging limitations
- Need for consistent approach
- Education
- Incentives
- Recycling

metrovancouver 4

4

PROPOSED REGULATORY APPROACH

To phase out small gas-powered equipment over time based on availability of battery-powered alternatives

metrovancouver 5

5

PROPOSED SUPPORTIVE APPROACH

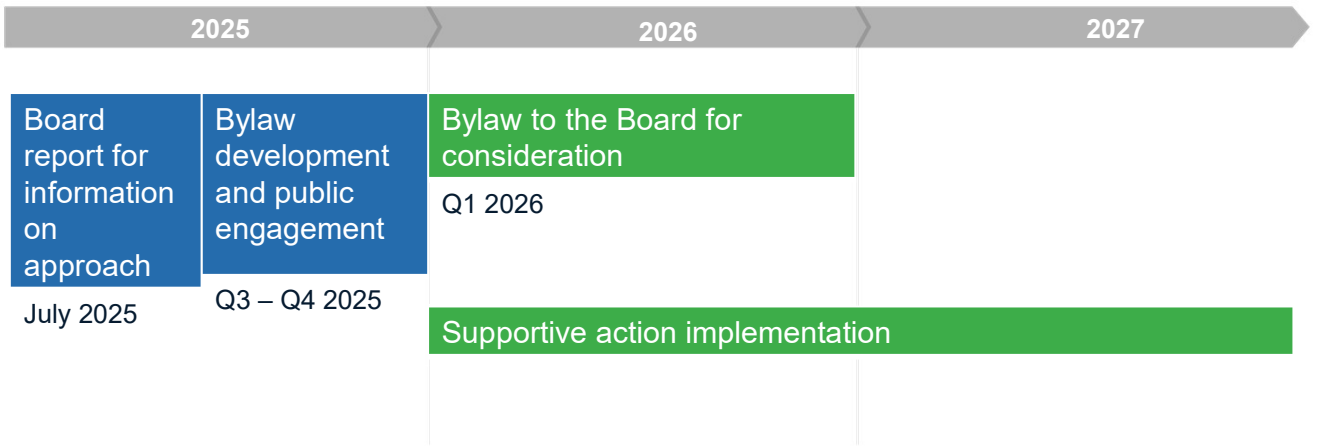
- Could be pursued with or without regulation
- Would be phased into work plans gradually and absorbed by existing budgets
- Focus on charging solutions, education, information exchange, and incentives

metrovancouver 6

6

TIMELINE

Proposed regulation development and supportive actions



metrovancouver 7

7

Questions

metrovancouver

8

8

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

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

Date: June 19, 2025 Meeting Date: July 4, 2025

Subject: **BC Utilities Commission Proceeding on Renewable Natural Gas Definition and Accounting**

RECOMMENDATION

That the MVRD Board direct staff to:

a) participate as an intervener in the BC Utilities Commission proceeding titled "BCUC Review of Renewable Natural Gas Definition and Accounting";
b) analyze and provide input to the proceedings to align with Board-adopted policies and targets including for regional air quality, clean and renewable energy, and GHG reduction, potentially including requests for information, comments, evidence, and replies; and
c) report back to the Air Quality and Climate Committee and the MVRD Board on the outcomes of the proceeding.

EXECUTIVE SUMMARY

Consistent with the MVRD Board's prior direction, staff are seeking the Board's approval to participate as an intervener in a BCUC-initiated proceeding to review accounting of renewable natural gas (RNG), in coordination with member jurisdictions. The proceeding will examine how RNG is defined and how associated greenhouse gas (GHG) emissions reductions are verified for RNG sourced from outside of BC. This issue is directly relevant to local governments in Metro Vancouver, both as policy makers and as RNG producers, and to the integrity of GHG reductions under *CleanBC* and local government policies. Staff would advocate for transparent, verifiable accounting aligned with regional and provincial policies and accepted GHG protocols.

PURPOSE

To seek the MVRD Board's direction for staff to participate in a BCUC-initiated inquiry on RNG definition and accounting, to advocate for transparent and verifiable greenhouse gas accounting practices aligned with regional climate policy goals.

BACKGROUND

On June 5, 2025, the BCUC issued Order G-137-25 launching an inquiry titled "Review of Renewable Natural Gas Definition and Accounting" (Reference 1). The inquiry will examine how renewable natural gas (RNG) is defined by the Commission and how emissions from RNG sourced outside of BC are tracked and verified, in accordance with the Greenhouse Gas Reduction Regulation (GGRR) under the Clean Energy Act.

At the MVRD Board's direction, in 2021 Metro Vancouver staff collaborated with other local governments (City of Vancouver, City of Richmond, District of North Vancouver, City of Victoria and District of Saanich) as interveners in the BCUC proceeding on FortisBC's RNG program, the decision for which was issued in 2024 (Reference 2). Uncertainties related to accounting of environmental attributes of "notional" RNG procured from outside the province was a concern raised in this proceeding. Participating in this latest proceeding would be aligned with Metro Vancouver's Board-approved *Clean Air Plan* and *Climate 2050* Roadmaps and consistent with prior MVRD Board direction.

RELEVANCE TO LOCAL GOVERNMENT CLIMATE AND ENERGY PLANNING

As outlined in Metro Vancouver's *Climate 2050 Energy Roadmap*, RNG can support the region's and the province's energy transition. However, as a limited resource, it should be prioritized for sectors that are difficult to decarbonize with clean electricity, while ensuring verifiable GHG reductions.

Notional RNG is claimed to reduce emissions based on renewable sources elsewhere but is not physically delivered to BC. In 2021, 74% of FortisBC's RNG supply was notional supply from outside of BC, roughly half from other provinces and half from the US (Reference 3). This practice carries risks of "double counting" where another entity may claim the same benefits, negating actual GHG reductions, and presents supply uncertainties with increasing local competition for the resource and its attributes. These concerns were raised in the FortisBC RNG proceeding by the local governments and other interveners, and in a BCUC-commissioned report (Reference 3).

Transparent and robust accounting of RNG environmental attributes is necessary for alignment with provincial and local government climate policies, public confidence, and to ensure fair market access for verifiable RNG produced in the region, including by local governments such as Metro Vancouver's Liquid Waste Services. These issues are also relevant to the ongoing review of *CleanBC*, as described in the Manager's Report on this committee agenda.

Evidence submitted by the local government interveners in a prior BCUC proceeding revealed a significant subsidy that would have been paid by ratepayers to cover the higher cost to deliver notional RNG to all households, leading the BCUC to deny this component of the utility's submission (Reference 4).

Metro Vancouver staff will coordinate with member jurisdictions and provide input that elevates regional interests aligned with CleanBC and local government priorities in climate action, air quality, affordability, housing, and economic development.

PROCESS AND NEXT STEPS

Metro Vancouver staff are in early discussions with member jurisdictions regarding collaboration, although their capacity may be limited. Staff will also seek input through technical staff advisory committees to inform Metro Vancouver's submissions.

Staff plan to register Metro Vancouver as an intervener by the July 8, 2025 deadline, but would only participate in subsequent steps as outlined below pending the MVRD Board's approval. The proceeding is expected to conclude by late November, 2025, with a BCUC decision anticipated in

early 2026. Staff will report back to the Air Quality and Climate Committee and Board. If the MVRD Board directs staff not to participate as an intervener, registration will be withdrawn.

Table 1. Proceeding Timetable

Subject	**Date**
Intervener registration (including PCA cost estimates, if any)	Tuesday, July 8, 2025
Intervener submissions regarding the questions set out in Appendix B	Wednesday, August 27, 2025
BCUC and Intervener Information Requests (IRs) No. 1 on Intervener submissions	Wednesday, October 8, 2025
Responses to BCUC and Intervener IRs No. 1	Monday, October 27, 2025
Letters of comment deadline	Monday, November 10, 2025
Intervener reply submissions (if any)	Monday, November 24, 2025

ALTERNATIVES

1. That the MVRD Board direct staff to:
   a) participate as an intervener in the BC Utilities Commission proceeding titled "BCUC Review of Renewable Natural Gas Definition and Accounting";
   b) analyze and provide input to the proceedings to align with Board-adopted policies and targets including for regional air quality, clean and renewable energy, and GHG reduction, potentially including requests for information, comments, evidence, and replies; and
   c) report back to the Air Quality and Climate Committee and the MVRD Board on the outcomes of the proceeding.

2. That the MVRD Board receive for information the report dated June 19, 2025, titled "BC Utilities Commission Proceeding on Renewable Natural Gas Definition and Accounting".

FINANCIAL IMPLICATIONS

Staff participation in BCUC proceedings is provided for in the approved 2025 Air Quality and Climate Action Policy operating budget. Effective accounting of RNG environmental attributes is needed to ensure the integrity of RNG markets, including fair prices and verifiable benefits, to support local governments' energy policy and capital project decision making.

OTHER IMPLICATIONS

Metro Vancouver legal staff will be consulted in staff's participation in this proceeding.

CONCLUSION

Metro Vancouver staff are seeking the MVRD Board's approval to participate as an intervener in the BCUC's review of RNG definition and accounting, in coordination with member jurisdictions. This participation is consistent with the MVRD Board's prior direction on similar proceedings and relevant to regional policy priorities and provision of energy services.

REFERENCES

1. British Columbia Utilities Commission. (2025). *BCUC Review of Renewable Natural Gas Definition and Accounting*. Government of British Columbia. https://www.bcuc.com/OurWork/ViewProceeding?ApplicationId=1355.
2. British Columbia Utilities Commission. (2024). *FEI BERC Rate Methodology and Review of Revised RNG Program*. https://www.bcuc.com/OurWork/ViewProceeding?applicationid=807.
3. The Brattle Group. (2022, December 5). *Renewable natural gas supply and demand in North America*. [BCUC Staff Submission: FortisBC Energy Inc. – Stage 2 Comprehensive Review and Application for Approval of a Revised Renewable Gas Program – Project No. 1599136]. British Columbia Utilities Commission. https://docs.bcuc.com/documents/proceedings/2022/doc_69054_a2-4-independent-expert-report-brattlegroup.pdf.
4. Metro Vancouver. (2024, April 15). *BC Utilities Commission decisions and local government interests in the energy transition*. [Staff report to MVRD Board meeting. 2024, May 31]. https://metrovancouver.org/boards/GVRD/RD-2024-05-31-AGE.pdf#page=96.

77196108

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Derek Jennejohn, Lead Senior Engineer, and Shelina Sidi, Senior Project Engineer, Air Quality and Climate Action Services

Date: June 5, 2025 Meeting Date: July 4, 2025

Subject: **Air Pollutant Emissions Inventory and Trends in the Lower Fraser Valley**

RECOMMENDATION

That the MVRD Board receive for information the report dated June 5, 2025, titled "Air Pollutant Emissions Inventory and Trends in the Lower Fraser Valley".

EXECUTIVE SUMMARY

Metro Vancouver prepares emissions inventories for both Metro Vancouver and the broader Lower Fraser Valley to provide insights into emissions trends for greenhouse gases and air pollutants that directly affect human health. Reducing air pollutant emissions helps improve residents' health now and into the future - **a Health Canada study reported that today's cleaner air saves the lives of approximately 580 Metro Vancouver residents each year, compared to air quality in 2001.** The emissions inventory shows that from 2000 to 2020:

- emissions of most air pollutants are trending down;
- ozone precursor emissions (nitrogen oxides and volatile organic compounds) and sulphur oxides were significantly reduced;
- regional actions are helping to reduce fine particulate matter emissions; and
- continued efforts are needed to reduce greenhouse gas emissions.

Air quality improvements are due to actions by all levels of government, including regulatory and non-regulatory actions implemented by Metro Vancouver. Continued action is needed to further reduce air pollutants, many of which have no "safe" levels.

PURPOSE

To provide the Air Quality and Climate Committee and MVRD Board with a summary of air pollutant emissions in the Metro Vancouver region and the broader Lower Fraser Valley, and an examination of emissions trends, highlighting potential implications for plans, policies, and programs related to air quality and climate action.

BACKGROUND

Metro Vancouver's *Clean Air Plan* commits to tracking and reporting on air pollutant emissions, to support accountability and continuous improvement in progress toward regional air quality and climate targets, given Metro Vancouver's responsibility for air quality management and regulation in the region. Metro Vancouver tracks emissions of air pollutants through preparation of emissions inventories for the region, as well as for the broader Lower Fraser Valley "airshed", which

geographically includes both the Metro Vancouver region and the southwestern portion of the Fraser Valley Regional District (FVRD). The various inventories include:

- An annual greenhouse gas (GHG) emissions inventory for Metro Vancouver and its member jurisdictions, which is included as part of the annual *Climate 2050* Progress Report; and
- The Lower Fraser Valley (LFV) airshed emissions inventory, which is prepared every five years, and includes GHGs and air pollutants that directly harm health emitted in both Metro Vancouver and the FVRD.

Emissions inventories serve many purposes. Alongside data from Metro Vancouver's ambient air quality monitoring network, the inventory provides ongoing information to assess the performance of programs and actions contained within the *Clean Air Plan* and the *Board Strategic Plan*. The inventory can help identify areas where additional management actions are needed, and support development of new regulatory programs. Finally, the inventory is an essential tool for developing new climate action and air quality management plans for the region.

HEALTH BENEFITS OF REDUCING EMISSIONS

Residents in Metro Vancouver are living longer, healthier lives thanks to less polluted air in the region. Health Canada recently analyzed the health benefits from reduced fine particulate matter ($PM_{2.5}$) levels across Canada (Reference 1) and provided Metro Vancouver with estimates for the region's air. The analysis indicates that cleaner air is saving the lives of approximately 580 Metro Vancouver residents each year, compared to a scenario where residents were still breathing higher levels of $PM_{2.5}$ equivalent to those in 2001.

These air quality improvements particularly benefit at-risk populations such as children and people over 60 years of age. For example, children in Metro Vancouver are experiencing fewer episodes of acute bronchitis every year because of improved $PM_{2.5}$ levels. Studies like this show that by continuing to reduce emissions of air pollutants, residents, businesses, and governments can improve lives now and into the future. These improvements benefit the region, reducing the burden on the healthcare system so more people can have access to health services, and supporting our economy by reducing sick days. But the work is not done. By continuing to reduce air pollutant emissions, we can prevent further deaths across Metro Vancouver, and make life healthier for everyone now and into the future.

AIR POLLUTANT EMISSIONS SOURCES AND TRENDS FROM 2000 TO 2020

This report focusses on the Lower Fraser Valley emissions inventory and describes trends in GHGs and air pollutants that directly harm health from all sources of emissions for 2000 to 2020, and outlines the benefits associated with emissions reductions that occurred during that period. The emissions inventory includes estimates for a broad range of emissions sources, summarized at regional and municipal levels, including:

- Industry;
- Agriculture;
- Commercial, institutional, light industrial, and residential buildings;
- Waste;

- Transportation, including vehicles and trucks, railways, aircraft, and marine vessels;
- Non-road engines and equipment, such as construction, manufacturing, and commercial equipment, including small gas-powered engines, which are the subject of a separate report to the Committee; and
- A range of other sources such as chemical products use, fuel distribution, vegetative burning, fugitive dust, and natural sources.

Emissions of Most Air Pollutants Are Trending Down

The inventory indicates that emissions of most of the reported air pollutants decreased steadily from 2000 to 2020. While emissions in 2020 were lower in many sectors due to the COVID-19 pandemic, decreases in emissions were expected in any case, although perhaps not to the extent as was seen. In many cases, there are particular emissions sources that account for large portions of these trends, as shown in Attachment 1.

Ozone Precursor Emissions Are Dropping

Emissions of nitrogen oxides (NO_x) and volatile organic compounds (VOC), both of which are ozone precursor pollutants, showed a strong decreasing trend from 2000 to 2020 in the Lower Fraser Valley, dropping 55% and 37%, respectively, due to emissions reductions in several sectors. NO_x (Figure 1) and VOC (Figure 2) emissions from on-road vehicles and non-road engines were reduced through improved standards for engines and fuels, the former AirCare vehicle inspection and maintenance program through the 2000-2014 period, as well as smaller reductions in industrial emissions. Changes in the on-road vehicle fleet (e.g., shifting from gasoline and diesel engines to electric vehicles, particularly in the light-duty fleet) have displaced fossil fuel consumption, and resulted in reduced emissions in more recent years. VOC emissions were also reduced by improved fuel and product formulation, and enhanced regulatory control of sources of evaporative VOC emissions. Analysis of monitoring data for NO_x and VOC correspondingly shows notable decreases in both

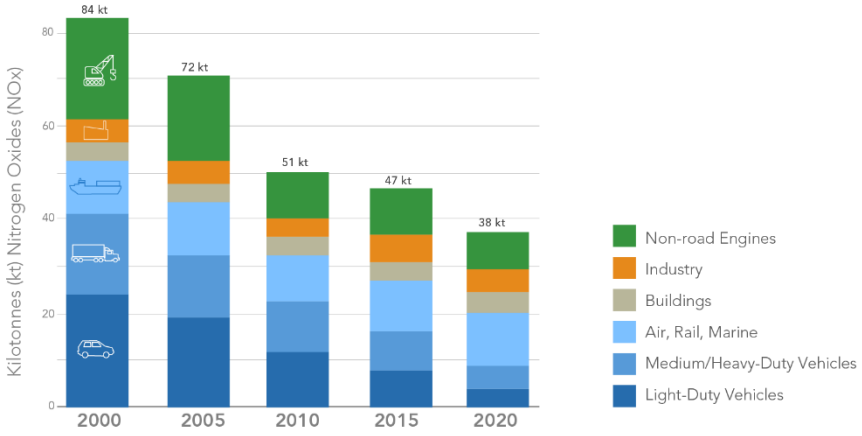


Figure 1: NO_x Emissions Trends in the Lower Fraser Valley

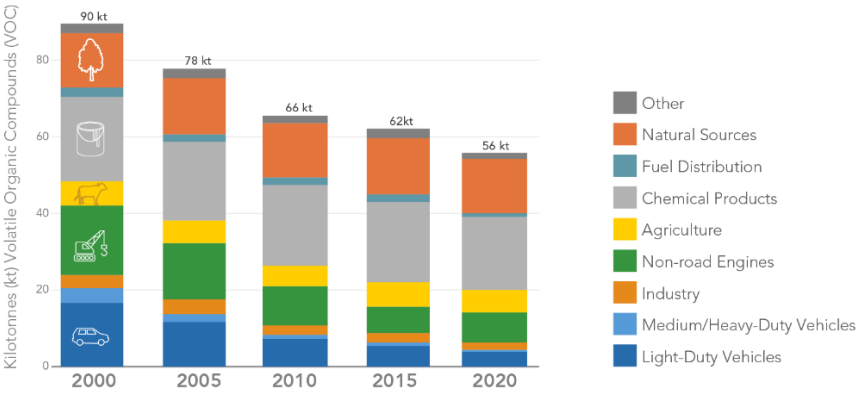


Figure 2: VOC Emissions Trends in the Lower Fraser Valley

pollutants over the inventory time period. Despite these decreases, ozone concentrations have remained mostly unchanged in the region or are trending upward in some cases, possibly due in part to more prolonged heat events and rising background ozone concentrations. Staff are undertaking a review of the *Regional Ground-Level Ozone Strategy*, which will consider the variables behind these trends.

Significant Reduction in Emissions of Sulphur Oxides

The decrease in emissions of sulphur oxides (SO_x) emissions (Figure 3) is even more significant, dropping nearly 90% from 2000 to 2020, due to reduced emissions from marine vessels, on-road vehicles, non-road equipment, and industrial sources. During the 2000 to 2010 period, desulphurization of gasoline, diesel, and non-road fuels reduced SO_x emissions, while industrial emissions control technologies achieved further reductions. In 2010, marine vessels were the predominant source of SO_x emissions, responsible for approximately 80%. Since then, a substantial reduction in SO_x emissions from marine vessels has been observed, with a decrease of close to 95% since 2010. This reduction is largely attributable to the implementation of the North American Emission Control Area (ECA) in 2012, which included requirements for cleaner marine fuels. Analysis of ambient air quality monitoring data indicates that sulphur dioxide concentrations in the region have exhibited similar reductions. Marine vessels now contribute about 20% of regional SO_x emissions, while industrial sources contribute nearly half.

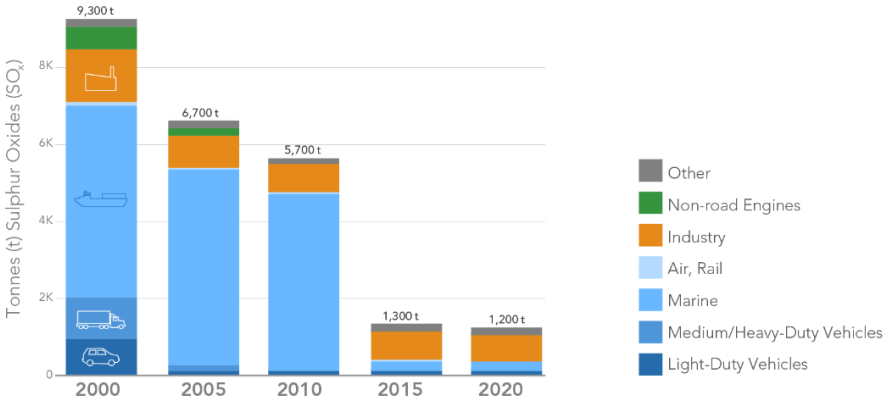


Figure 3: SO_x Emissions Trends in the Lower Fraser Valley

Regional Actions Helping to Reduce Fine Particulate Matter Emissions

Fine particulate matter ($PM_{2.5}$) emissions generally decreased from 2000 to 2020 (Figure 4), although emissions have fluctuated depending on particular sources of emissions. While $PM_{2.5}$ emissions in the Metro Vancouver region decreased in 2015, there was a significant increase in $PM_{2.5}$ emissions in the FVRD, related to in-region wildfires, before dropping in 2020 to levels similar to earlier years. The emissions inventory does not include estimates of wildfire emissions that occurred outside the Lower Fraser Valley, although those events have had significant impacts on ambient air quality.

Aside from the variability of wildfire emissions, $PM_{2.5}$ reductions over the period were driven by industrial emissions controls, improved engine and fuel standards for transportation sources, cleaner non-road engines, and reduced residential indoor wood burning. In 2020, residential wood burning, non-road engines, industrial facilities, and medium and heavy-duty vehicles continued to be significant sources of $PM_{2.5}$. Non-road engines are also the largest source of diesel particulate matter emissions, which is of particular concern from a health perspective. Metro Vancouver actions in place or under development to reduce emissions in several of these sectors include:

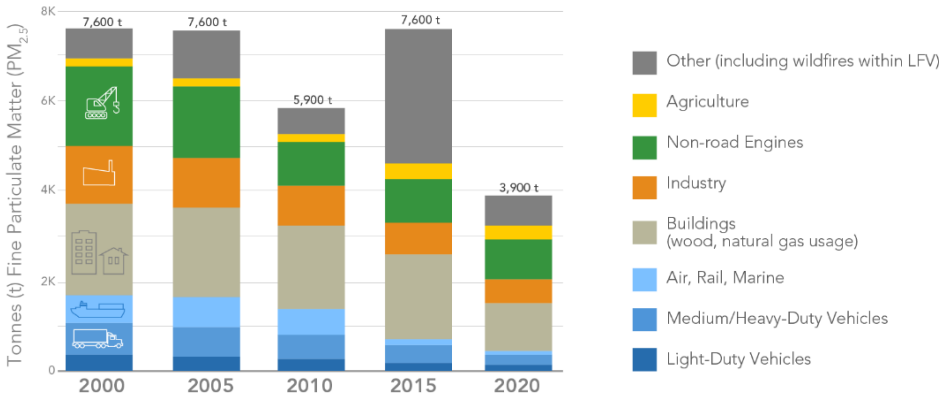


Figure 4: $PM_{2.5}$ Emissions Trends in the Lower Fraser Valley

- A bylaw for residential indoor wood burning, as well as a rebate program for removal or exchange of older, high-emitting wood-burning devices, both of which aim to reduce emissions of $PM_{2.5}$ emissions;
- The Non-Road Diesel Engine Emission Regulation, which reduces emissions from diesel engines and equipment, such as those used in the industrial and construction sectors; and
- Ongoing review of industrial permits to ensure reductions in $PM_{2.5}$ emissions.

Continued Efforts Needed to Reduce Greenhouse Gas Emissions

While the emissions inventory shows that GHG emissions in the broader Lower Fraser Valley airshed decreased from 2000 to 2020, GHGs were lower in 2020 largely as a result of the COVID-19 pandemic. GHG emissions in the airshed decreased from 21.8 Mt CO_2e in 2000 to 18.8 Mt in 2010, before slightly increasing again in 2015 and then dropping in 2020 (Figure 5). For the Metro Vancouver region, the *Climate 2050* Progress Report provides more fulsome reporting of recent regional GHG trends, and shows an increase in regional GHG emissions from 2000 through to 2022. Reference 2 includes further details on GHG emissions data. Staff will provide an update on 2023 regional GHG emissions later this year.

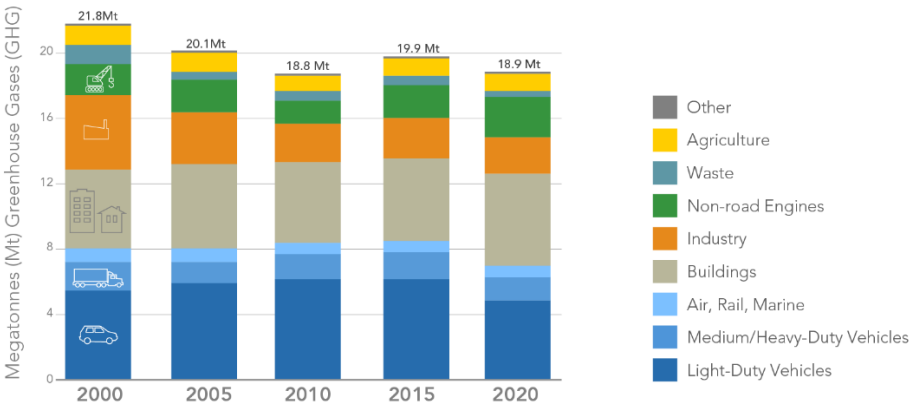


Figure 5: GHG Emission Trends in the Lower Fraser Valley

Despite recent increases in GHG emissions, several sectors are showing promising

trends for reduced emissions. The shift in the light-duty on-road vehicle fleet away from fossil fueled vehicles is resulting in significant GHG reductions, even with increased travel in the region. Similarly, clean energy technology for residential and other buildings is reducing reliance on fossil natural gas. GHG emissions for that sector are still rising, although future reductions are expected. This month's Committee agenda includes two reports that provide further description of the trends in emissions from the transportation and buildings sectors, and a future report will describe trends in industrial emissions.

UPCOMING EMISSIONS REPORTING

Staff will continue to develop emissions inventories for the Metro Vancouver region and the Lower Fraser Valley, including the annual GHG emissions inventory, and the more detailed airshed inventory described in this report. The 2026 workplan will include initial work to update the Lower Fraser Valley airshed inventory to include emissions data for 2025. Additionally, as noted earlier, the Committee will receive an updated *Climate 2050* Progress Report later this year, with estimates of regional GHG emissions for 2023.

Metro Vancouver posts emissions data on its website, including the regional annual GHG emissions inventory (Reference 2). Once prepared, the 2000-2020 Lower Fraser Valley emissions data from this report will be available at a regional and municipal level and posted online. Staff are also developing an interactive public platform to make emissions data more accessible.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The resources required for the development of both the Lower Fraser Valley airshed emissions inventory and the annual GHG inventory are included in approved program budgets, including both staff and consulting resources.

CONCLUSION

Emissions inventories for the region provide insights into trends in emissions of greenhouse gases and air pollutants that directly affect human health. Reducing emissions benefits the region, as improved air quality reduces health effects and the associated burdens on the healthcare system.

The Lower Fraser Valley airshed emissions inventory for 2000 to 2020 shows significant reductions in air pollutants such as nitrogen oxides, sulphur oxides, fine particulate matter, and volatile organic compounds. These emissions reductions lead to air quality improvements that benefit the region's residents. Continued action is needed to reduce climate-heating greenhouse gases, as well as further reduce air pollutants to achieve the region's stringent air quality objectives, as many air pollutants have no "safe" levels.

ATTACHMENTS

1. "Lower Fraser Valley Air Pollutant Emissions Trends for 2000-2020", dated June 5, 2025.
2. Presentation re: "Air Pollutant Emissions Inventory and Trends in the Lower Fraser Valley", dated July 4, 2025.

REFERENCES

1. Fuller-Thomson, E. G., Pappin, A. J., Rouleau, M., Xi, G., van Donkelaar, A., Martin, R. V., & Burnett, R. T. (2024). Mortality Attributable to Ambient Fine Particulate Matter Exposure in a Changing Canadian Population, 2001 to 2021. *ACS ES&T Air*, *1*(9), 1177–1189. https://doi.org/10.1021/acsestair.4c00130.
2. Metro Vancouver. (2025). *Emissions Inventories and Forecasts*. https://metrovancouver.org/services/air-quality-climate-action/emission-inventories-and-forecasts.

71794842

Lower Fraser Valley Air Pollutant Emissions Trends for 2000-2020

Table 1: Lower Fraser Valley (LFV) Air Pollutant Emissions Trends and Main Contributing Sectors

Air Pollutant	LFV Emissions					2000-2020 Change in Emissions	Main Contributing Sector to Trend
	2000	2005	2010	2015	2020		
Nitrogen oxides, NO_x (kt)	84	72	51	47	38	-55%	Transportation (vehicles) and non-road engines
Volatile organic compounds, VOC (kt)	90	78	66	62	56	-37%	Transportation (vehicles) and non-road engines
Sulphur oxides, SO_x (kt)	9.3	6.7	5.7	1.3	1.2	-87%	Transportation (marine vessels, vehicles), non-road engines, industry
Fine particulate matter, $PM_{2.5}$ (kt)	7.6	7.6	5.9	7.6	3.9	-49%	Industry, non-road engines, buildings (residential wood burning)
Ammonia, NH_3 (kt)	12	12	11	11	11	-6%	No significant trend
Carbon monoxide, CO (kt)	500	350	250	220	190	-61%	Transportation (vehicles) and non-road engines
Greenhouse gases (Mt)	22	20	19	20	19	-13%	Light-duty vehicles, industry, waste

Table 2: Lower Fraser Valley (LFV) Nitrogen Oxides (NO_x) Emissions Trends by Source

Air Pollutant	LFV Emissions (tonnes)					2000-2020 Change in Emissions
	2000	2005	2010	2015	2020	
NO_x	**84,000**	**72,000**	**51,000**	**47,000**	**38,000**	**-55%**
Light-Duty Vehicles	24,000	19,000	12,000	8,000	4,000	-83%
Medium/Heavy-Duty Vehicles	17,000	13,000	11,000	8,000	5,000	-71%
Air, Rail, Marine	11,000	11,000	10,000	11,000	11,000	0%
Buildings	4,000	4,000	4,000	4,000	4,000	0%
Industry	5,000	5,000	4,000	6,000	5,000	0%
Non-road Engines	21,000	19,000	10,000	10,000	8,000	-62%
Waste	1,000	1,000	1,000	-	-	-100%

Note: Similar tables for all air pollutants will be posted on Metro Vancouver's website. See Reference 2.

Air Pollutant Emissions Inventory and Trends in the Lower Fraser Valley

Shelina Sidi
Senior Project Engineer

Derek Jennejohn
Lead Senior Engineer

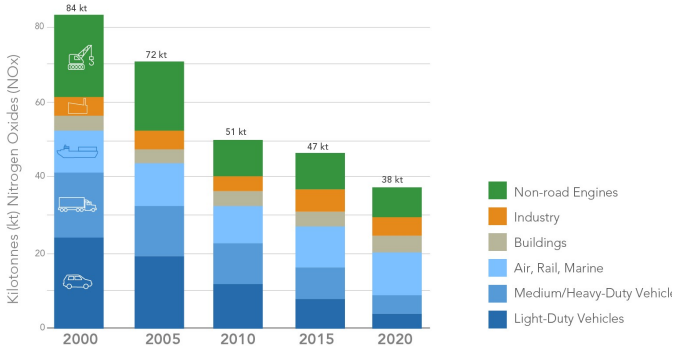
Air Quality and Climate Committee: July 4, 2025
76872203

metrovancouver

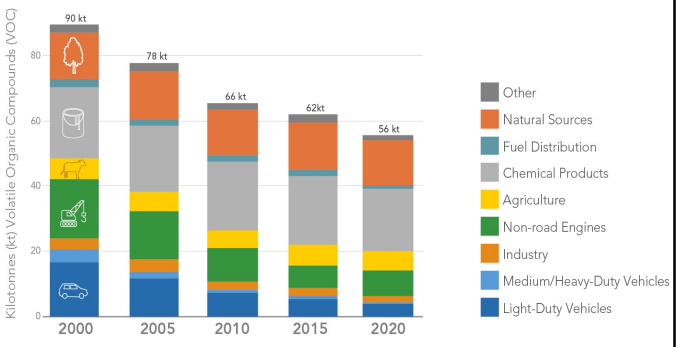
1

OZONE PRECURSOR EMISSIONS ARE DROPPING

NO_x EMISSIONS TRENDS IN THE LOWER FRASER VALLEY

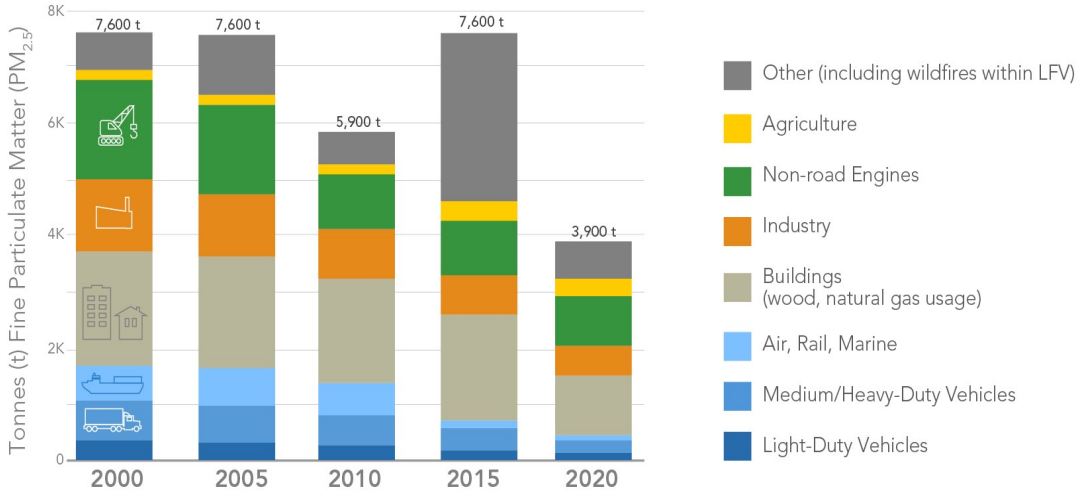


VOC EMISSIONS TRENDS IN THE LOWER FRASER VALLEY



2

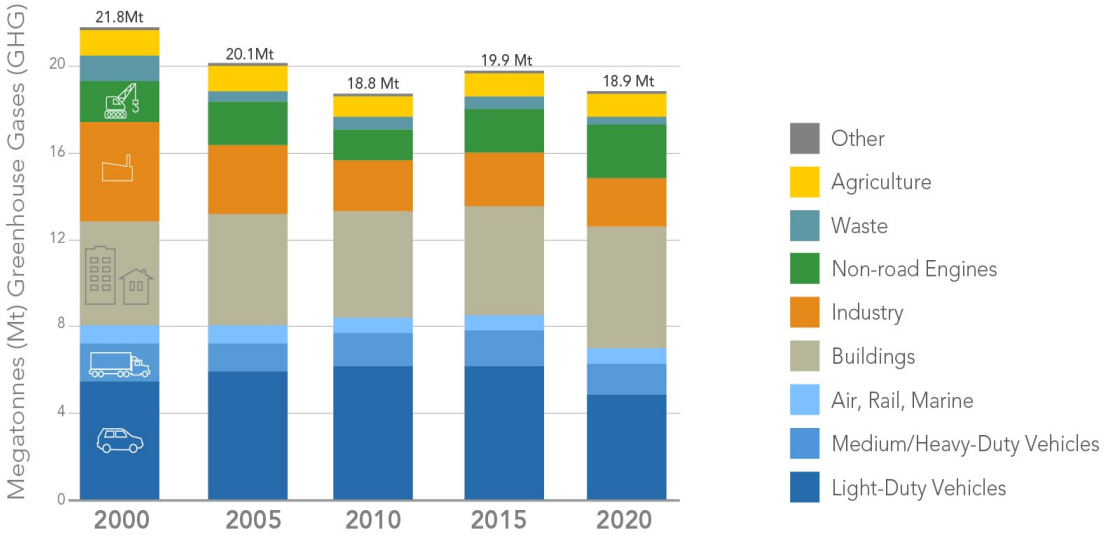
$PM_{2.5}$ EMISSIONS ARE DECREASING



3

CONTINUED EFFORTS NEEDED TO REDUCE GHGs

GHG EMISSIONS TRENDS IN THE LOWER FRASER VALLEY



4


TOGETHER
WE MAKE OUR REGION
STRONG
QUESTIONS?
metrovancouver
5

5

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Morgan Braglewicz, Air Quality Planner, and Margaryta Pustova, Senior Policy and Planning Analyst, Air Quality and Climate Action Services

Date: June 16, 2025 Meeting Date: July 4, 2025

Subject: **Trends in Emissions from Transportation (Personal Mobility)**

RECOMMENDATION

That the MVRD Board:

a) receive for information the report dated June 16, 2025, titled "Trends in Emissions from Transportation (Personal Mobility)"; and

b) direct staff to forward a copy of the report dated June 16, 2025, titled "Trends in Emissions from Transportation (Personal Mobility)" to member jurisdiction staff, with an offer of a presentation to Council upon request.

EXECUTIVE SUMMARY

In response to requests from Air Quality and Climate Committee members for more accessible and concise information about air quality and climate change, the attachment to this report summarizes current trends in the transportation (personal mobility) sector in the Metro Vancouver region to support discussions regarding regional policies and initiatives. Personal mobility remains the largest source of greenhouse gas (GHG) emissions and a significant source of other air pollutants that directly harm health. Between 2000 and 2019, regional GHG emissions from cars, SUVs, and small trucks and vans rose steadily, although per capita emissions decreased. Emissions decreased with COVID and then rebounded, though projections indicate a decrease in the years ahead. Specific trends include a shift towards more walking and cycling, more remote working, less travel in vehicles, and steadily increasing electric vehicle (EV) sales. Additionally, economic activity and jobs from the clean transportation industry are growing in BC and the Metro Vancouver region.

PURPOSE

To provide the Air Quality and Climate Committee and MVRD Board with information about trends in the personal mobility sector, including about emissions, technology, policy and practice, to inform discussion and decision making.

BACKGROUND

This report is provided to inform discussions regarding regional policies and initiatives, and/or advocacy for potential regulations or policy by other orders of government and agencies to reduce this sector's emissions. Policies and initiatives to reduce these emissions is critical to protect people and the environment, as laid out in the Board-approved *Clean Air Plan* and *Climate 2050 Transportation Roadmap*.

REGIONAL EMISSIONS AND MOBILITY TRENDS

Greenhouse gas (GHG) emissions from cars, SUVs, and small trucks and vans in the region rose steadily from 2000 to 2019, even as per capita emissions decreased over the same period (Figure 1). Emissions of air pollutants that directly harm health have been steadily decreasing since 2000 due to federal vehicle emissions standards (Attachment 1).

Between 2010 and 2019, GHG emissions increased by 3%, while per capita emissions decreased by 11%. In 2020, the COVID-19 pandemic dramatically affected day-to-day life in the region, including residents' travel. The result was a sharp drop in GHG emissions and other air pollutants, followed by a near rebound in GHGs by 2022.

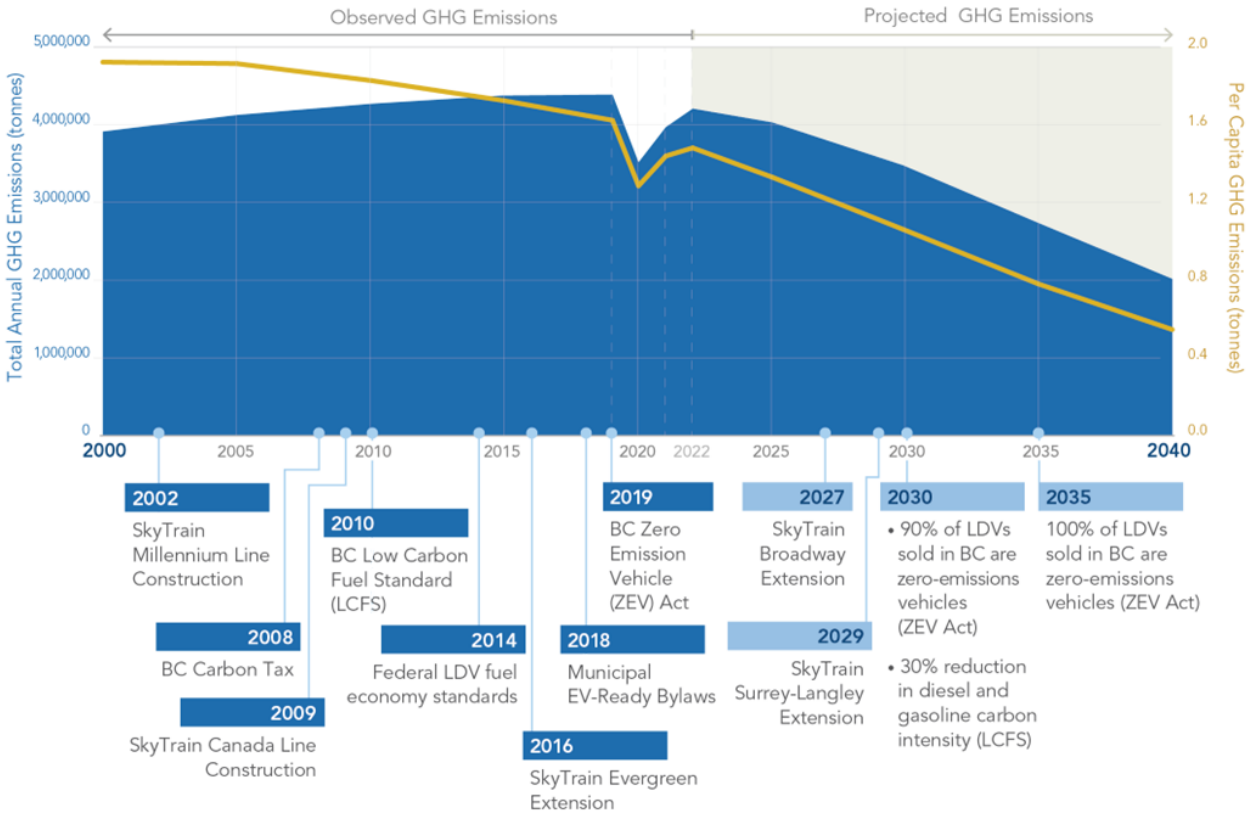


Figure 1: Timeline of total and per capita GHG emissions from personal vehicles in the Metro Vancouver region, showing policies affecting these emissions, from 2000 to 2022, and projected to 2040. (Source: Metro Vancouver 2022 Emissions Inventory).

More specific trends in personal mobility in the region across various modes are also described in Attachment 1. This attachment brings together information from leading data sources and new research to provide an up-to-date summary of trends in the Metro Vancouver region, benefits to residents, and comparisons to other leading jurisdictions worldwide. The trends include:

- Travel patterns continue to be shaped by pandemic impacts, in the form of a reduction in driving, increase in remote work, and changing transit ridership;
- Walking and cycling have increased, along with the use of e-bikes, e-scooters, and shared mobility services such as bike share programs;
- More car buyers in the Metro Vancouver region are choosing electric, with EVs representing 27% of all new vehicles sold in 2024; and
- Clean transportation industries such as vehicles and their components, batteries and hydrogen fuel cells, charging stations, and other technologies are growing in BC, contributing to GDP and job growth.

Health Benefits, Reduced Costs, and More Options

These trends in personal mobility have an impact on the day-to-day health, costs, and social environment for the Metro Vancouver region's three million residents. While transportation remains the largest source of many air pollutants, shifts toward cleaner mobility such as walking, cycling, transit, and EVs are reducing these emissions and improving residents' health. These modes of travel can reduce households' transportation costs and shield residents from fluctuating gasoline costs. The transformation of transportation in the region also supports economic growth in new clean transportation industries, increased education and job opportunities, and reduced congestion and vehicle crashes.

Progressive Policies Are Driving Change

If current policies and planned infrastructure investments are sustained in the coming decades, regional emissions of GHGs and other air pollutants from personal transportation should continue to decrease. This outlook reflects years of intentional policy making and planning at all levels of government that have led to some of the highest transit ridership, active transportation mode share, and EV adoption in North America. Key policies driving this shift are the BC *Zero-Emission Vehicles Act*, which ensures a minimum level of EV supply and sales in BC, the BC *Low Carbon Fuel Standard,* and critical transit infrastructure projects such as the SkyTrain extensions currently under construction. Local government policies such as planning for walkable communities near transit and requiring access to EV charging in new residential buildings are also fundamental pillars. Continuation and strengthening of these municipal, regional and provincial policies is critical to further expanding these transportation options to more residents of the region.

Uncertainty in the Economy
Tariff, trade, and climate policy are in a period of significant flux both domestically and internationally, creating uncertainty in the transportation sector. The impacts remain unclear, but overall vehicle sales volumes are likely to be affected if tariffs continue. While policy uncertainties may slow the trend toward an electric and lower-emissions transportation system by 2050, they are not expected to reverse the current course, particularly if existing policies such as the BC *Zero-Emissions Vehicles Act* remain in place. A significant opportunity to advocate for strengthened clean transportation policy is also underway through the review of *CleanBC*.

ALTERNATIVES
1. That the MVRD Board:
   a) receive for information the report dated June 16, 2025, titled "Trends in Emissions from Transportation (Personal Mobility)"; and
   b) direct staff to forward a copy of the report dated June 16, 2025, titled "Trends in Emissions from Transportation (Personal Mobility)" to member jurisdiction staff, with an offer of a presentation to Council upon request.
2. That the MVRD Board receive for information the report dated June 16, 2025, titled "Trends in Emissions from Transportation (Personal Mobility)".

FINANCIAL IMPLICATIONS
Shifting more trips to walking, rolling, cycling, and transit instead of driving can support household affordability. The clean transportation sector also contributes jobs and economic growth in the region. Stronger provincial transportation policy and funding can make more affordable low-emissions transportation available to more residents in the region.

CONCLUSION
Trends in travel patterns, cycling and walking, EV uptake, and growth in the clean transportation industry suggest opportunities for improved health, economic and energy security, and affordability in the Metro Vancouver region. Attachment 1 provides a summary of current trends in the personal transportation sector, incorporating recent data updates and comparisons to leading jurisdictions. This information is provided to support member jurisdictions' planning, decision-making and advocacy.

ATTACHMENTS
1. "Backgrounder on Transportation (Personal Mobility) Emissions in the Metro Vancouver Region", dated June 16, 2025.
2. Presentation re: "Trends in Emissions from Transportation (Personal Mobility)", dated July 4, 2025.

74671001

metrovancouver

Backgrounder on Transportation (Personal Mobility) Emissions Trends in the Metro Vancouver Region

New data from Metro Vancouver's Emissions Inventory shows that greenhouse gas (GHG) emissions from personal light duty vehicles rose steadily from 2000 to 2019, holding personal transportation as the largest source of GHG emissions and a significant source of air pollutants that directly harm human health. Amidst this increase, some trends signal opportunities to accelerate this sector's projected emissions reductions.

A shift towards more walking, cycling, and remote work, and less travel in vehicles, is underway.

Electric vehicle sales have steadily increased, making the Metro Vancouver region a North American leader in uptake.

While ongoing trade, tariff, and policy uncertainty may impact current trends, there are opportunities for emissions reductions and economic growth from investing in clean transportation.

This attachment is intended to provide elected officials with insights on emissions-related trends in the personal transportation sector to inform planning and decision-making.

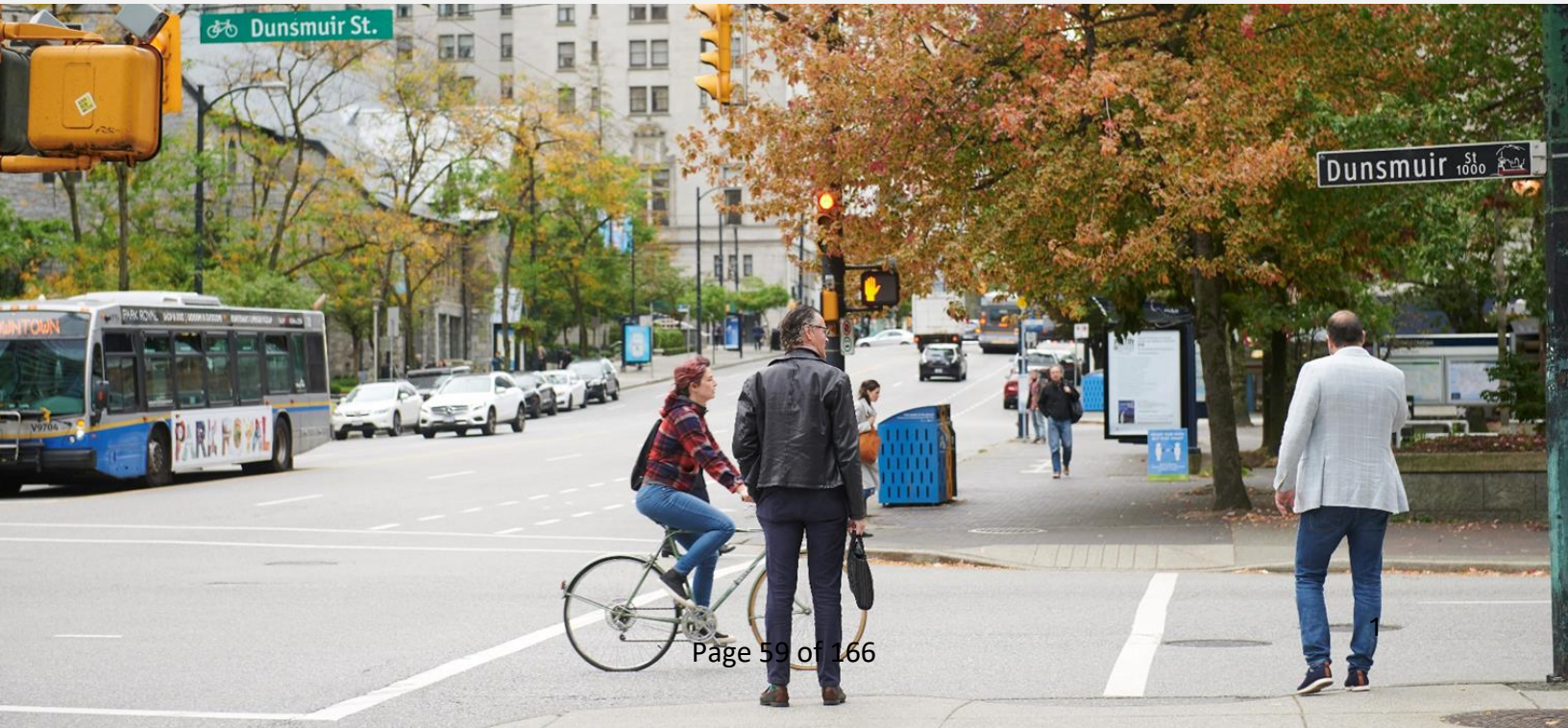
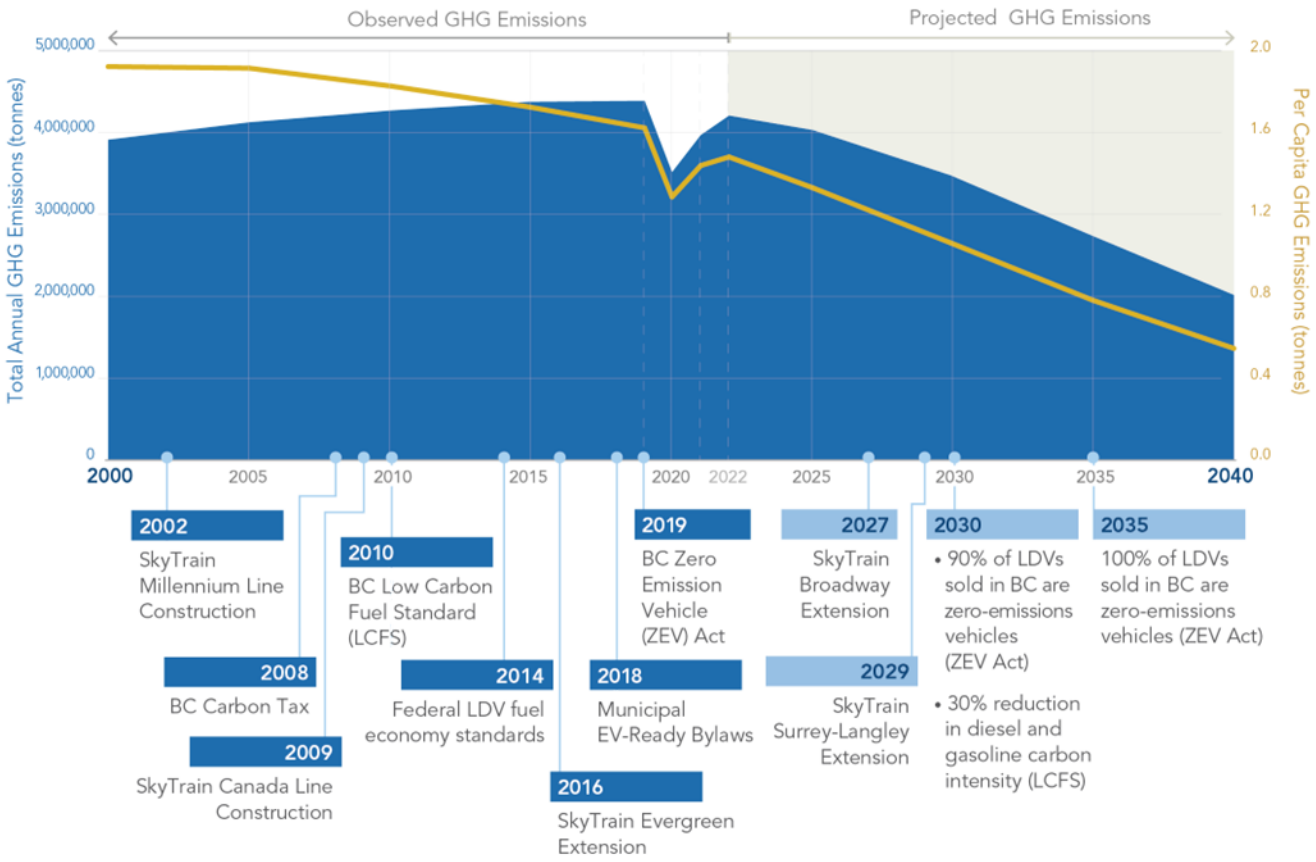


Figure 1 | Timeline of total and per-capita GHG emissions from personal vehicles in the Metro Vancouver region, showing policies affecting these emissions, from 2000 to 2022, and projected to 2040

Source: Metro Vancouver 2022 Emissions Inventory[1]



PERSONAL VEHICLE EMISSIONS TRENDS

- GHG emissions **increased by 3%** between 2010 and 2019.
- From 2010 to 2019, **per capita emissions decreased by 11%**.
- Both overall and per capita **emissions dropped sharply in 2020** due to COVID-19, **but largely rebounded by 2022.**
- **Health harming air pollutants have been decreasing** for several decades.

OUTLOOK

- GHG and health-harming air pollutant emissions are expected **to continue to decrease**.
- Economic and policy uncertainty may slow progress but are **unlikely to reverse current trends** toward lower emissions.

AIR QUALITY AND HEALTH

Personal vehicles release air pollutants like fine particulate matter ($PM_{2.5}$), as well as nitrogen oxides (NO_x) and volatile organic compounds (VOCs) that lead to ground-level ozone (smog).

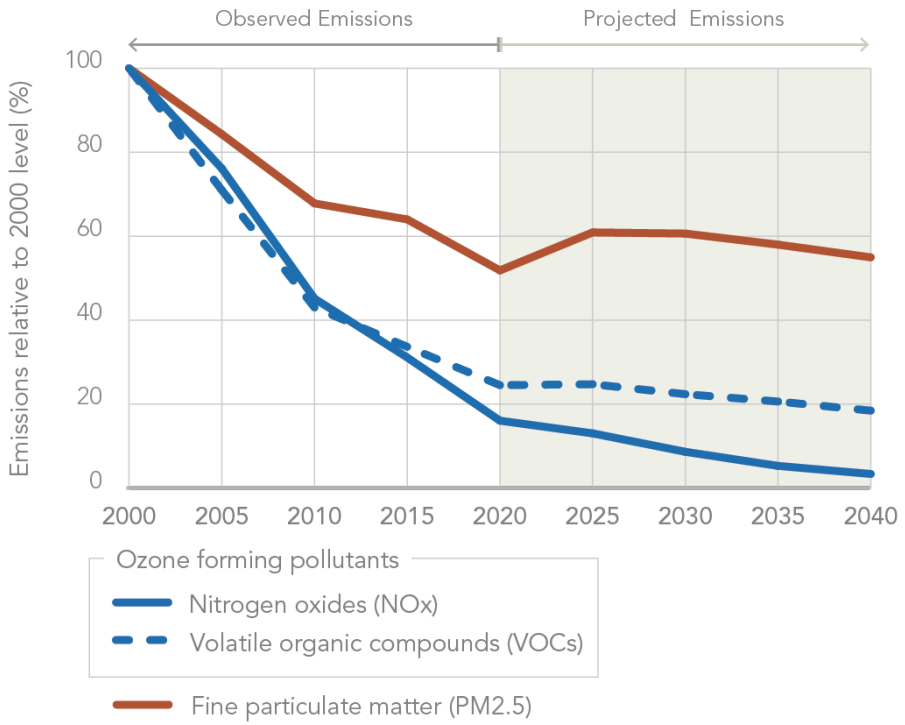
These pollutants can damage the heart and lungs, especially in children, older adults, and people with existing health conditions. Even the smallest amounts of these pollutants can negatively impact health.

Over the next 15 years, continued uptake of EVs and increased use of transit, cycling, and walking is expected to lead to a continued decrease in air pollution, including GHG emissions.

Recent economic and policy shifts introduce uncertainty and may slow this trend but are not expected to reverse the current course toward an electric and lower-emissions transportation system by 2050.

Figure 2 | Air pollutant emissions from personal transportation (light duty vehicles) in the Metro Vancouver region that directly harm human health have decreased between 2000 and 2022 – a trend projected to continue to 2040.

Source: Metro Vancouver 2022 Emissions Inventory[1]



Shifting Travel Patterns Are Leading to Less Driving

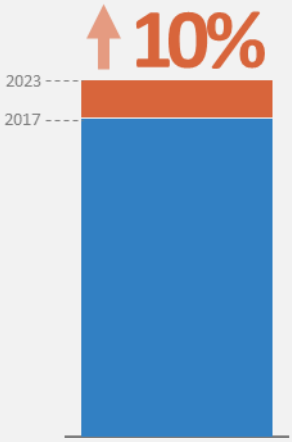
- Between 2017 and 2023, average daily distance driven by vehicles in the region **decreased by 5%**, and per capita vehicle travel **decreased by 17%**[2].
- In 2023, on average **people took shorter trips** by car (as a driver and passenger), by foot, and by bike than in 2017[2].
- Following a sharp drop in 2020 during COVID-19, transit ridership has nearly recovered. However, **the share of trips taken by transit across the region fell slightly** from 11% in 2017 to 10% in 2023[2].
- Changes in transit ridership **vary widely across the region**, with some areas experiencing significant growth in transit trips and others decreasing (Figure 4)[2].
- Between 2017 and 2023, **the share of employees working from home grew from 11% to 24%**, driven by the shift to remote work during the pandemic[2].

Benefits of Reduced Driving

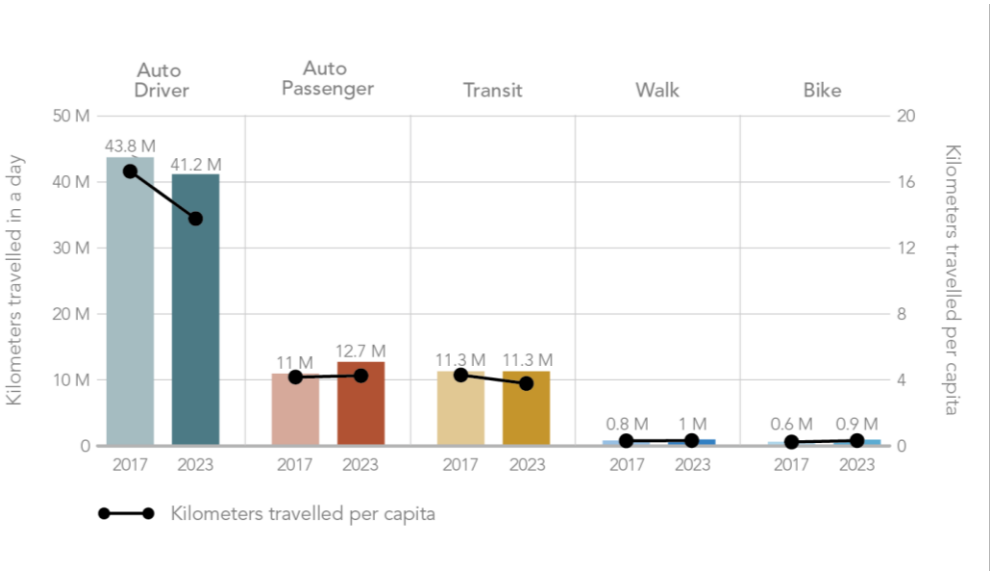
- Using cheaper transportation modes like transit, walking, rolling, and cycling **can reduce households' transportation costs**[3]**.**
- Reducing distances travelled in vehicles **lowers air pollution**, providing health benefits across the region – particularly for people living with conditions such as asthma and heart disease[4]**.**
- Less driving can **reduce congestion and car crashes**[5].

Figure 3 | The total number of trips taken across all modes increased by 10% from 2017 to 2023, but shorter trips means that the average daily kilometers travelled have decreased. Despite remaining the most-used mode, travel by personal vehicle declined in both total and per-capita terms from 2017 to 2023.

Source: TransLink 2023 Trip Diary[2]



Average daily number of trips **increased** from 2017 to 2023



WHAT ARE THE RISKS TO PROGRESS?

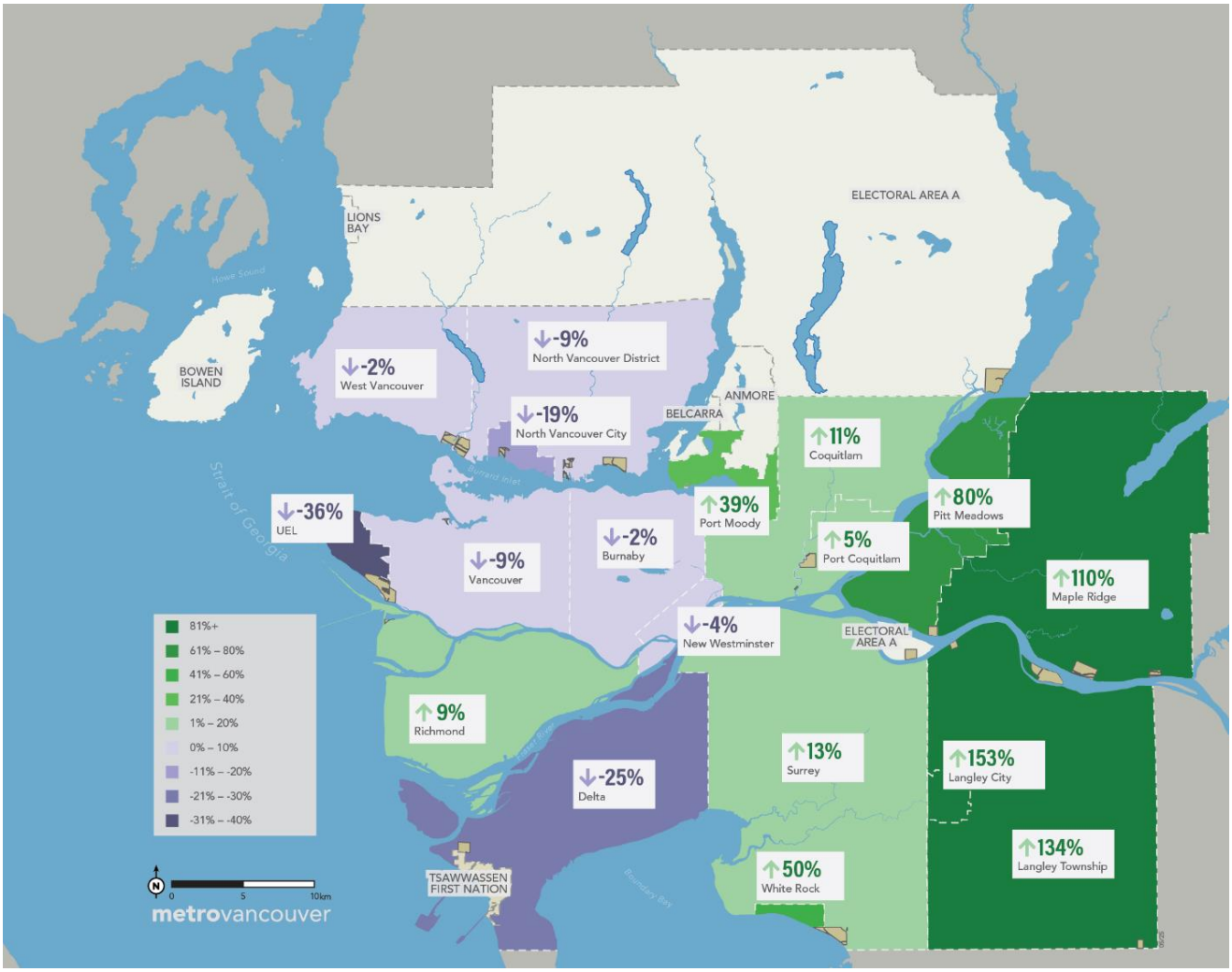
- If more employers restrict remote working, commute trips will increase along with more driving.
- Stable and sufficient funding is still needed to keep transit running and to support planned expansions to ensure affordable and convenient transportation options for residents.
- Current economic uncertainty due to tariffs and trade disputes may put future investments in transit and active transportation at risk.

TRANSIT USE AROUND THE WORLD

In 2023, 10% of all trips in the Metro Vancouver region were made by transit. In Seattle, 23% of all trips are made on transit. European jurisdictions also have higher transit use, such as London (UK) (21%), Stockholm (32%), and Oslo (30%). Singapore's unique geography and limited roadways have resulted in very high public transit ridership, at 44% of all trips.

Figure 4 | Regional change in number of trips made on transit between 2017 and 2023.

Source: TransLink 2023 Trip Diary[2]



The Region's Residents Are Walking and Cycling More

- The share of **walking trips increased from 14% in 2017 to 18%** in 2023, **and trips by bike increased from 1.7% to 2.4%** over the same period[2].
- While walking trips increased in almost all areas of the region, **some municipalities experienced particularly high growth** in the number of walking trips between 2017 and 2023 compared to the regional average[2].
- In some parts of the region, the share of **e-bikes** among small personal mobility devices (such as bicycles, scooters, and skateboards) **rose from 4.5% in 2019 to 16% in 2023**[6].
- More Metro Vancouver communities are hosting shared bike, e-bike, and e-scooter options. Among those with bike share programs, **bike share trips accounted for 2.8% of all bike trips in 2023 – more than tripling** the 0.8% share in 2019/2020[6].

Benefits of Walking, Rolling and Cycling

- Walking, rolling and cycling **improve physical and mental health**[7]**.**
- The advent of e-bikes and e-scooters has made **active transportation accessible to more people** with varying physical fitness and abilities.

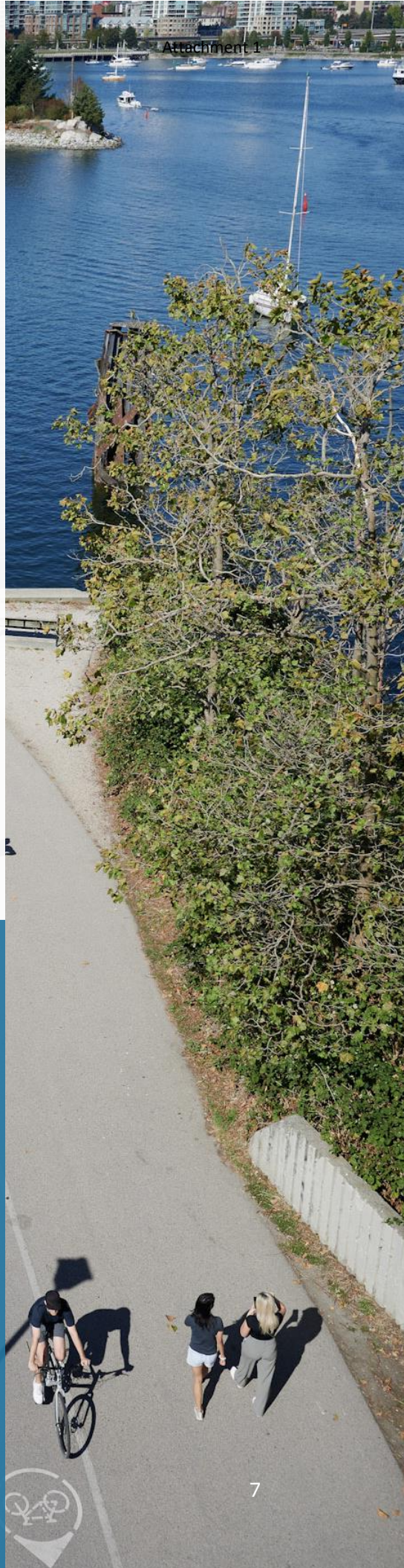
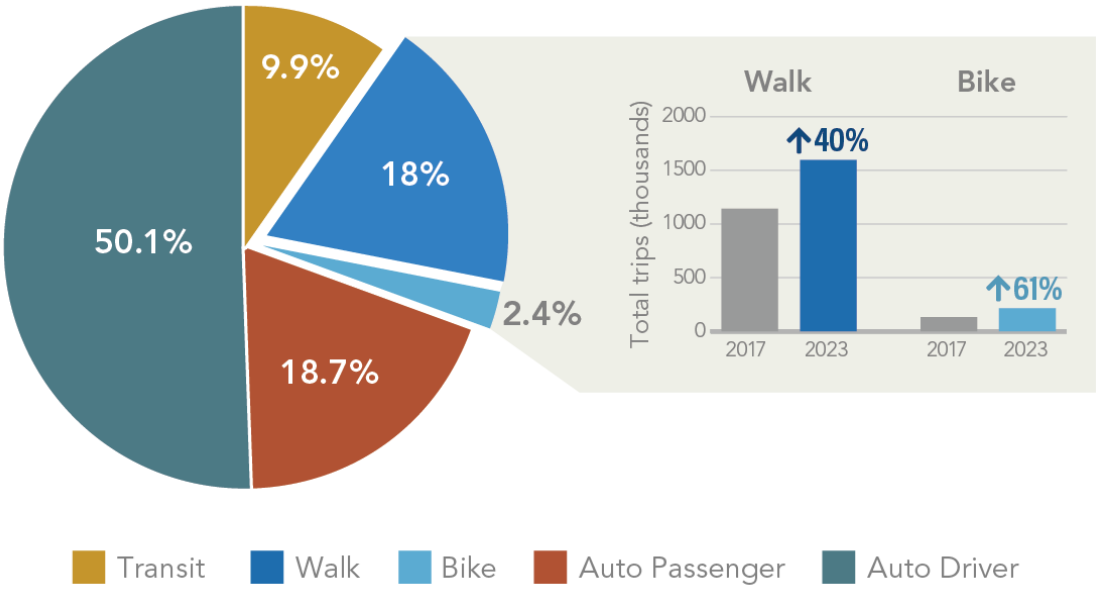


Figure 5 | While most trips in the region are still taken by private vehicle, Metro Vancouver residents are choosing to walk and cycle more. From 2017 to 2023 the number of trips made by walking increased by 40%, and trip made by bike increased by 61%.

Source: TransLink 2023 Trip Diary[2]

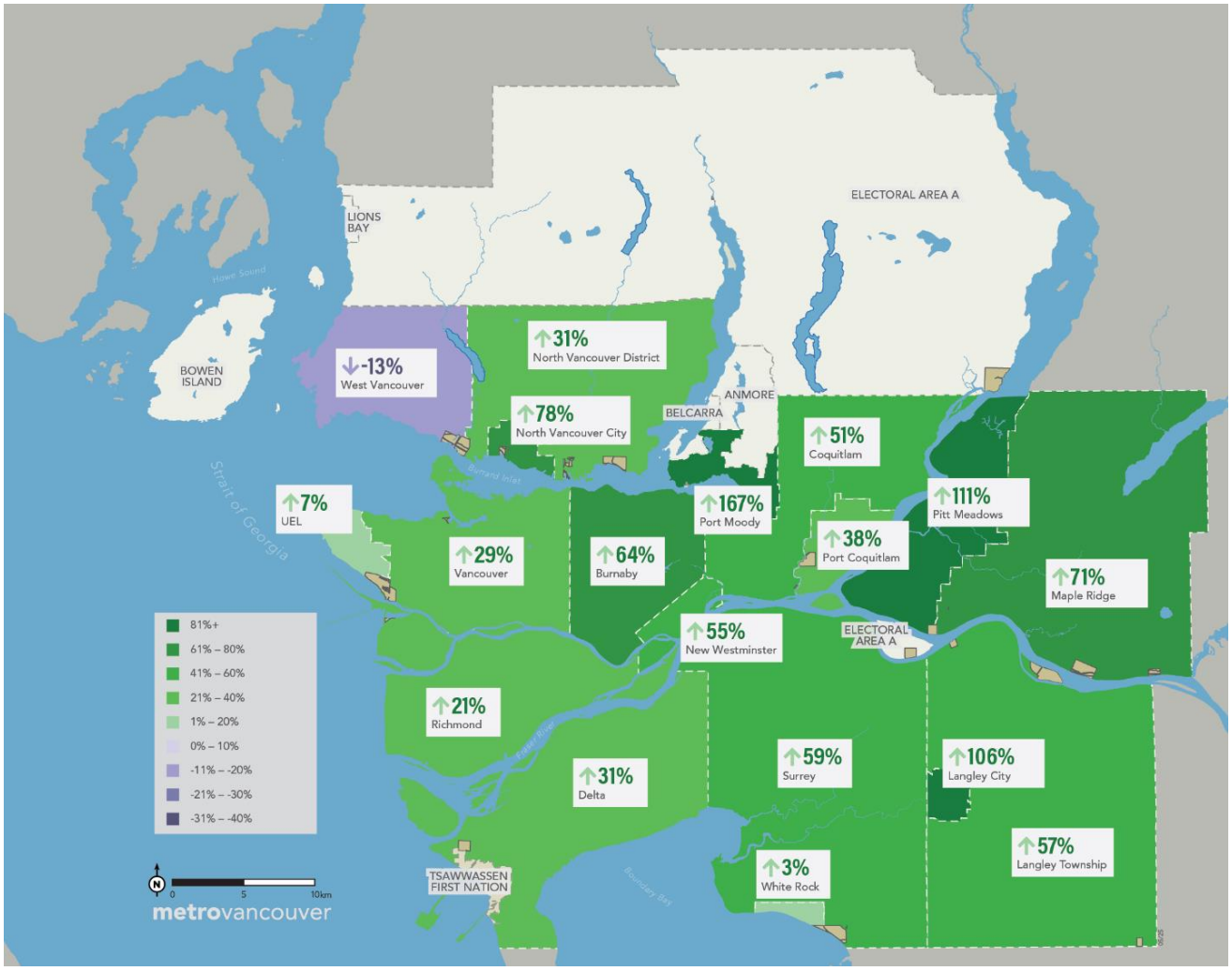


WHAT ARE THE RISKS TO PROGRESS?

- Without financial support to offset upfront costs, some low-income residents may not be able to afford e-bikes. Past provincial rebate programs for e-bikes have been fully subscribed within hours of opening, but the Province has not renewed them.
- Bike share programs are not available in every municipality and prices may still be unaffordable for some residents.
- Many areas in the region lack protected bike lines, and infrastructure—such as sidewalks, bike lanes, and bike storage—is often not designed for e-bikes and e-scooters. Infrastructure improvements can help to ensure active transportation is safe, comfortable, and accessible for everyone.

Figure 6 | Change in the number of walking trips between 2017 and 2023 across the region.

Source: TransLink 2023 Trip Diary[2]



WALKING AND CYCLING AROUND THE WORLD

Paris, France recently made major improvements for walking and cycling in the central city, including reclaiming 50% of on-street parking for walking and cycling, restricting vehicle access to certain areas and major streets, pedestrianizing key routes, and expanding sidewalks. As a result, health-harming air pollution has dropped by 40%, and numbers of cyclists have surged.

London, United Kingdom has recently seen a notable rise in cycling following the introduction of dockless bike share programs.

Montreal provides an example in the Canadian context. Last summer, the city began the process of progressively implementing a pedestrian priority zone in the Old Montreal area, and the city has significantly expanded its cycling networks.

More of the Region's Car Buyers Are Choosing Electric

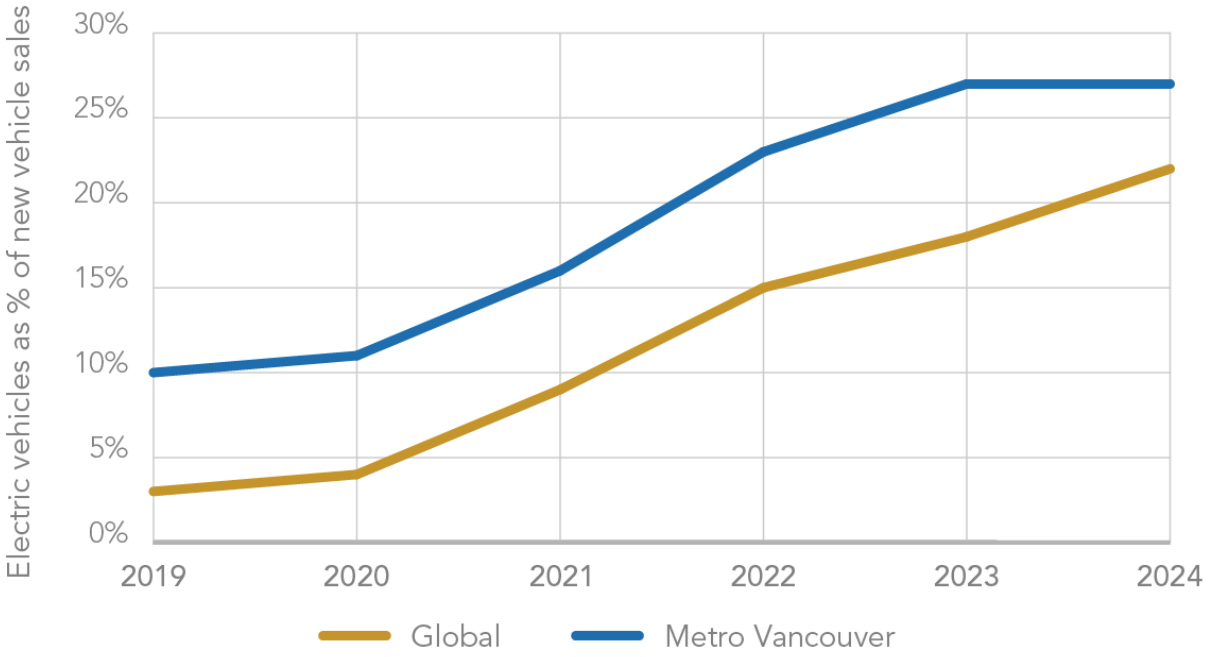
- In 2024, **electric vehicle (EV) sales accounted for 27% of all new vehicles** sold in the region[8].
- While EVs still represent a small share (about 5%) of the overall number of vehicles on the road, federal and provincial policies require all new vehicles sold by 2035 to be EVs, which will result in a **near-complete transition to EVs on the road by the year 2050**[9].
- Recent public opinion research indicates that **69% of Metro Vancouver residents would purchase an EV as their next vehicle**, and 72% believe an EV would be cheaper to own than a gas vehicle[10].

Benefits of Electric Cars

- EVs are **considerably cheaper to operate than gas cars** due to savings on maintenance and fuel costs over the vehicle's lifespan, despite higher upfront costs[10].
- EV owners are **less exposed to volatile global oil prices** and benefit from made-in-BC clean energy (Figure 8).

Figure 7 | EV sales rapidly increased between 2019 and 2023 but levelled off in 2024.

Sources: S&P *Canadian Automotive Insights* (Metro Vancouver)[8]
International Energy Agency *Global EV Outlook 2025* (Global)[11]



WHAT ARE THE RISKS TO PROGRESS?

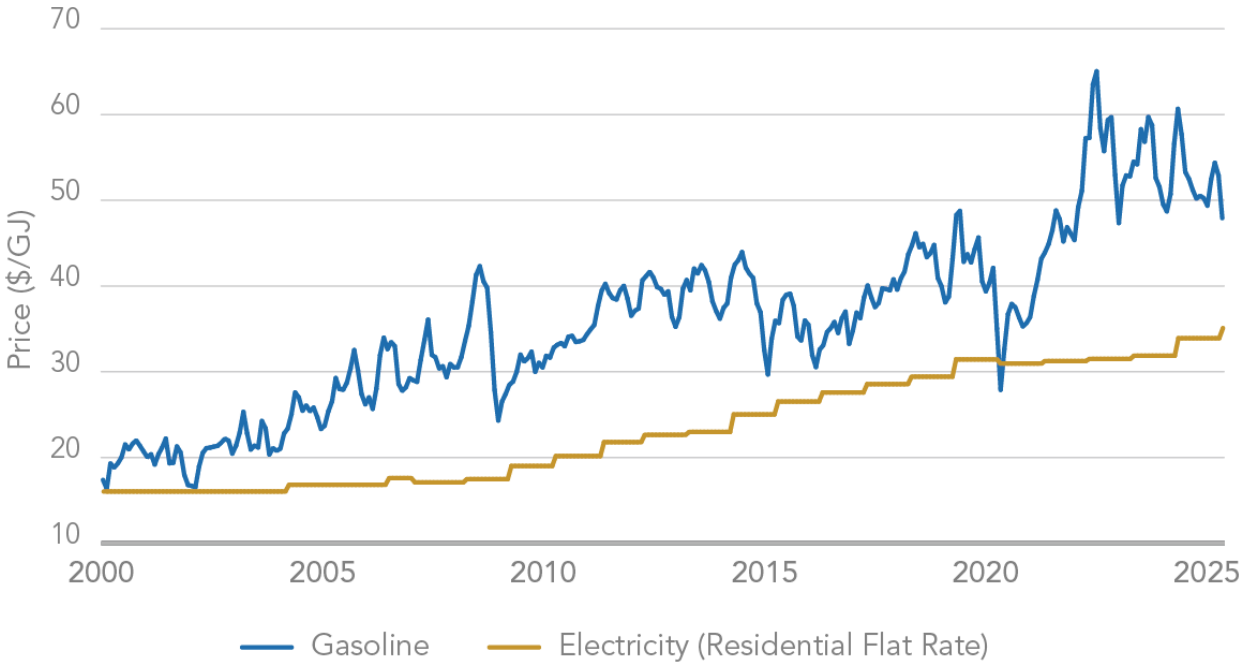
- EV rebate programs at provincial and federal levels have recently been paused.
- A rapid scale up of EVs requires availability of public and at-home EV charging to keep pace.
- While a transition to an electric transportation system will reduce air pollution and GHG emissions, it will not reduce congestion or vehicle crashes, and a continued reliance on car-based mobility could discourage transit use or active transportation.

TARIFF, TRADE, AND POLICY UNCERTAINTY

Tariffs levied by the United States against Canada and other countries are expected to raise the cost of all new vehicles, if they remain in place. However, emerging research suggests that most EVs in Canada are not subject to US automotive tariffs[12] and globally, overall car sales volume may be more at risk than the share of EV sales[11].

Figure 8 | Gasoline prices have been volatile and almost always higher than stable BC electricity rates, resulting in lower and more predictable fuel costs for EVs compared to gasoline vehicles.

Sources: Statistics Canada (gasoline)[13]
BC Hydro (electricity)



EV SALES AROUND THE WORLD

In 2024, a surge in EV uptake in Montreal bumped the Metro Vancouver region out of the top rank for EV sales among Canadian urban areas for the first time[8]. Despite this shift within the Canadian context, the region remains among leading jurisdictions worldwide.

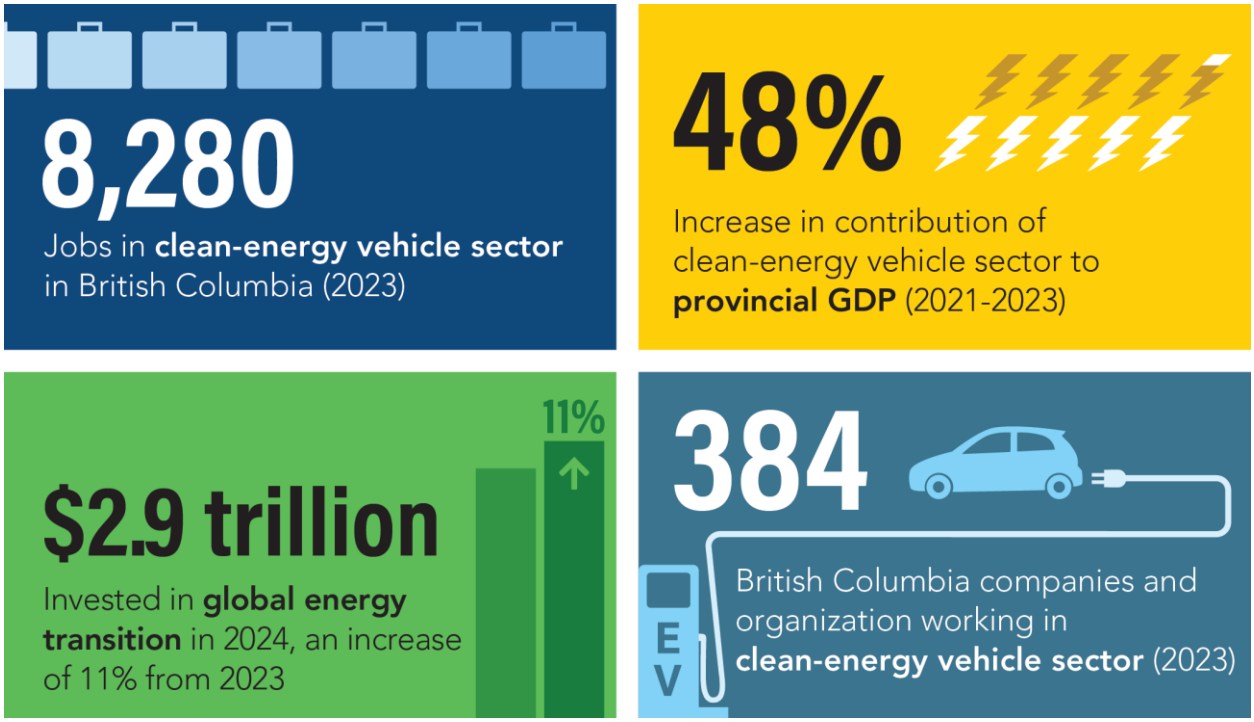
EV sales in the Metro Vancouver region are comparable to leading countries in Europe such as Germany (19%), France (24%), and the United Kingdom (30%). EV sales have been especially strong in the Scandinavian countries of Denmark (48%), Finland (50%), and Sweden (58%). Norway is a global leader in EV uptake, with EVs making up 92% of all new vehicle sales in 2024. By volume, China accounts for the largest amount of EV sales, with EVs making up 48% of new vehicle sales and over half all EVs sales globally[11].

Clean Transportation is a Growing Industry in BC

- As of 2023, an estimated 384 British Columbia companies and organizations were directly supporting **8,280 full-time jobs in the clean-energy vehicle sector**, which includes vehicles and their components, batteries and hydrogen fuel cells, charging stations, and other technologies[14].
- The clean-energy vehicle sector **increased its contribution to provincial GDP by about 48%** between 2021 ($622 million) and 2023 ($920 million) [14]. Many of the companies driving this growth in jobs and GDP are located in the Metro Vancouver region.
- This growth is part of a broader global investment in clean energy. In 2024, **$2.9 trillion was invested in the global energy transition** – an increase of 11% from 2023 and more than doubling investment levels in 2020[15].

Benefits of A Growing Clean Transportation Industry

- Clean energy investments can **support domestic energy production and supply chains**. For example, the recent BC Hydro calls for power are driving investment in solar and wind energy.
- Local academic institutions are helping to **train workers for the growing clean technology sector, supporting the local economy**. For example, the BC Institute of Technology and Kwantlen Polytechnic University offer an EV Maintenance Training Program for automotive technicians[16].



WHAT ARE THE RISKS TO PROGRESS?

- Tariffs and shifting trade policies may have economy-wide impacts that lead to reduced economic growth, hesitant investors, and less funding for research and development.
- The Metro Vancouver region could lose private-sector investment to other jurisdictions if other governments commit more strongly to policy that signals stability to investors and businesses.

WHAT IS WORKING ELSEWHERE?

By virtually all metrics, China dominates global investment, production, and export of clean energy and transportation products and industries. The European Union is the second largest hub in many important aspects of clean economic growth, such as EV production. Strong government policy, whether through direct intervention or market signals, has been a critical force in supporting the growth in jobs and GDP from clean transportation in both of these economies. Canada has been taking steps to build domestic supply chain and economic growth in clean transportation, such as with the federal critical minerals strategy and support for EV manufacturing, notably in Southwestern Ontario.

REFERENCES

[1] Metro Vancouver. *Emissions Inventory*. https://metrovancouver.org/services/air-quality-climate-action/emission-inventories-and-forecasts

[2] TransLink. (2025). *2023 Trip Diary Survey*. https://www.translink.ca/plans-and-projects/data-and-information/research-and-insights/trip-diary-survey.

[3] Metro Vancouver. (2015). *Housing and Transportation Cost Burden.* https://metrovancouver.org/services/regional-planning/Documents/housing-and-transportation-cost-burden.pdf

[4] Health Canada. (2020). *Traffic-Related Air Pollution: asthma, Allergies, and Lung Function*. https://www.canada.ca/content/dam/hc-sc/documents/services/publications/healthy-living/traffic-related-air-pollution-asthma-allergies-lung-function-assessment/traffic-related-air-pollution-asthma-allergies-lung-function-assessment.pdf

[5] World Health Organization. (2023). *Global status report on road safety*. https://iris.who.int/bitstream/handle/10665/375016/9789240086517-eng.pdf?sequence=1

[6] Bigazzi, A., & Hassanpour, A. (2024, December). *Four-Year Trends of Personal Mobility Devices in Metropolitan Vancouver*. University of British Columbia, Faculty of Applied Science, Research on Active Transportation Lab. https://civil-reactlab.sites.olt.ubc.ca/files/2024/12/2024-Trends-Report_V3Revised.pdf

[7] Devlin, A., Frank, L., & vanLoon, J. (2009). *Physical Activity and Transportation Benefits of Walkable Approaches to Community Design in British Columbia.* https://atl.sites.olt.ubc.ca/files/2011/07/BCRPA_Transportation_Study_2009.pdf

[8] S&P Global Mobility. (2025). *Canadian Automotive Insights*.

[9] Metro Vancouver. (2023, August). *Keeping it Current: Guidance for Collaborative Deployment of EV Charging in Metro Vancouver*. https://metrovancouver.org/services/air-quality-climate-action/Documents/keeping-current-guidance-collaborative-deployment-ev-charging-mv.pdf

[10] Clean Energy Canada. (2025, March). *Electrifying the Lot*. https://cleanenergycanada.org/wp-content/uploads/2025/03/Report_2025_MURB_V4-1.pdf

[11] International Energy Agency. (n.d.). *Global EV Outlook 2025 – Expanding Sales in Diverse Markets*. https://iea.blob.core.windows.net/assets/0aa4762f-c1cb-4495-987a-25945d6de5e8/GlobalEVOutlook2025.pdf.

[12] Electric Mobility Canada. (2025, May 15). *Setting the Record Straight: Most EVs in Canada are not Subject to Tariffs.* https://emc-mec.ca/wp-content/uploads/2025/05/SETTING-THE-RECORD-STRAIGHT-MOST-EVS-IN-CANADA-ARE-NOT-SUBJECT-TO-TARIFFS.pdf.

[13] Statistics Canada. (2025). *Monthly average retail prices for gasoline and fuel oil, by geography*. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810000101

[14] BC Ministry of Energy and Climate Solutions. (2025). *Zero-Emissions Vehicle Update 2023*. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/transportation/2023_zero-emission_vehicle_update.pdf

[15] Bloomberg Finance L.P. (2025). *Energy Transition Investment Trends*. BloombergNEF. https://about.bnef.com/insights/finance/energy-transition-investment-trends/#toc-report.

[16] BC Ministry of Energy and Climate Solutions. (2025). *Zero-Emissions Vehicle Update 2024*. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/transportation/2024_zev_annual_report.pdf

Brentwood, Burnaby

Trends in Emissions from Transportation (Personal Mobility)

Jason Emmert
Program Manager, Regional Climate Action Policy

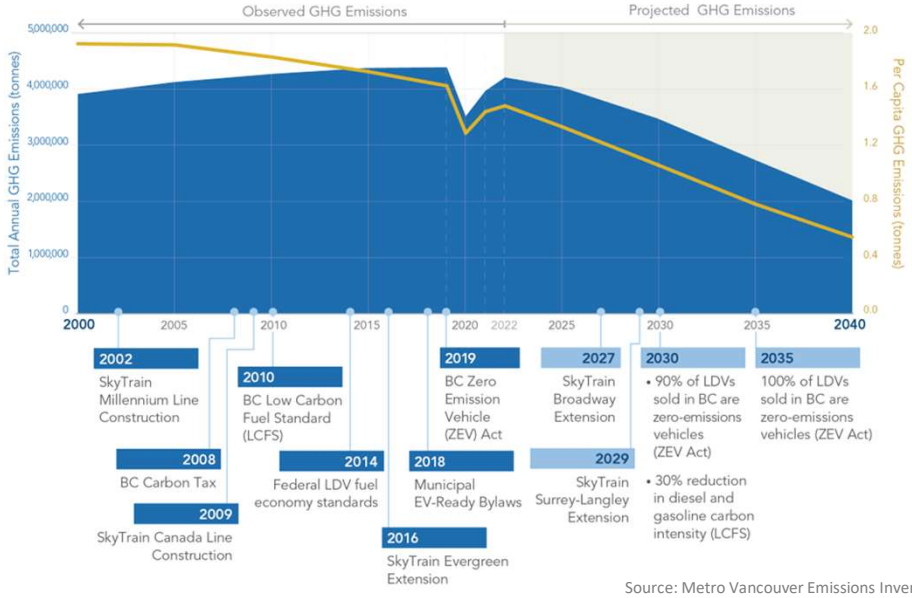
Margaryta Pustova
Senior Policy and Planning Analyst

Air Quality and Climate Committee, July 4 2025

metrovancouver

1

EMISSIONS TRENDS IN THE METRO VANCOUVER REGION



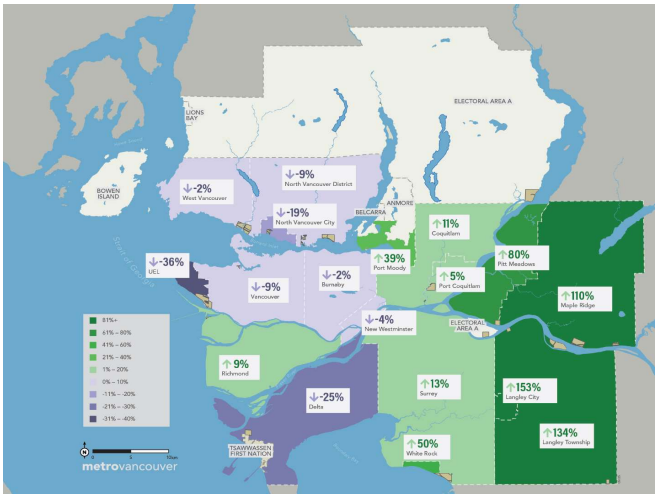
Source: Metro Vancouver Emissions Inventory

2

TRAVEL TREND 1: LESS DRIVING

From 2017 to 2023:

- Average daily distance driven by vehicles in the region **decreased by 5%**, and **per capita vehicle travel decreased by 17%.**
- The **overall share of trips taken by transit fell** from 11% to 10%, but changes in transit use **vary widely across the region.**
- The share of **employees working from home grew** from 11% to 24%.



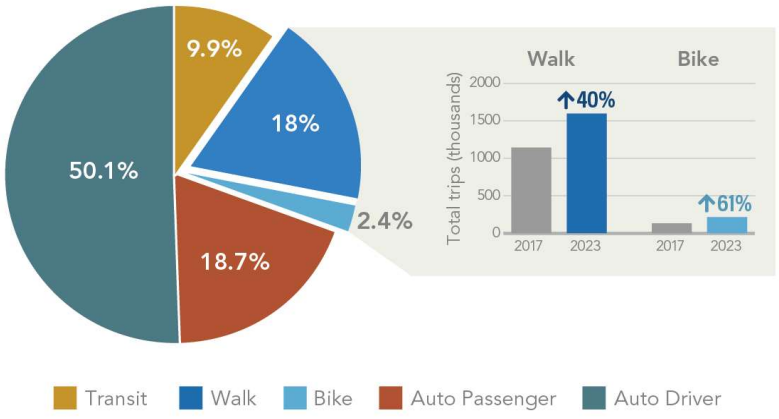
Change in average daily transit trips across the region from 2017 to 2023
Source: TransLink 2023 Trip Diary

3

TRAVEL TREND 2: MORE WALKING AND CYCLING

From 2017 to 2023:

- Walking trips **increased by 40%,** from 14% to 18%
- Trips by bike **increased by 61%** from 1.7% to 2.4%
- In some parts of the region, the share of e-bikes among small personal mobility devices **rose from 4.5% in 2019 to 16%**



Mode share in 2023, and changes in walking and cycling from 2017 to 2023
Source: TransLink 2023 Trip Diary

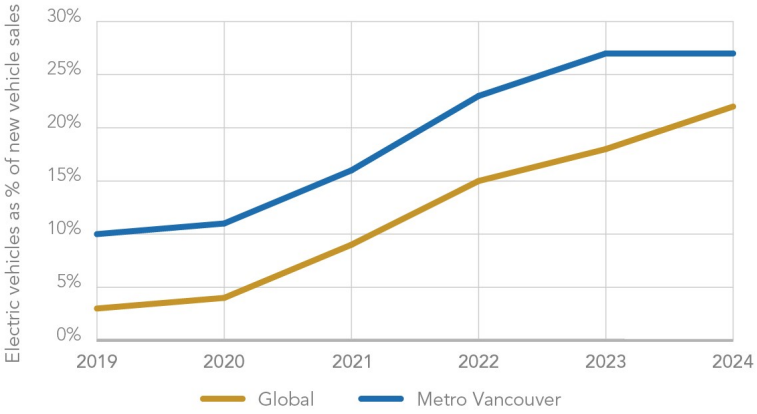
4

TRAVEL TREND 3: CAR BUYERS ARE CHOOSING ELECTRIC

In 2024, **EV sales accounted for 27% of all new vehicles** sold in the region.

There will be a **near-complete transition to EVs on the road by 2050**.

69% of Metro Vancouver residents **would purchase an EV as their next vehicle**.



EV sales as a percentage of all vehicle sales
Sources: S&P *Canadian Automotive Insights* (Metro Vancouver)
International Energy Agency *Global EV Outlook 2025* (Global)

metrovancouver 5

5

CLEAN TRANSPORTATION IS GROWING OUR ECONOMY

8,280
Jobs in **clean-energy vehicle sector** in British Columbia (2023)

48%
Increase in contribution of clean-energy vehicle sector to **provincial GDP** (2021-2023)

$2.9 trillion
Invested in **global energy transition** in 2024, an increase of 11% from 2023

11%

384
British Columbia companies and organization working in **clean-energy vehicle sector** (2023)

EV

metrovancouver 6

6


Sea wall, Vancouver

LOOKING AHEAD

- The transition to zero emissions transportation is underway and well-positioned to continue
- This creates benefits for health, affordability, economic security, safety, air quality, and congestion
- There are upcoming opportunities to provide feedback on policy through the *CleanBC* review

metrovancouver 7

7


Coquitlam

Questions

metrovancouver
Together we make our region strong

8

8

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Erik Blair, Senior Planner, and Margaryta Pustova, Senior Policy and Planning Analyst, Air Quality and Climate Action Services

Date: June 16, 2025 Meeting Date: July 4, 2025

Subject: **Trends in Emissions from Buildings**

RECOMMENDATION

That the MVRD Board:

a) receive for information the report dated June 16, 2025, titled "Trends in Emissions from Buildings"; and
b) direct staff to forward a copy of the report dated June 16, 2025, titled "Trends in Emissions from Buildings" to member jurisdiction staff, with an offer of a presentation to Council upon request.

EXECUTIVE SUMMARY

In response to requests from Air Quality and Climate Committee members for more accessible and concise information about air quality and climate change, the attachment to this report summarizes current trends in the buildings sector in the Metro Vancouver region to support discussions regarding regional policies and initiatives.

Buildings remain the second-largest source of regional greenhouse gas (GHG) emissions and a significant source of other air pollutants that directly harm human health. Upgrading existing buildings can improve energy efficiency and provide thermal safety for residents in response to more frequent extreme heat events. Between 2010 and 2022, GHG emissions increased from residential buildings by 11.5%, and by 20.7% from commercial and industrial buildings, primarily due to more than 42,000 new gas connections in this period. More local governments are adopting stronger standards for energy efficiency and GHG reduction in new construction but standards for upgrading existing buildings are lacking.

PURPOSE

To provide the Air Quality and Climate Committee and MVRD Board with information about trends in the buildings sector, including about emissions, policy and practice, to inform discussion and decision making.

BACKGROUND

This report is provided to inform discussions regarding regional policies and initiatives, and/or advocacy to other orders of government to reduce building emissions. Policies and initiatives to reduce emissions from this sector are critical to protect people and the environment, as outlined in the targets, goals and strategies in the Board-approved *Clean Air Plan* and *Climate 2050 Buildings Roadmap*.

BUILDINGS EMISSIONS TRENDS

Buildings remain the second-highest source of GHGs in our region, following transportation. This is mostly due to burning fossil natural gas for space and water heating. Using fossil natural gas as an energy source emits 16 times more GHGs than BC's grid electricity.

Building emissions are still rising. Between 2010 and 2022, GHG emissions from buildings increased by 17% overall (11.5% for residential buildings and 20.7% for commercial and industrial buildings) and there were 42,659 new gas connections to buildings (39,011 for residential buildings and 3,648 for commercial buildings). Between 2010 and 2020, nitrogen oxides (NO_x – an air pollutant that harms health) increased by 12.3%.

Between 2010 and 2022, per capita building-related emissions decreased by 4.3% across all building types, due to a combination of increasing population along with stronger building codes, some electrification of heating systems, and decreasing average home size as the regional share of multi-unit residential buildings grows.

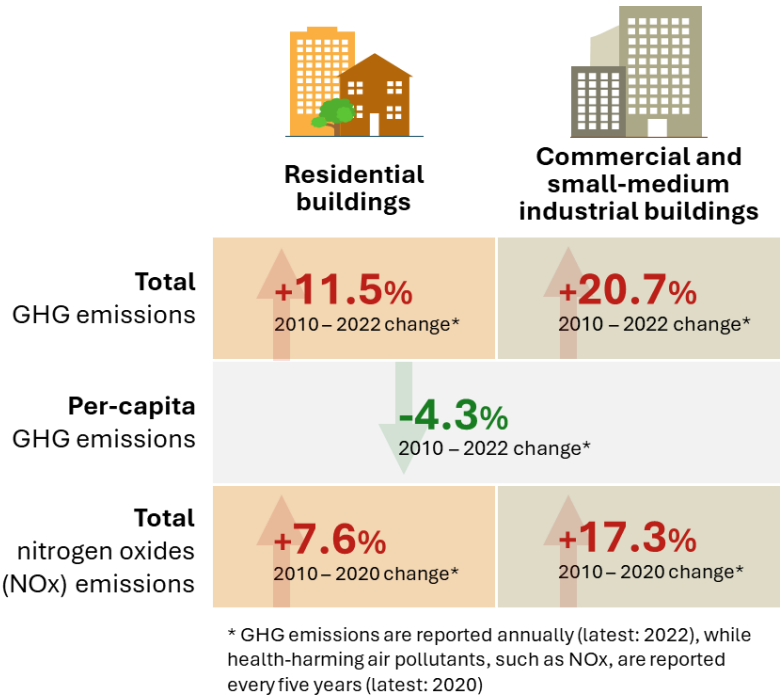


Figure 1: Emissions of air pollutants from Buildings continue to rise. (Source: Metro Vancouver 2022 Emissions Inventory).

Three general trends in the region's buildings sector are described in Attachment 1:

- **Stronger codes are making new buildings cleaner and more efficient**: The adoption of the Zero Carbon Step Code and the Energy Step Code is driving new construction to meet higher energy efficiency and carbon reduction standards, with a shift towards electric heating, cooling, and hot water systems. To date, 14 municipalities in Metro Vancouver have adopted one or both of these codes, representing 93% of the region's population.
- **Accelerated upgrades are needed to reduce energy and emissions in existing buildings**: Over 80% of buildings in the region will still be standing in 2050, and many will require significant retrofits in the coming years; ideally these upgrades will also improve energy efficiency and reduce emissions, which can improve affordability, health, and comfort for residents.
- **For many, a lack of cooling is becoming a safety concern**: As extreme heat events become more frequent, the demand for cooling systems in buildings is increasing, and policy is beginning to address this life-safety issue through regulations and public programs.

Support and Clear Policy Needed for Building Upgrades

Despite strong progress for new construction, retrofits for existing buildings are not subject to energy or emissions standards, and many are prone to over-heating. Recognizing that building owners face high upfront costs for upgrades, many US jurisdictions have developed long-term financing programs. These programs complement building reporting and performance requirements that provide access to building data to support fair and effective policy making and set clear rules that create market certainty. A holistic policy approach can support economic growth and investments that can lower energy bills, improve air quality, and protect people—especially those most vulnerable to heat—during extreme weather like the 2021 Heat Dome.

As described in the Manager's Report in this agenda package on the review of *CleanBC*, staff are providing input that reflects the MVRD Board's direction for the Province to provide stronger climate leadership. This includes encouraging the Province to adopt highest-efficiency equipment standards and implement policies to support retrofits, protect thermal safety, and guide efficient and low-carbon upgrades in existing buildings.

ALTERNATIVES

1. That the MVRD Board:
   a) receive for information the report dated June 16, 2025, titled "Trends in Emissions from Buildings"; and
   b) direct staff to forward a copy of the report dated June 16, 2025, titled "Trends in Emissions from Buildings" to member jurisdiction staff, with an offer of a presentation to Council upon request.
2. That the MVRD Board receive for information the report dated June 16, 2025, titled "Trends in Emissions from Buildings".

FINANCIAL IMPLICATIONS

Upgrading buildings to reduce emissions and add cooling has costs and benefits, which vary widely depending on the building type, age, cooling needs and technology, and other factors. Accelerating building retrofits presents business and job growth opportunities for the region. Through UBCM resolutions and direct communication to the Province, the MVRD Board and other local governments have successfully advocated for provincial policies and programs to support higher performance new buildings, and some incentive programs for heat pumps and other building retrofit supports and measures.

CONCLUSION

New buildings are meeting higher standards for energy efficiency, and low-carbon standards have been adopted by 14 Metro Vancouver jurisdictions. However, over 80% of today's buildings will still be standing in 2050, and many will require major upgrades to meet regional climate goals and adapt to extreme heat in the coming years. Scaling up retrofits through stronger policy and funding can cut emissions, reduce energy costs, and protect residents' health and safety. Attachment 1 provides a summary of current trends in the building sector, incorporating recent data and comparisons to leading jurisdictions. This information is provided to support member jurisdictions' planning, decision-making and advocacy.

ATTACHMENTS

1. "Backgrounder on Buildings Emissions Trends in the Metro Vancouver Region", dated June 16, 2025.
2. Presentation re: "Trends in Emissions from Buildings", dated July 4, 2025.

74671379

metrovancouver

Backgrounder on Buildings Emissions Trends in the Metro Vancouver Region

New data from Metro Vancouver's Emissions Inventory shows that greenhouse gas (GHG) emissions from buildings continued to rise between 2010 and 2022. Buildings remain the second-largest source of GHG emissions in the region and a significant source of air pollutants that directly harm human health, primarily from burning natural gas for space and water heating.

More local governments are adopting stronger standards for energy efficiency and GHG reduction in new construction.

However, the challenge of retrofitting existing buildings continues to grow, while there is an increasing need for cooling as temperatures rise. Continued policy support and investment in clean energy infrastructure are critical to reducing emissions, improving energy efficiency, and ensuring affordability and health benefits for residents.

This attachment is intended to provide elected officials with insights on emissions-related trends in the building sector to inform planning and decision-making.

Building Emissions Are Still Increasing

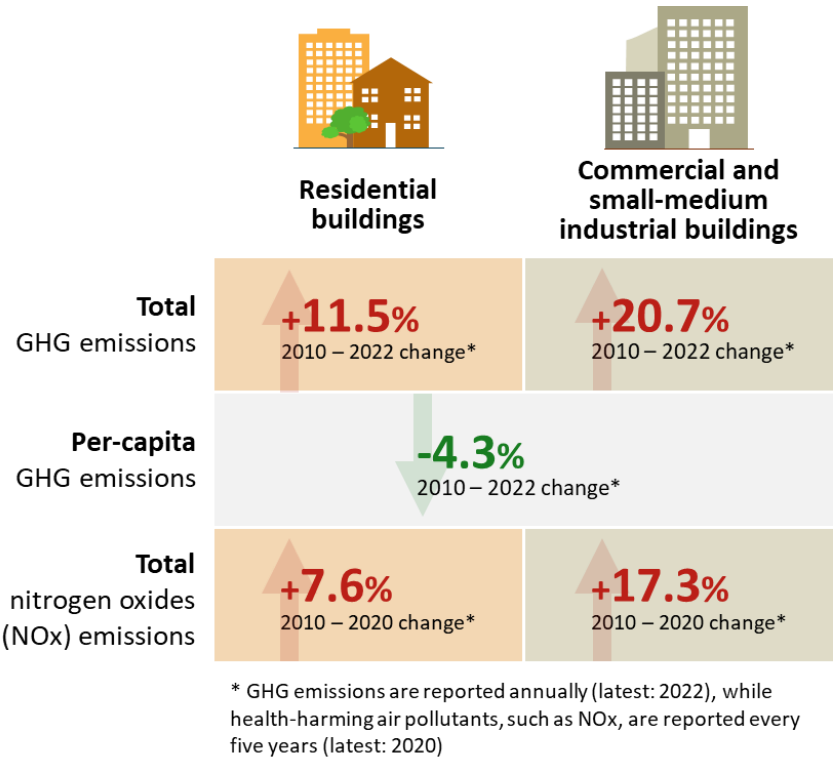


Figure 1 | Emissions of air pollutants continue to rise.

Source: Metro Vancouver 2022 Emissions Inventory[1]

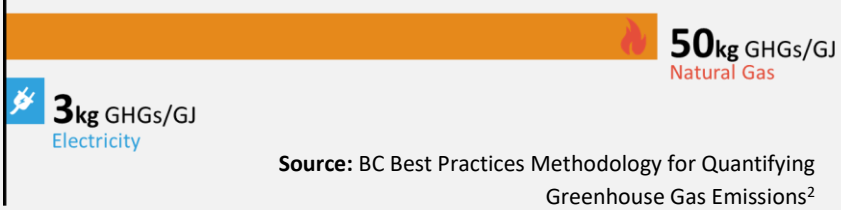
Buildings remain the second-highest source of GHGs in our region, following transportation.

Building emissions rose along with the number of new gas connections

- Between 2010 and 2022, GHG emissions increased by **11.5%** from **residential buildings** and by **20.7%** from **commercial and industrial buildings**.
- Over the same period, **per capita emissions** from buildings in the region decreased slightly by **4.3%**.
- Between 2010 and 2020, nitrogen oxide (NOx) emissions, which harm human health, increased by **7.6%** in **residential buildings** and **17.3%** in **commercial and industrial buildings**.
- There were **42,659 new gas connections** between 2010 and 2022 – 39,011 were for residential buildings (8.6% increase), and 3,648 for commercial buildings (7.3% increase).

Figure 2 | Emissions from buildings are mostly due to burning fossil natural gas for space and water heating.

Fossil natural gas emits **16 times** more GHGs than electricity from BC's Integrated Grid.



Source: BC Best Practices Methodology for Quantifying Greenhouse Gas Emissions[2]

Stronger Codes are Making New Buildings Cleaner and More Efficient

- As of March 10, 2025, new building projects across BC must meet Level 1 of the Zero Carbon Step Code by measuring and disclosing a building's operational GHG emissions[3].
- By the year 2030, new building projects will have to meet the strongest level (Level 4) of the Zero Carbon Step Code[4] – most buildings will comply by having electric heating, cooling, and hot water equipment.
- The Energy Step Code has reduced energy use in new buildings. Projects started after May 1, 2023 are at least **20% more energy efficient** than the 2018 Building Code[5].
- As of 2025, 14 municipalities in the Metro Vancouver region have adopted higher steps of **the Energy Step Code** and/or **the Zero Carbon Step Code**[6], representing about 93% of the region's population.

Benefits of Stronger Codes for New Buildings

- Research by BC Housing and others shows that low-carbon buildings can be built at or below the cost of conventional buildings and reduce the burden of future energy and carbon retrofits[7].
- Residents of energy-efficient, low-carbon homes enjoy lower utility bills, cleaner air, and more comfortable temperatures.
- Updates to building and fire codes help to protect residents from hazards like extreme heat, wildfire smoke, and earthquakes.

Figure 3 | BC has two opt-in building codes and local governments can adopt one or both: the **Energy Step Code** focuses on energy efficiency, and the **Zero Carbon Step Code** focuses on reducing GHG emissions.

Source: BC Community Climate Action Dashboard[6]

Industry is ready for Zero-Carbon New Buildings by 2030.

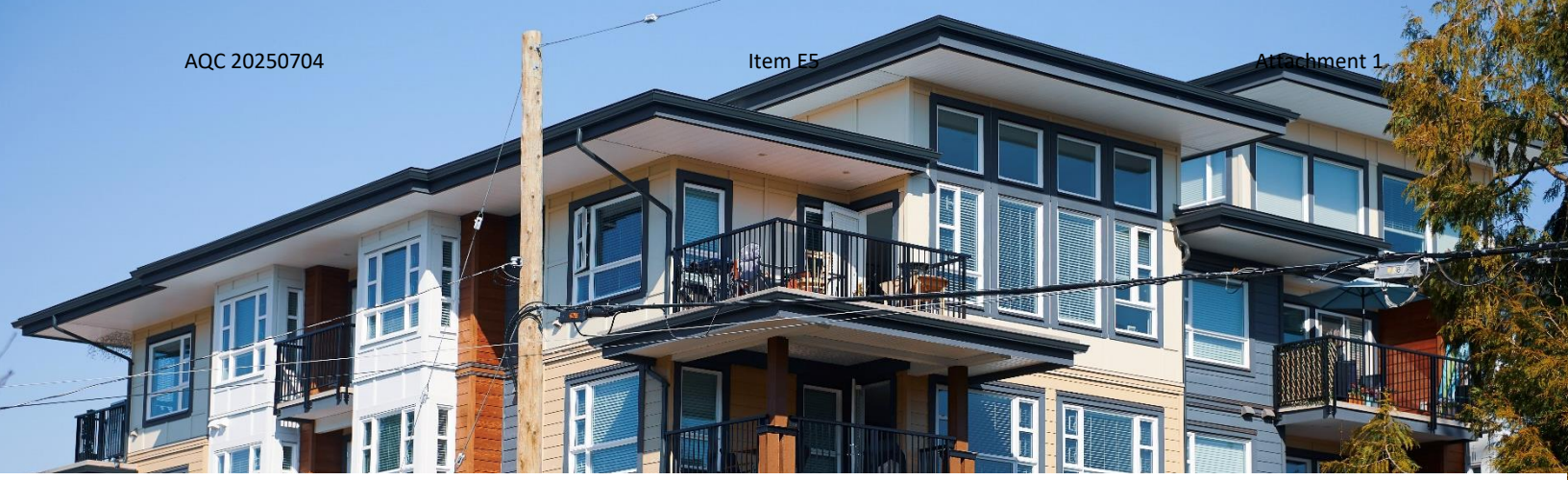
A survey conducted in 2024 by the Zero Emissions Innovation Centre revealed that **46% of builders** are already meeting provincial 2030 Zero Carbon Step Code requirements, and **another 44%** are confident that they can do so by 2030[8].

WHAT IS WORKING ELSEWHERE?

- **New York State**[9] and **California**[10] have adopted regulations that require electric space and hot water heating (e.g., heat pumps) in new buildings.
- California requires new construction to be equipped for a future transition from gas to electricity.
- **Denmark**[11]**, France**[12]**, and California**[13] are moving beyond just operational emissions, to introduce life-cycle emissions limits for new construction to reduce **embodied emissions**, such as from building materials like concrete and steel.

BC Hydro Ramps Up Clean Energy

BC Hydro has launched another "call for power" (a competitive bidding process), to acquire an additional 5,000 GWh per year of clean, renewable energy[14]. This is enough to power approximately 500,000 homes and doubles the supply from the responses to its 2024 call for power, most of which are wind projects. What's more, BC Hydro plans to invest over $700 million over the next three years in energy-efficiency programs, projected to save enough power each year to meet the needs of another 200,000 homes[14].

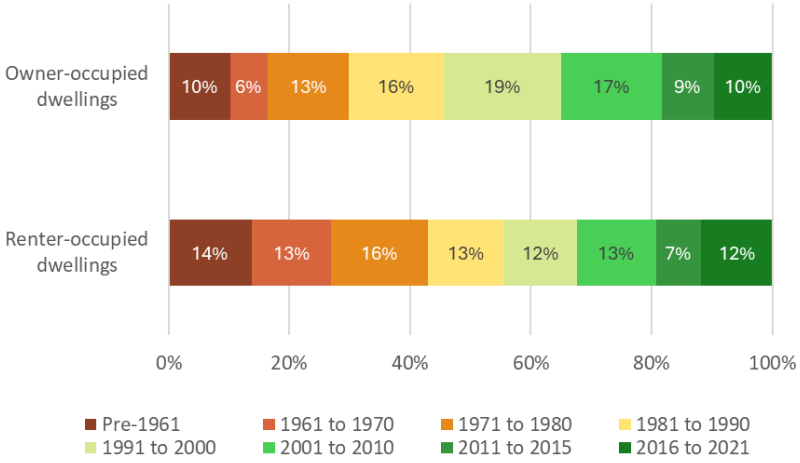


Accelerated Upgrades Are Needed to Reduce Energy and Emissions in Existing Buildings

- **Over 80% of the region's buildings will still be standing in 2050**[15].
- Across BC, upgrades to **40,000 houses** and **27,000 apartment units** are needed every year to decarbonize by 2050[16]. The Metro Vancouver region is home to more than **50% of BC's population**.
- Renters tend to live in older and less efficient buildings – **43% of renters live in homes built before 1980, compared to 29% of owners**[17]**.**

Figure 4 | Renters are more likely to occupy older homes

Source: Metro Vancouver Housing Data Book[17].

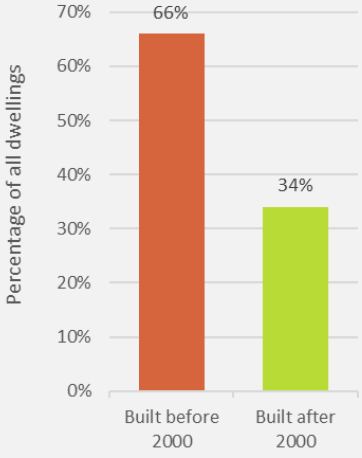


Hidden Emissions in Older Homes

Energy efficiency requirements weren't added to the BC Building Code until 2005, meaning at least **66% of dwellings in this region were not designed with energy performance in mind**[17]. That means many of these buildings are vulnerable to overheating, need more energy to heat and cool, and emit more GHGs and other harmful air pollutants.

Figure 5 | Percentage of Dwellings Built Before and After 2000.

Source: Metro Vancouver Housing Data Book[17].



Benefits of Policies for Building Upgrades

- Upgrades like heat pumps, better windows, and insulation **lower household energy bills and improve health**[18].
- Upgrades like heat pumps, insulation, and shading can **protect occupants from extreme heat**.
- Electrification and efficiency upgrades **improve energy security and protect against fossil fuel market fluctuations**[19]. Most existing and forthcoming BC electricity is generated within BC, making it less vulnerable to global disruptions.
- Many owners need financial support to make upgrades – **41% of owner-occupied households earn less than $90,000 annually**[17]**.**
- As of 2021, over **100,000 households** are burdened with high energy costs[20].

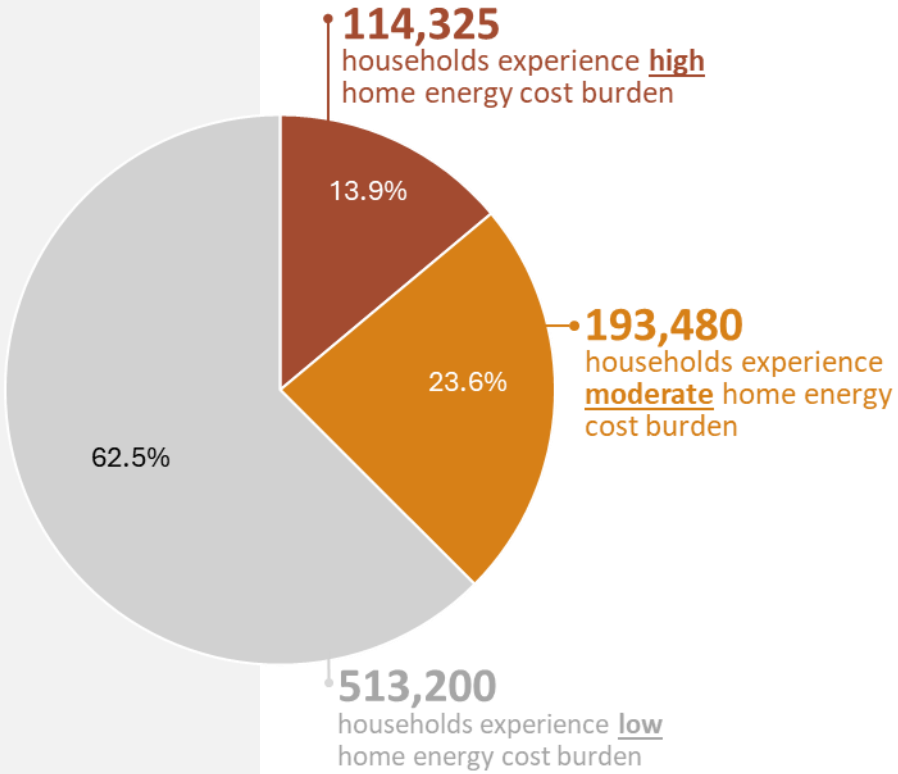
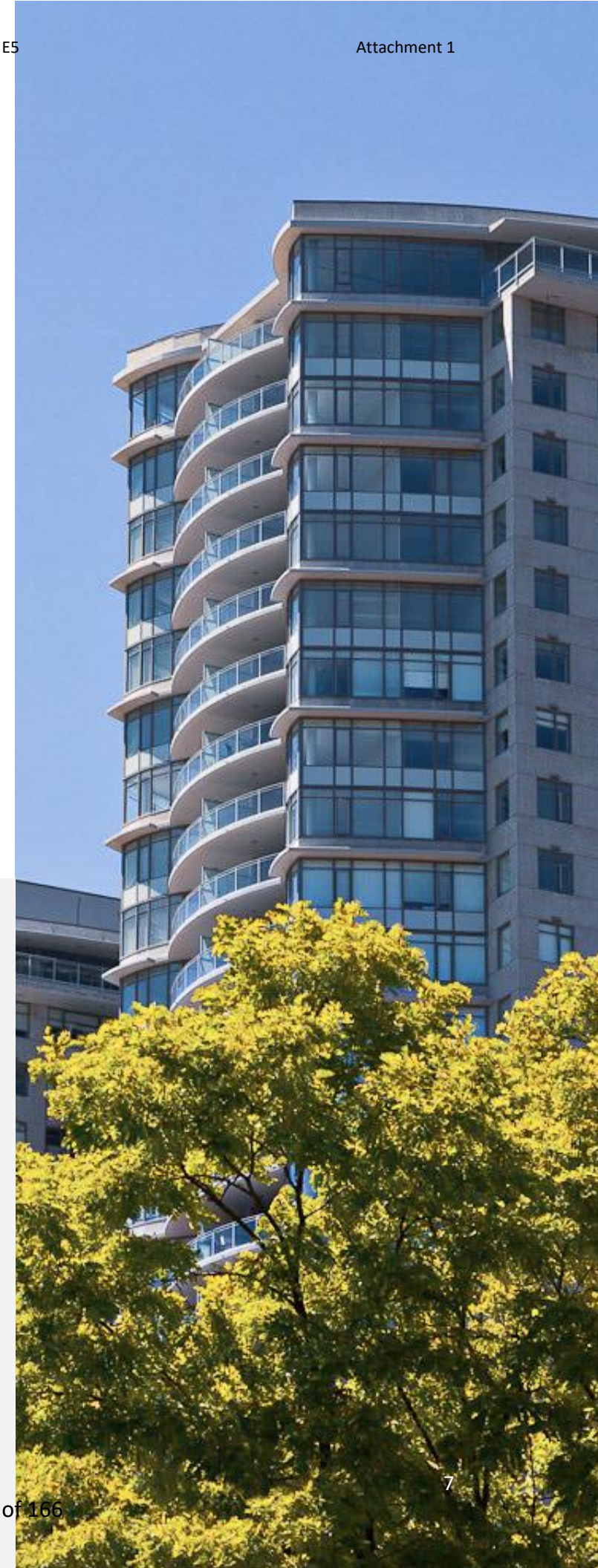


Figure 6 | Household energy cost burden, according to the percentage of annual income spent on home heating and electricity: **high** (>6%), **moderate** (3–6%), and **low** (<3%).

Source: Canadian Urban Sustainability Practitioners Energy Poverty Explorer[20].

WHAT ARE THE RISKS TO PROGRESS?

- Building upgrades face **upfront costs, limited financing options, and a lack of data** to inform policymaking.
- Most owners have **difficulty navigating the retrofit process** and many need significant support to plan and execute upgrades.
- **Short-term funding cycles** and reduced funding levels hinder long-term retrofit planning, especially for strata buildings, where projects often take years to organize.
- **A lack of consistent regulations** for energy and emissions performance may create a patchwork of policies, causing challenges for industry.



Collaborating on Clean and Efficient Buildings

B2E, a program of the Zero Emissions Innovation Centre, is a coalition of industry professionals, educators, policy makers and financial advisors working on the challenges of building electrification. Among their resources, they provide real-world examples of successful building upgrades, which can be viewed on their website.

B2E website link

Every Building Needs a Plan

You can't manage what you don't measure. Building owners that pursue energy-efficiency upgrades without a tailored, data-informed plan may be missing ways to reduce costs. A good plan requires accurate data on a building's current energy and carbon performance.

A number of scalable programs are now providing support targeted at helping owners get the right data, and using it to make cost-effective upgrade choices:

- BC Retrofit Accelerator
- Energize Vancouver
- Jump on a New Heat Pump
- Energy Save New West
- Better Homes BC
- Better Buildings BC
- BC Home Energy Planner

Figure 7 | Energy retrofits can save money—but not all upgrades offer the same return. Data from Clean Energy Canada shows how upgrading to efficient electric appliances can pay off over the long term[21]. Outcomes vary by building type and the specific retrofit choices made, but having the right data and a clear plan maximizes cost savings and emissions reductions.
Source: Clean Energy Canada[21]

	Baseline home	Mix of Gas and Electric Appliances	Full electrification
Detached homes	$261 monthly expense 0% GHG emissions reduction	+ $10 monthly expense - 58% GHG emissions reduction	- $60 monthly expense - 94% GHG emissions reduction
Apartment	$143 monthly expense 0% GHG emissions reduction	+ $10 monthly expense - 37% GHG emissions reduction	- $2 monthly expense - 92% GHG emissions reduction

WHAT IS WORKING ELSEWHERE?

- **Many jurisdictions** have programs to finance the up-front costs of energy upgrades with long-term stable repayments (e.g., on utility bills or property taxes). One type of this lending—called Property Assessed Clean Energy (PACE)—has supported nearly 400,000 retrofits and created over 35 billion dollars of economic activity in the US[22].

- **New York City**[23], **Seattle**[24], **Chicago**[25] **and dozens of other cities and states** require building owners to track and report energy use and emissions, while 11 US cities and 4 states have gone further and adopted building performance standards requiring reductions in energy use and/or emissions.

- **Quebec, Toronto and Montreal** are at different stages of developing reporting requirements and building performance standards for existing buildings.

BC Leaders in Energy and Carbon Reporting Requirements

City of Vancouver and **District of Saanich** have already passed formal reporting requirements, **City of Victoria** has approved a similar policy, and **City of Richmond** is exploring a potential approach with stakeholders.

City of Vancouver is the first city in Canada to introduce **limits on carbon emissions for certain types of buildings**. These jurisdictions use performance data to develop customized support programs to help owners meet the targets. For example, **Energize Vancouver** provides resources, training, and guidance to help regulated building owners in the city plan and implement upgrades that reduce emissions and save on energy.

For Many, the Lack of Cooling in Buildings Is Becoming a Safety Concern

- Climate projections show that residents in the Metro Vancouver region could experience **7 days over 35°C every year** by 2050 — and **25 days every year** by the 2080s (on average, based on humidex temperatures)[26].

- **The region's heat-vulnerable populations face the highest risks.** During the 2021 heat dome, 619 people died from heat in BC[27], of which approximately two-thirds were in the Metro Vancouver region[28]; 98% were at home, and most lacked access to cooling[27].

- While air conditioning use is growing, **access remains limited**: census data shows that from 2013 to 2021, the share of households with cooling rose from **13%** to **26%**, but is still **far below the national average of 64%**[29].

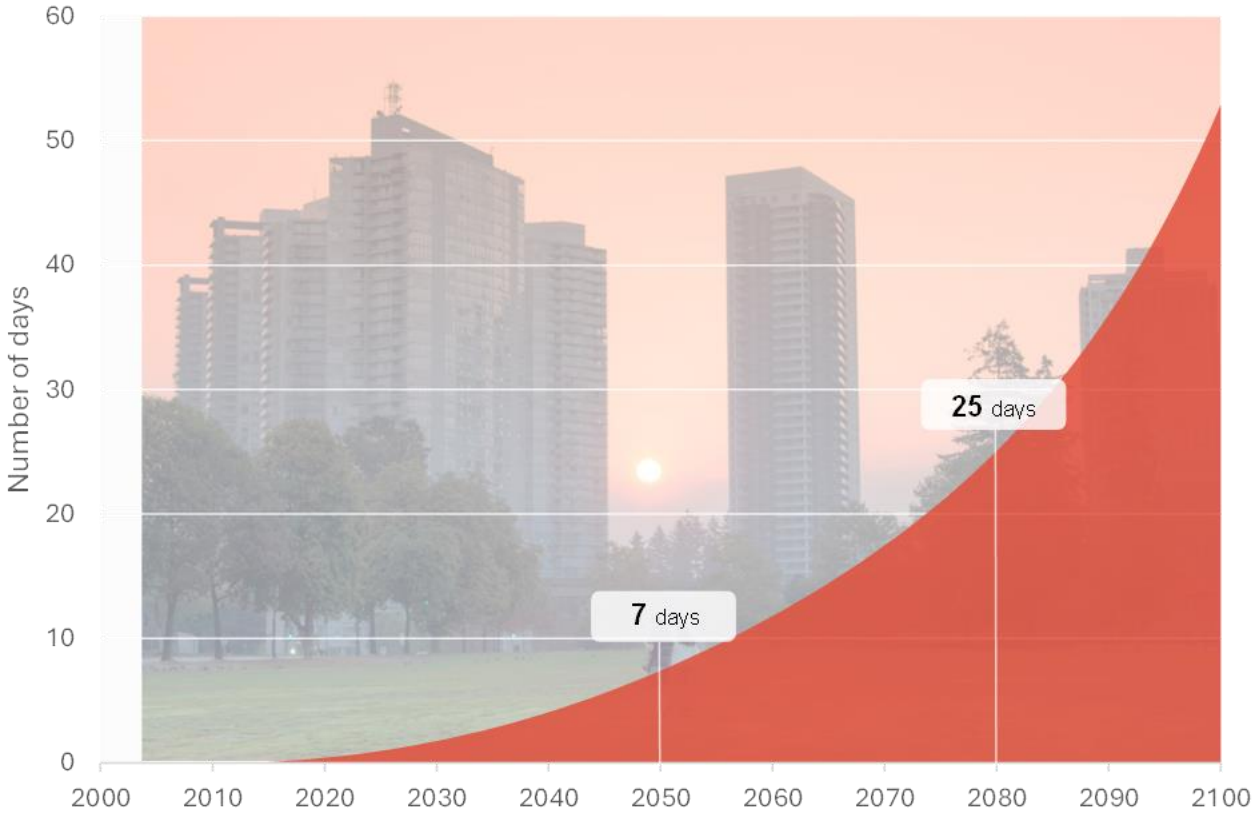
- **Policy is starting to address life safety**: BC requires new dwellings to maintain at least one living space (e.g., living room, bedroom) **below 26°C**, and Vancouver mandates active mechanical cooling in all new multi-unit residential buildings[30].

- BC Hydro is distributing over 28,000 free portable A/C units to medically vulnerable, low-income households[31].

- In a recent survey of food service workers in BC, **97% said they needed more protection from extreme weather**, with 77% reporting worsened physical health during these events, and 87% identifying extreme heat as their top extreme weather-related concern[32].

Figure 8 | The number of days that feel hotter than 35°C is expected to continue to increase in the Metro Vancouver region beyond the 2080s.

Source: ClimateData.ca[26].



Health and Equity Risks of Extreme Heat

- Extreme heat **increases the risk of heat exhaustion, heat stroke, and worsened chronic conditions**. Even moderate overheating impacts sleep, productivity, and mental health.
- **Workplace overheating raises occupational health risks**, reduces productivity, and increases physical strain.
- Lower-income and heat-vulnerable communities are more exposed to urban heat and **less able to afford cooling technologies, compounding health and safety risks**.

WHAT ARE THE RISKS TO PROGRESS?

- Many people are unable to make the decision to install cooling due to **legal and regulatory barriers**, especially renters and strata residents.
- Without **clear policy and funding pathways**, most of the region's existing buildings will struggle to meet future cooling needs and residents will suffer increasing health impacts.
- Building owners have limited access to **low-cost financing** to plan and implement efficient cooling upgrades, particularly in strata buildings.

WHAT IS WORKING ELSEWHERE?

- US Cities including **Phoenix, Dallas, New Orleans, Tucson** and **Chicago** have enacted cooling requirements to keep indoor temperatures below specified thresholds[33].
- **New Orleans' Healthy Homes Program** requires landlords to register and receive a certificate of compliance with minimum rental housing standards, including providing cooling to keep bedroom temperatures below 27°C[34].
- Paris, France operates **Europe's largest district cooling network** – called Climespace – that pipes cold water from the Seine River in a closed loop underground to cool large buildings in central districts[35].

Advancing Thermal Safety in Multi-Unit Buildings

Metro Vancouver is helping local governments tackle extreme heat risks in older multi-unit residential buildings (MURBs), many of which were designed without cooling systems. A new thermal safety toolkit outlines 31 recommended actions to improve resilience and protect residents' health by 2030.

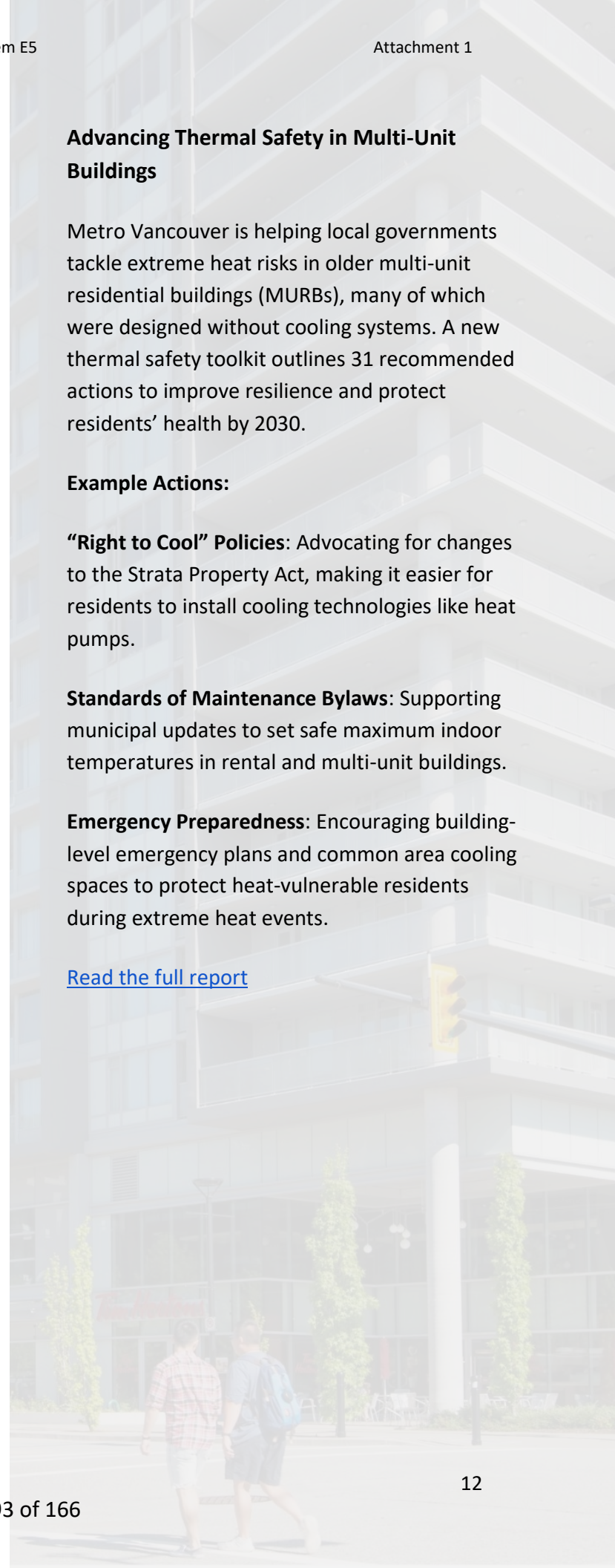
Example Actions:

"Right to Cool" Policies: Advocating for changes to the Strata Property Act, making it easier for residents to install cooling technologies like heat pumps.

Standards of Maintenance Bylaws: Supporting municipal updates to set safe maximum indoor temperatures in rental and multi-unit buildings.

Emergency Preparedness: Encouraging building-level emergency plans and common area cooling spaces to protect heat-vulnerable residents during extreme heat events.

Read the full report



REFERENCES

[1] Metro Vancouver. (2025). *Emissions Inventories and Forecasts*. https://metrovancouver.org/services/air-quality-climate-action/emission-inventories-and-forecasts.

[2] Government of British Columbia. 2024. *BC Best Practices Methodology for Quantifying Greenhouse Gas Emissions.* https://www2.gov.bc.ca/assets/gov/environment/climate-change/cng/methodology/2020-pso-methodology.pdf.

[3] Government of British Columbia. (2025). *BC Building, Plumbing, and Fire Code revisions*. https://www2.gov.bc.ca/gov/content/industry/construction-industry/building-codes-standards/bc-codes/errata-and-revisions.

[4] Government of British Columbia. (2021). *Zero Carbon Step Code*. Energy Step Code: Building Beyond the Standard. https://energystepcode.ca/zero-carbon/.

[5] Government of British Columbia. (2023, May 9). *Building code changes support B.C.'s zero-carbon targets*. BC Gov News. https://news.gov.bc.ca/releases/2023ENV0030-000653.

[6] Community Energy Association. (2025). *BC Community Climate Action Dashboard: Step Codes*. https://dashboard.communityenergy.ca/big-moves/step-codes/.

[7] BC Housing Research Centre. (2024). *Building Innovation Case Study: Does High Performance Construction Cost More?*. https://www.bchousing.org/sites/default/files/media/documents/Building-Innovation-Case-Study-Nov-2024.pdf.

[8] Zero Emissions Innovation Centre. (2024, October 10). *BC Building Industry Survey Results: Energy & Emissions Requirements*. https://zeic.ca/wp-content/uploads/2024/10/ZEIC-BCBuilding-Industry-Survey-Report.pdf.

[9] City of New York. (2021, December 21). *Mayor de Blasio Signs Landmark Bill to Ban Combustion of Fossil Fuels in New Buildings*. https://www.nyc.gov/office-of-the-mayor/news/852-21/mayor-de-blasio-signs-landmark-bill-ban-combustion-fossil-fuels-new-buildings.

[10] State of California. (2022, December 22). *2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings: For the 2022 Building Energy Efficiency Standards Title 24, Part 6, and Associated Administrative Regulations in Part 1*. California Energy Commission. https://www.energy.ca.gov/sites/default/files/2022-12/CEC-400-2022-010_CMF.pdf.

[11] The Danish Social and Housing Authority. *Building Regulations 2018*. https://www.bygningsreglementet.dk/. [Danish language source].

[12] Ministère de la Transition Écologique. (2024, January). *RE2020 Guide: Réglementation Environnementale: Éco-construire pour le confort de tous.* https://www.ecologie.gouv.fr/sites/default/files/documents/guide_re2020_version_janvier_2024.pdf. [French Language Source, Ministry of Ecological Transition].

[13] State of California. (2018). *CALGreen*. California Department of General Services: Building Standards Commission. https://www.dgs.ca.gov/bsc/calgreen.

[14] Government of British Columbia. (2025, May 5). *Province takes energy action to electrify economy, increase resilience*. BC Gov News. https://news.gov.bc.ca/releases/2025ECS0018-000412.

[15] The Pembina Institute. (n.d.). *Buildings*. https://www.pembina.org/programs/buildings

[16] Kennedy, M., & Frappé-Sénéclauze, T.P. (2021, July). *Canada's Renovation Wave: A plan for jobs and climate*. The Pembina Institute. https://www.pembina.org/reports/canadas-renovation-wave.pdf

[17] Metro Vancouver. (2025, February). *Metro Vancouver Housing Data Book*. https://metrovancouver.org/services/regional-planning/Documents/metro-vancouver-housing-data-book-2025.pdf#search=housing%20data%20book.

[18] Riva, M., Makasi, S.K., O'Sullivan, K.C., Das, R.R., Dufresne, P., Kaiser, D., & Breau S. (2023, February 8). Energy poverty: an overlooked determinant of health and climate resilience in Canada. *Canadian Journal of Public Health, 114*(3), 422-431. https://doi.org/10.17269/s41997-023-00741-0.

[19] George, S., Yuan, M., Loutfi, F., Reyes, J., Tesfamichael, M., Dolan, A., Hack, J., & Chen, J. (2025, February 25). *Sharing Electricity Across Borders Could Bolster Energy Security*. World Resources Institute. https://www.wri.org/insights/grid-interconnection-for-energy-security.

[20] Canadian Urban Sustainability Practitioners. (n.d.). *Energy Poverty and Equity Explorer: Housing and Demographics Theme*. https://energypoverty.ca/mappingtool/.

[21] Clean Energy Canada. (2025). *Opening the Door: Clean energy solutions can save households hundreds of dollars every month, but some Canadians still face upfront barriers to adoption. Governments at all levels can help*. https://cleanenergycanada.org/report/opening-the-door/.

[22] PACENation. (2019). *PACENation is the national nonprofit association that advocates for PACE financing*. https://www.pacenation.org/.

[23] City of New York. (2025). *Local Law 84: NYC Benchmarking Law*. NYC Buildings. https://www.nyc.gov/site/buildings/codes/ll84-benchmarking-law.page.

[24] City of Seattle. (2025). *Energy Benchmarking*. Seattle Office of Sustainability & Environment. https://www.seattle.gov/environment/climate-change/buildings-and-energy/energy-benchmarking.

[25] City of Chicago. (2025). *Chicago Energy Benchmarking Overview*. Office of the Mayor. https://www.chicago.gov/city/en/depts/mayor/supp_info/chicago-energy-benchmarking/ChicagoEnergyBenchmarkingOverview.html#Background.

[26] ClimateData.ca. (2025). *Annual Values for North Vancouver*. https://climatedata.ca/explore/location/?loc=JBFRV&location-select-temperature=HXmax40&location-select-precipitation=r1mm&location-select-other=allowance.

[27] British Columbia Coroners Service. (2022, June). *Extreme Heat and Human Mortality: A Review of Heat-Related Deaths in B.C. in Summer 2021*. Government of British Columbia. https://www2.gov.bc.ca/assets/gov/birth-adoption-death-marriage-and-divorce/deaths/coroners-service/death-review-panel/extreme_heat_death_review_panel_report.pdf.

[28] Henderson, S. B., Mclean, K. E., Lee, M. J., & Kosatsky, T. (2022, January 19). Analysis of community deaths during the catastrophic 2021 heat dome: Early evidence to inform the public health response during subsequent events in greater Vancouver, Canada. *Environmental Epidemiology*, *6*(1), e189, February 2022. https://doi.org/10.1097/EE9.0000000000000189.

[29] Statistics Canada. (2023, April 24). *Air Conditioners*. [Table 38-10-0019-01]. Government of Canada. https://doi.org/10.25318/3810001901-eng.

[30] Building and Safety Standards Branch. (2024, April 19). *Protection from Overheating in Dwelling Units*. Government of British Columbia. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/construction-industry/building-codes-and-standards/bulletins/2024-code/b24-08_overheating.pdf.

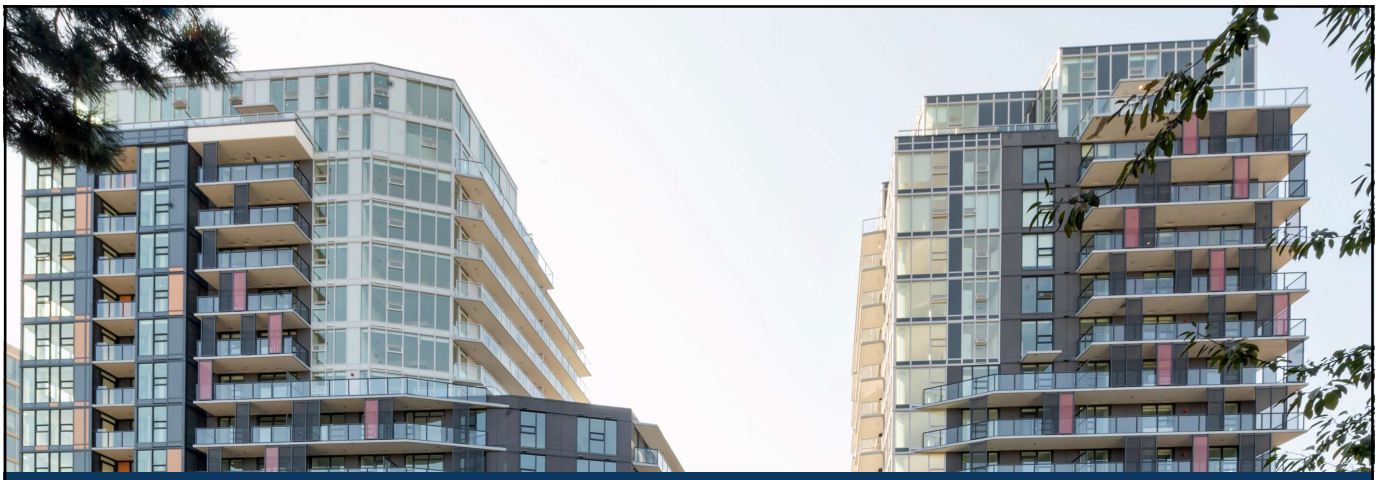
[31] Government of British Columbia. (2024). *Province taking action to help people stay safe, cool*. BC Gov News. https://news.gov.bc.ca/releases/2024HLTH0028-000843#:~:text=Through%20%2420%20million%20in%20new,AC%20units%20throughout%20the%20province

[32] Worker Solidarity Network. (2023). *Can't Stand the Heat? Get out of the Kitchen!: The Impact of extreme weather events on food service workers in British Columbia*. https://workersolidarity.ca/wp-content/uploads/2023/05/Climate-and-Labour-Report-WSN-2023.pdf.

[33] Lawton, B. (2025, March 20). *Home Cooling Policies Can Combat Health Impacts of Extreme Heat, But Should Be Paired with Strategies to Reduce Unintended Consequences*. The Network for Public Health Law. https://www.networkforphl.org/news-insights/home-cooling-policies-can-combat-health-impacts-of-extreme-heat-but-should-be-paired-with-strategies-to-reduce-unintended-consequences/#:~:text=Some%20cities%20are%20helping%20offset,if%20cooled%20by%20evaporative%20cooling.

[34] The City of New Orleans. (2025). *Healthy Homes Program*. Healthy Homes Administration. https://nola.gov/next/healthy-homes/home/.

[35] World Economic Forum. (2023, September 12). *Paris is keeping buildings cool with river water, instead of air conditioning.* https://www.weforum.org/stories/2023/09/paris-seine-water-cool-buildings/.



Trends in Emissions from Buildings

Erik Blair
Senior Planner, Regional Climate Action Policy

Margaryta Pustova
Senior Policy and Planning Analyst

Air Quality and Climate Committee - July 4 2025
76824513

metrovancouver

1

BUILDING EMISSIONS ARE STILL INCREASING

	Residential buildings	Commercial and small-medium industrial buildings
Total GHG emissions	+11.5% 2010 – 2022 change*	+20.7% 2010 – 2022 change*
Per-capita GHG emissions	-4.3% 2010 – 2022 change*	
Total nitrogen oxides (NOx) emissions	+7.6% 2010 – 2020 change*	+17.3% 2010 – 2020 change*

Source: Metro Vancouver 2022 Emissions Inventory

* GHG emissions are reported annually (latest: 2022), while health-harming air pollutants, such as NOx, are reported every five years (latest: 2020)

2

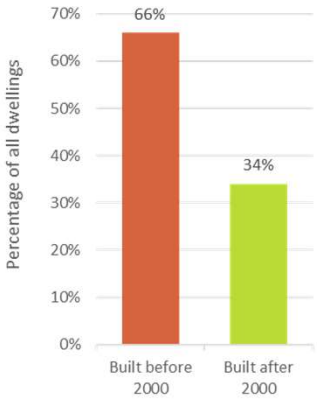
STRONGER CODES ARE MAKING NEW BUILDINGS CLEANER AND MORE EFFICIENT

Source: BC Community Climate Action Dashboard

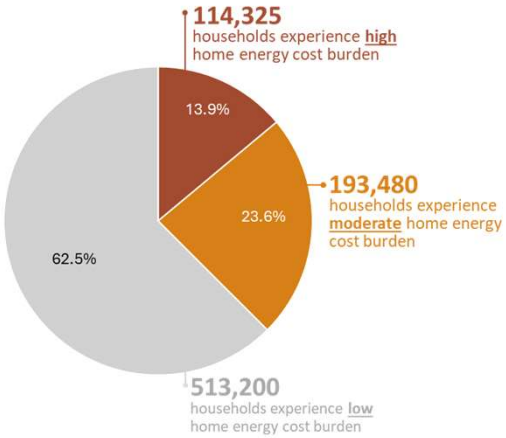
- With Energy Step Code changes, buildings are now at least 20% more energy efficient
- Starting this year, all new buildings meet Step 1 of Zero Carbon Step Code
- By 2030, requirement to strongest level of Zero Carbon Step Code
- 46% of builders surveyed already meeting 2030 requirements, 44% more will be ready in time.

3

UPGRADES ARE NEEDED TO PROTECT RESIDENTS AND REDUCE EMISSIONS IN EXISTING BUILDINGS



Source: Metro Vancouver Housing Data Book



Source: Canadian Urban Sustainability Practitioners Energy Poverty Explorer

4

EVERY BUILDING NEEDS A PLAN FOR UPGRADES

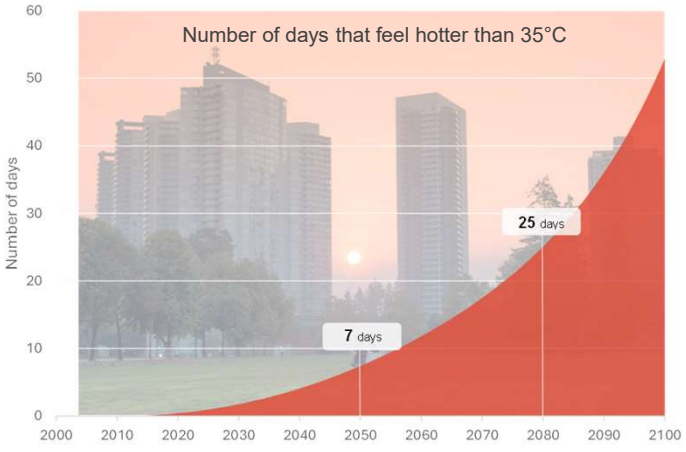
	Baseline home	Mix of Gas and Electric Appliances	Full electrification
Detached homes	$261 monthly expense 0% GHG emissions reduction	+ $10 monthly expense - 58% GHG emissions reduction	- $60 monthly expense - 94% GHG emissions reduction
Apartment	$143 monthly expense 0% GHG emissions reduction	+ $10 monthly expense - 37% GHG emissions reduction	- $2 monthly expense - 92% GHG emissions reduction

Source: Clean Energy Canada

5

FOR MANY, THE LACK OF COOLING IN BUILDINGS IS BECOMING A SAFETY CONCERN

- While air conditioning use is growing, **access remains limited**
- **Heat-vulnerable residents face the highest risks.** 619 people died from heat in BC in 2021, two-thirds were in the Metro Vancouver region.
- New toolkit to improve **thermal safety in multi-unit buildings**



Source: ClimateData.ca

6

Port Moody

Questions

metrovancouver
Together we make our region strong

7

7

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Conor Reynolds, Director, Air Quality and Climate Action Services

Date: June 6, 2025 Meeting Date: July 4, 2025

Subject: **2025 Update on Regional District Sustainability Innovation Fund Projects – Air Quality and Climate Action**

RECOMMENDATION

That the MVRD Board receive for information the report dated June 6, 2025, titled "2025 Update on Regional District Sustainability Innovation Fund Projects – Air Quality and Climate Action."

EXECUTIVE SUMMARY

This report provides an update on 17 Air Quality and Climate Action projects that were approved for funding between 2019 and 2024 under the Regional District Sustainability Innovation Fund and are currently in-progress or have been completed or discontinued since the last update to the designated Standing Committee.

Projects funded by the Sustainability Innovation Fund support regional sustainability, protect the environment, advance resilience, and continuously improve service delivery by allowing Metro Vancouver to explore and implement innovative approaches, and respond to emerging issues and evolving best practices. Of the 17 projects described in this report, five have been recently completed, one has been discontinued, and 11 are in progress, with six nearing completion. Recently completed projects include: an interactive, online toolkit to support climate literacy; a best practices guide with alternatives to open burning for managing agricultural waste; a database of building characteristics to support GHG emissions reductions; and an evaluation of new "hyperlocal" technologies for air quality monitoring.

PURPOSE

To provide an update on Air Quality and Climate Action projects funded under the Regional District Sustainability Innovation Fund that are currently in progress or have been completed or discontinued since the last annual update to the designated Standing Committee.

BACKGROUND

The Sustainability Innovation Fund program (Reference 1) supports regional sustainability and drives continuous improvement in the delivery of Metro Vancouver services by reducing emissions, protecting the environment, and advancing resilience. The Regional District, Water, and Liquid Waste Sustainability Innovation Funds have been in place since October 29, 2004, when the GVRD, GVWD, and GVS&DD Boards, respectively, approved their creation. In 2014, policies to guide and manage the Sustainability Innovation Funds were adopted by the respective Boards, with amendments in 2016 and 2021. The Policies require that the designated Standing Committee be kept updated on the deliverables, outcomes, and measurable benefits of the projects that have

received funding. Projects funded wholly or in part by the Sustainability Innovation Fund program have been undertaken by Metro Vancouver in coordination with project partners since 2015. Annually, Metro Vancouver staff submit applications for project funding, which are approved by the respective Standing Committees and Boards. The amount dispersed from the Sustainability Innovation Funds in any year is at the discretion of the respective Boards and depends on the merit of proposals submitted. Additionally, many projects amplify the financial contributions from the Sustainability Innovation Fund by leveraging external funding through partnerships, such as with the region's academic institutions.

At its February 21, 2025 meeting, the MVRD Board re-affirmed support for the Sustainability Innovation Fund program. The MVRD Board is responsible for overseeing the Regional District Sustainability Innovation Fund and reviewing and approving funding for projects from the Regional District functions. The Air Quality and Climate Committee is responsible for reviewing Regional District Sustainability Innovation Fund applications that fall within the Terms of Reference of the Committee and making recommendations to the MVRD Board, and also receives updates on in progress or recently completed projects.

STATUS OF REGIONAL DISTRICT SUSTAINABILITY INNOVATION PROJECTS – 2025 UPDATE

From 2015 to 2024, the Regional District Sustainability Innovation Fund has provided funding to a total of 54 projects. Of these projects, 28 have been completed, 22 are in progress and four have been discontinued. Of the 22 projects that are in progress, 10 are nearing completion, and are expected to be substantially complete by the end of 2025.

Of the 54 total projects funded by the Regional District Sustainability Innovation Fund, 26 are Air Quality and Climate Action projects. This report provides an update on the 17 Air Quality and Climate Action projects that are in-progress or that have not yet been reported as complete or discontinued, and other Regional District project updates are being provided to the relevant Standing Committee (Housing Committee, Regional Parks Committee, and Regional Planning Committee). Table 1 provides budgetary information and project status. A detailed update on the status of each of the 17 projects, including a summary of the work, trajectory to completion, project outcomes to date, and impact for the organization and/or region, can be found in Attachment 1.

Table 1. Summary of Regional District Sustainability Innovation Fund Projects - Air Quality and Climate Action - 2025 Update

Project	Total Funding Approved	Estimated Spent (as of March 31, 2025)	Status
2019 Approval Year			
Climate Literacy Modules	$160,000	$109,000	**Complete**
2020 Approval Year			
Preventing Smoke Emissions from Agricultural Waste Management	$140,000	$125,900	**Complete**
Mobile Monitoring of Fugitive and Other Industrial Air Emissions with "Flying Labs"	$100,000	$100,000	Nearing Completion

Project	Total Funding Approved	Estimated Spent (as of March 31, 2025)	Status
2021 Approval Year			
Assessment of Carbon Capture Technology in the Metro Vancouver Region	$200,000	$164,000	Nearing Completion
Lights, Camera, Climate Action!	$200,000	$54,200	In Progress
Sharing Data for Zero Emission Buildings	$200,000	$50,000	**Complete**
Responding to the Climate Emergency: Enhanced Stakeholder Engagement	$200,000	$80,200	In Progress
2022 Approval Year			
Integrating Greenhouse Gas Requirements into Air Emission Permits and Regulations	$150,000	$150,000	**Complete**
Taking out the Trash: Transitioning to Zero-Carbon Heavy Duty Vehicles through Waste Collection Trucks	$400,000	$49,400	In Progress
Large Building Retrofit Accelerator	$850,000	$850,000	Nearing Completion
Driving Down Emissions: Developing a Regional Policy to Reduce Transportation Emissions	$455,000	$455,000	Nearing Completion
Smart Cities: Hyperlocal Air Quality Monitoring	$250,000	$45,500	**Complete**
2023 Approval Year			
AirCnC: Cool 'n' Clean Air Centres	$200,000	$0	Discontinued
Metro Vancouver Events Sustainability Audit	$80,000	$15,300	Nearing Completion
Revving Up the Shift to Green Machines	$240,000	$23,400	Nearing Completion
2024 Approval Year			
Comprehensive Assessment and Regulation of Expanded Group of Greenhouse Gases (CARE3G)	$230,000	$0	In Progress
Feasibility Study for a Pilot Microgrid Project in the Metro Vancouver Region	$200,000	$0	In Progress
TOTAL	$4,255,000	$2,271,900	

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The projects summarized in this report received funding from the Regional District Sustainability Innovation Fund as approved by the MVRD Board between 2019 and 2024. Disbursals of funds were made in accordance with the related Policy that governs the use and management of the Fund.

Table 1 above outlines the funding approved and the estimated amount spent to March 31, 2025 for each project.

As of December 31, 2024, the estimated reserve balance of the Regional District Sustainability Innovation Fund was $10.7 million. Of this, approximately $6.1 million in Board-approved funding is committed to be spent on currently in-progress projects across the Regional District functional areas with $1.4 million of that committed to current Air Quality and Climate Action projects. Any unspent funds from completed or discontinued projects are maintained in the Regional District Sustainability Innovation Fund reserve.

CONCLUSION

This report provides an update on 17 Air Quality and Climate Action projects funded under the Regional District Sustainability Innovation Fund between 2019 and 2024 that are currently in-progress or have been completed or discontinued since the last update to the designated Standing Committee. The results and findings from these projects will be used to drive continuous improvement in the delivery of Metro Vancouver's services.

ATTACHMENTS

1. "2025 Status Update on Current Air Quality and Climate Action Sustainability Innovation Fund Projects", dated June 6, 2025.

REFERENCE

1. Metro Vancouver. (2025). *Sustainability Innovation Fund*. Retrieved from https://metrovancouver.org/about-us/sustainability-innovation-fund.

74940937

2025 Status Update on Current Air Quality and Climate Action Sustainability Innovation Fund Projects

2019 APPROVAL YEAR

Climate Literacy Modules
Status: **Complete**
Years: 2019 – 2023

Overview
Improving residents' climate literacy is a fundamental step to increasing everyone's ability and confidence to engage in solution-oriented conversations. Research indicates that residents have a high level of concern about climate change, but low knowledge and confidence in speaking about solutions. This project created a toolkit to support climate literacy, for use by youth, residents, First Nations, Metro Vancouver and member jurisdiction staff, and other interested parties. The output is a building block for knowledge, in the form of online climate learning modules which explore topics such as combining indigenous knowledge and western science in climate solutions, climate action terminology (e.g., mitigation and adaptation), land use decisions, and climate outcomes.

Outcomes
- The platform was launched in 2022 on Earth Day. A link to the Climate Literacy page of the Metro Vancouver website is included as Reference 1.
- Staff promoted the platform for two six-week periods each year, timed around the start of the school terms. Promotions use video and images from the platform to attract thousands of visitors to the site.
- Five local climate action modules feature climate outcomes related to food scraps recycling, walkable communities, heating buildings, managing storm water, and consumer choices.
- Staff continue to track uptake of the modules. Content is revised regularly, and the toolkit is designed to accommodate new action modules in future.
- Some organizations have 'adopted' the platform as a staff learning tool.

2020 APPROVAL YEAR

Preventing Smoke Emissions from Agricultural Waste Management
Status: **Complete**
Years: 2020 – 2023

Overview
Open burning of vegetative debris is a source of air contaminants harmful to human health and the environment. This project was initiated to study alternatives to open burning for managing agricultural vegetative debris in the Metro Vancouver region. The study findings identified barriers to using alternative methods of vegetative debris disposal for farmers in the region, which included cost, complexity, practical feasibility, crop disease considerations, and equipment availability.

Outcomes

A multi-language Best Practices Guide has been developed for farm operators in Metro Vancouver that provides practical and easy-to-use on information on alternatives to open burning. The guide is available on the Metro Vancouver website in English, Punjabi, Traditional Chinese, and Simplified Chinese (References 2, 3, 4, and 5, respectively). The guide is tailored toward operators who are involved in crop pruning, field renovations, and land or brush clearing on farmland.

- The local agriculture sector, including farmers and representatives of farming associations, educational institutions, and BC Ministry of Agriculture, Food, and Fisheries were involved and provided input in the development of the guide.
- The guide is being used as an educational and promotional resource for the new *Metro Vancouver Regional District Open Burning Emission Regulation Bylaw 1355, 2022* which includes requirements to consider the use of alternatives to open burning of vegetative debris.

Mobile Monitoring of Fugitive and Other Industrial Air Emissions with "Flying Labs"

Status: Nearing Completion

Years: 2020 –

Overview

The objective of this mobile air emissions monitoring project was originally to assess the feasibility of using small, drone-mounted sensors to measure air emissions that are otherwise difficult to monitor, to support compliance with Metro Vancouver's bylaws, regulations, and permits. The project objective was subsequently updated to assess the feasibility of small, ground-oriented sensors.

Outcomes to Date

- Flights with drones carrying small sensors were conducted in three locations in the Metro Vancouver region in the summer of 2021. Results revealed practicality issues in using drone-based monitoring platforms and challenges in collecting data of sufficient quality.
- At its March 11, 2022 meeting, the Climate Action Committee received a report titled "Mobile Air Quality Monitoring Using Drone-Based Sensors" describing the test flight results and recommended next steps. The Committee approved an alternative approach to test small sensors on other ground-oriented mobile platforms to address some of the issues and limitations identified during test flights.
- In 2023 and 2024, staff collaborated with academic partners at the BC Centre for Disease Control to deploy and evaluate multiple small air sensor instruments mounted on a ground-oriented, mobile monitoring platform.

Next Steps

This year, staff and academic partners will finalize the evaluation and report on the findings. Once complete, this project will assess the effectiveness of ground-oriented mobile monitoring platforms as an additional tool to assess air quality impacts at the neighborhood scale and to support compliance with Metro Vancouver's air quality bylaws, regulations, and permits.

2021 APPROVAL YEAR

Assessment of Carbon Capture Technology in the Metro Vancouver Region
Status: Nearing Completion
Years: 2021 –

Overview
This project aims to support early identification of the applicable technological approaches for capturing and removing carbon dioxide (CO_2) from industrial flue gas streams in large industrial facilities in the Metro Vancouver region, and storing the collected CO_2 in a way that prevents its release into the atmosphere.

Outcomes to Date
- Completed in 2023, Phase 1 of the project included an evaluation of applicable technological approaches for capturing and removing carbon dioxide (CO_2) from industrial flue gas streams in large industrial facilities that release over 50,000 tonnes of CO_2 per year in the Metro Vancouver region.
- The study noted that a number of facilities in the Metro Vancouver region may be suitable for CO_2 capture, and highlighted the need for further evaluation of site-specific factors, such as potential costs, availability of adequate space and utilities (e.g., energy source, water supply), and the ability to integrate with existing operations. Potential permanent geological CO_2 storage options were identified and evaluated, including associated transportation options and any potential risks and benefits.

Next Steps
- Led by Metro Vancouver's Solid Waste Services, a subsequent study using findings from Phase 1 to further assess CO_2 capture, transportation, utilization and storage options specific to the Waste-to-Energy Facility is under way. This part of the work looks at requirements, costs, and other conceptual design details (e.g., technology, space, energy, and project delivery options) for capture of all CO_2 emissions from the facility. The Solid Waste project is anticipated to be completed by the end of 2025.

Lights, Camera, Climate Action!
Status: In Progress
Years: 2021 –

Overview
The purpose of this project is to provide recommendations for alternative clean and modular power sources to reduce the use of portable diesel generators currently used extensively in the film industry. This project is exploring alternatives that reduce greenhouse gas (GHG) emissions and ambient noise, improve air quality, and provide the industry with viable alternatives to diesel that fulfill power requirements, and are cost effective.

Outcomes to Date
- A technical feasibility study has been undertaken on current energy use of the film industry, a preliminary assessment of possible overlap with related user groups (e.g., food trucks, events,

and construction), film production energy use data collection and a compilation of high frequency film site locations in Metro Vancouver. The report notes Metro Vancouver's Clean Energy Discounted Rate for filming fees already exists and incentivizes film production companies to use cleaner technology alternatives such as electric portable generators.

Next Steps

- Continue to assess the feasibility of installing a permanent clean power kiosk at Capilano River Regional Park (Cleveland Dam) to provide the film industry (and other potential users) the opportunity to connect directly to a permanent power source, thereby eliminating the need for portable power generators at the selected site.
- Staff are working with the Creative BC's Reel Green™ initiative (Reference 6) to ensure any installation would meet the needs of the film industry. Reel Green™ is an initiative of the BC Film Commission, dedicated to uniting Canada's motion picture industry to reduce environmental impacts and improve sustainable production practices.
- Metro Vancouver is also in discussions with BC Hydro on project coordination that could see the installation of the kiosk take place as part of a project to install BC Hydro funded and operated public EV charging stations at the park. There are potential cost sharing and operation efficiencies benefits in co-location and coordination of these upgrades. Should Metro Vancouver and BC Hydro reach an agreement, it is expected that the installation would be completed in 2026.

Sharing Data for Zero Emission Buildings
Status: **Complete**
Years: 2021 – 2024

Overview

The purpose of the Sharing Data for Zero Emission Buildings (SDZEB) project is to create a database that estimates the building characteristics and GHG emissions of detached homes, row homes, and townhomes at the building level. This database is a foundational tool needed to design effective GHG reduction policies and retrofit programs in the region.

An additional $168,000 in partner funding has been leveraged from external agencies for this project.

Outcomes to Date

- Phase One – Development of the database is complete. The building-by-building database includes information about each home and suggestions on how to improve its emissions performance. The database contains key building characteristics alongside estimated energy use and GHG emissions for every single detached home in the Metro Vancouver region. The database also contains cost estimates for various retrofit packages, stratified by groupings of homes with similar retrofit opportunities.
    - Partnering municipalities (including the City of Vancouver and Township of Langley) are using the retrofit packages from phase one to develop and pilot retrofit support and incentive programs. Staff and the project partners contributed learnings from Phase One to provide insights to the Province of BC, who are set to launch the BC Home

Energy Planner (Reference 7) in 2025 after an 18 month pilot period. The BC Home Energy Planner uses a similar methodology to develop a province-wide database of home energy ratings that will be provided to homeowners and tenants at no cost.

- Phase Two of this project was undertaken and completed in Q2 2024. This phase integrated equity-related datasets into the existing database, focusing on vulnerability to heat and air quality events and affordability concerns. By layering emissions data with these new metrics, staff identified homes that are likely to be highly emitting, have a strong business case for retrofitting, and may house vulnerable residents who could benefit from financial support tools. These findings refine the Phase 1 results to help inform future municipal, regional, and provincial climate policies and programs that prioritize affordability and equity.

Responding to the Climate Emergency: Enhanced Stakeholder Engagement
Status: In Progress
Years: 2021 –

Overview
In response to the climate emergency, staff identified the need to generate new communication tools based in research and best practices. Staff have been implementing actions outlined in Metro Vancouver's *Climate 2050 Engagement and Public Education Strategy*, which provides a clear approach for robust engagement, collaboration with others, and broad public support for climate action in this region.

Outcomes to Date
- Staff are incorporating social science research learnings, best practices, and innovative delivery methods to broaden the reach of climate engagement and outreach.
- Engagement with over 500 organizations for the development of the *Climate 2050* Roadmaps and climate action in various management plans and regional policies.
- Engagement with over 200 organizations on distinct climate actions.
- Central agenda item in meetings of Metro Vancouver's Youth and Education Advisory Panel (YEAP) to introduce climate priorities and invite input on how climate intersects with human health and affordability.
- Workshop with in-region First Nations to listen to perspectives on Climate and Human Health and Wellbeing.
- Over 100 estimated hours of direct delivery through public programs and over 10,000 visits to the Climate Literacy online learning program.
- 1000s of registrations for twice yearly Climate Action Dialogue series to increase public knowledge and build support for local climate action.

Research, collaboration and dialogue are underway to better engage on equity considerations, improve youth participation and more meaningfully incorporate First Nations perspectives into all climate action.

Next Steps
- Continue delivery of Climate Action Dialogues including upcoming session on resilience.
- Continue to promote and grow the Climate Literacy online learning tool.

- Continue to adapt and evolve climate outreach using best practices and research -driven content.
- Continue hosting two Communities of Practice focused on climate engagement; one with municipal staff and the other with non-government organization staff.

This SIF project was designed to deliver a suite of new and innovative approaches to engagement and outreach in the climate sphere, as described in the *Climate 2050 Engagement and Public Education Strategy.* Now that these materials are generated and launched, staff will continue to deliver those that are most successful within the existing program budget. Final components include an outreach display for community events and a framework for best practices in climate engagement given the national and global interest in affordability and changing political climate. The full suite of innovative components are anticipated to be in place, and to roll into regular program delivery, by 2026.

2022 APPROVAL YEAR

Integrating Greenhouse Gas Requirements into Air Emission Permits and Regulations
Status: **Complete**
Years: 2022 –2024

Overview
The project aims to better understand the trajectory of industrial GHG emissions in the region – given anticipated technical, economic, and external policy factors – and to identify well-suited policy solutions that Metro Vancouver and other levels of government can employ to accelerate progress towards the region's 2050 carbon neutrality goal.

Outcomes
The first phase of the project involved an in-depth assessment of existing regional, national, and international policies most likely to impact Metro Vancouver's industrial GHG emissions, as well as development of an energy-economic model that illustrates how different policies may further influence the GHG emissions trajectory of the region. A key consideration for this project included an understanding of Metro Vancouver's delegated authority for managing and controlling the discharge of air contaminants.

Based on an assessment of policy examples across jurisdictions, the consultant team identified policy mechanisms and further assessed their applicability to Metro Vancouver based on four criteria (Metro Vancouver authority to implement, GHG reduction capacity, financial cost effectiveness, and ease of implementation). As a result of this analysis, policy options were identified for Metro Vancouver to close the remaining emissions gap to net-zero, and evaluation of the appropriate costs and benefits.

While the project provided important insights into future policy actions, additional work will be needed to determine the path for future policies. Areas for future research identified in this study are:

- Detailed policy design: This study provided a criteria-based examination of potential Metro Vancouver GHG policies, all of which would have their own unique strengths, weaknesses,

and risks. This project is an initial step to help inform Metro Vancouver's decision-making process on emissions reduction policy tools. A detailed policy design would allow for more assessment of emissions reductions and associated costs.
- Analysis of facility-specific barriers and costing: Metro Vancouver's industrial GHG emissions are unique in that more than 80% of emissions from goods-producing industries come from three facilities. Identification of facility-specific design constraints could improve estimates of decarbonization costs.
- Economic impact analysis: Understanding the economic impacts of specific policies, with a focus on the competitiveness of emissions-intensive, trade exposed industries, requires detailed policy specification is a potential area for future work.

Taking out the Trash: Transitioning to Zero-Carbon Heavy Duty Vehicles through Waste Collection Trucks
Status: In Progress
Years: 2022 –

Overview
This project will identify ways to expedite the transition to zero-carbon emission trucks used in the curbside collection of municipal solid waste. Metro Vancouver is collaborating with member municipalities on this project.

Outcomes to Date
- The project's first phase, completed in April 2024, identified opportunities for emissions reduction in waste collection trucks and developed a business case for viable electric technologies. Interest in future hydrogen technologies was also identified. Challenges and opportunities were discussed in a workshop with municipal staff, Metro Vancouver representatives, hauling contractors, and solid waste facility operators.
- This research led to an associated project funded by Liquid Waste Services and Solid Waste Services to explore accelerating the transition to zero-carbon trucks for long-distance solid and liquid waste residuals hauling. These hauling operations contributed an estimated 30% of Metro Vancouver's corporate GHG emissions in 2020.

Next Steps
Staff are working with staff from member municipalities on a practical assessment of vehicle performance to refine the business case developed in the first phase. Implementation of the project is expected to continue into early 2027.

Large Building Retrofit Accelerator
Status: Nearing Completion
Date: 2022 –

Overview
The purpose of this project is to develop a Large Building Retrofit Accelerator for the Metro Vancouver region—envisioned as a one-stop resource hub and concierge service to support building owners in decarbonizing existing buildings. Through a successful partnership with the Zero

Emissions Innovation Centre (ZEIC), the project has now advanced to implementation. Key objectives of the project include:

1. Conducting a gap analysis to identify needs and opportunities for building owner support;
2. Scoping and co-developing program offerings with input from an advisory committee; and
3. Developing a funding and finance model for long-term program delivery.

Outcomes to Date

The BC Retrofit Accelerator (BCRA) has been designed and launched to administer various programs focused on supporting building owners in overcoming challenges to reducing GHG emissions in commercial, institutional, and residential buildings. Four concierge-style retrofit support programs are now operational across BC:

- **Market Rental Housing (Rental Apartment Retrofit Accelerator (RARA) Program)** – delivered by Landlord BC
- **Commercial Buildings (Decarb Accelerator)** – delivered by Building Owners and Manager's Association of BC
- **Non-Profit Housing** – delivered by BC Non-Profit Housing Association and Aboriginal Housing Management Association
- **Strata MURBs (Strata Energy Advisor Program)** – delivered by ZEIC

These programs provide tailored retrofit advice and offer partial or full funding for decarbonization roadmaps and design studies.

This project has received over **$15 million** in combined federal and philanthropic funding (2024–2027), accelerating program development. Advisory and sector working groups composed of municipal, utility, and non-profit representatives have played a critical role in shaping program development. Metro Vancouver continues to play a central role in these committees, ensuring regional priorities are represented and integrated.

Next Steps

The final phase of this Regional District Sustainability Innovation Fund project agreement with ZEIC includes the following deliverables for 2025:

- Direct delivery of the Strata Energy Advisor Program to support decarbonization planning for strata-owned buildings;
- Continuation of advisory committees and working groups to support the evolution of the BCRA;
- Ongoing collaboration with delivery partners including BOMA BC, LandlordBC, BC Non-Profit Housing Association, and Aboriginal Management Housing Association;
- Support for growing and strengthening the BCRA's funding and financing model;
- Research and integration of strategies to reduce financial barriers to retrofits.

Metro Vancouver staff will continue to work with ZEIC, member jurisdictions and other partners to grow the BCRA's scope and offerings to meet shared regional objectives for existing building decarbonization.

Driving Down Emissions: Developing a Regional Policy to Reduce Transportation Emissions
Status: Nearing Completion
Years: 2022 –

Overview
Light-duty vehicles (e.g., cars, light trucks, SUVs) are the largest source of GHG emissions in the region, at about 35%. Solutions exist to reduce these emissions, including supporting low or zero emission modes of transport (e.g., walking, rolling, biking and public transit), switching to zero emission vehicles, and choosing urban design that supports reduced driving. The aim of this project is to evaluate policies to reduce GHG emissions from light-duty vehicles, targeting a 65% reduction by 2030, from 2010 levels. The project supports actions in the *Climate 2050 Transportation Roadmap*, the *Clean Air Plan*, *Metro 2050* and TransLink's *Transport 2050*.

An additional $136,000 in partner funding has been leveraged from external agencies for this project.

Outcomes to Date
Metro Vancouver is working with TransLink and consultants to undertake this technical research project. The team is conducting technical research and analysis of a range of policy options, and researching public attitudes towards those policies. Policy analysis considers equity, fairness and affordability. The focus of the policies under consideration is to shift trips to low or zero emission modes and accelerate the transition to electric and other zero emission vehicles. Both supportive and regulatory policies are being evaluated.

Next Steps
The project team will incorporate project findings into future policy recommendations to Metro Vancouver and TransLink decision makers.

Smart Cities: Hyperlocal Air Quality Monitoring
Status: Complete
Years: 2022 – 2025

Overview
This project aimed to use small air quality monitoring sensor technology to create a dense, neighbourhood-specific air quality monitoring network. The project supports Metro Vancouver's ongoing air quality monitoring programs, including the regional air quality monitoring network, and has led to a better understanding of how small sensor technology can be integrated into existing air quality monitoring. After completion of a research study, staff have determined that work can begin immediately to use these sensors in normal operations rather than create a pilot study. This will provide more flexibility in the use and deployment of these sensors.

Outcomes
- A study was completed which examined existing hyperlocal air quality networks around the world, and develop recommendations for suitable monitoring technology, monitoring network

design and methodology, and the identification of neighbourhoods in the region to potentially deploy this network.

- Metro Vancouver has received, at no cost, 50 small sensors from federal partners at the National Air Pollution Surveillance Program (NAPS). NAPS has been working with a Canadian company that is developing small sensors for urban monitoring networks through funding from Innovative Solutions Canada (ISC).

Next Steps

The pilot network that was originally proposed will not be set up, because these sensors are ready to be integrated into regular operation of the existing regulatory ambient air quality monitoring network. These sensors will supplement existing measurements and Metro Vancouver staff will continue to collaborate with Vancouver Coastal Health, Fraser Health, and member jurisdictions to identify suitable locations for additional small sensor monitoring.

2023 APPROVAL YEAR

AirCnC: Cool 'n' Clean Air Centres

Status: Discontinued
Years: 2023

Overview

This project aimed to develop a guidance document for member jurisdictions to implement cool and clean air centres during extreme heat and wildfire events. After careful consideration of available research, resource capacity, and jurisdictional roles, staff decided to discontinue the AirCnC project as a Metro Vancouver-led initiative. Staff will seek opportunities to support other agencies to pursue the project's objectives, while focusing on opportunities for cooling in residential buildings, together with measures to reduce building emissions.

Outcomes

Staff collaborated with a transdisciplinary cohort of PhD students at UBC to complete the first tasks for the project. They created a report on best practices and local needs for cool and clean air centres in Metro Vancouver, which has been shared with project partners and interested parties. The students were supported by UBC and subsequent tasks were developed internally. Accordingly, no Sustainability Innovation Fund funds were used. The total funding amount, $200,000, will be returned to the Fund.

Metro Vancouver Events Sustainability Audit

Status: Nearing Completion
Years: 2023 –

Overview

The project has been developing a methodology and process to fully understand the carbon footprint of the range of events Metro Vancouver conducts. These events range from simple media events and public consultations to large scale public events such as the PNE activation and the Zero Waste conference.

This event production requires the participation of multiple project and production partners in the delivery of the event itself and the ancillary services required to support the event's production. As a result, the sustainability impacts are varied and interconnected.

Outcomes to Date

- The auditing team has been working closely to define and map out three key areas of event production that will be used to develop strategies to minimize our event footprint:
    - Automation and Human Factor
    - Data Collection and Engagement
    - Organizational Framework
- Identifying the key metrics to be gathered and developing workflows to gather these metrics was completed In May of 2024 and metrics were gathered throughout 2024 as well as development of an online tool to enable staff to track equipment, locations, and calculate potential carbon emissions associated with events.

Next Steps

The final phase of the project is in progress and will conclude in Q3 of 2025 when analysis of the metrics will be conducted, database development will be complete and recommendations and best practices guide will be delivered based on the analysis. Implementation of the recommendations will begin in Q4 of 2025.

Revving up the Shift to Zero-Emission Engines

Status: Nearing Completion
Years: 2023 –

Overview

This project aims to identify and develop supportive procurement policies and other non-regulatory practices and tools that Metro Vancouver or other organizations could implement to accelerate the transition to low/zero-emissions non-road equipment within the public and private sectors. Such non-road equipment ranges from small equipment, such as lawn mowers, to large equipment, such as excavators. Non-road equipment is used in construction, landscaping, and various industrial activities around the region. Much of this equipment operates on diesel, gasoline, propane, and other fuels, and consequently contributes 7% of the region's total GHG emissions and substantial health-harming air contaminants such as diesel particulate matter, nitrogen oxides, and volatile organic compounds.

Outcomes to Date

The first phase of the project has assessed current technology availability and performance of small non-road equipment, as well as existing policies across leading jurisdictions that support the transition to zero-emission technology.

Next Steps

This research from the first phase will extend to large non-road equipment to gain an understanding of technology feasibility, market readiness, emissions reduction potential, policy gaps and challenges, and end-user needs.

The second phase of the project intends to identify opportunities for Metro Vancouver to accelerate the transition of the equipment towards low/zero-emission alternatives through internal procurement policies and tools as well as programs that other organizations could implement. The work will identify different collaborative mechanisms that Metro Vancouver can use to work with member municipalities and other potential partners to support accelerated transition. The development of a business-casing tool will serve interested groups seeking guidance and a better understanding of overall costs and benefits when transitioning to low/zero-emission non-road engines. This research project will be completed in 2025.

2024 APPROVAL YEAR

Comprehensive Assessment and Regulation of Expanded Group of Greenhouse Gases (CARE3G)
Status: In Progress
Years: 2024 –

Overview

The purpose of this project is to better understand the health and environmental impacts of an expanded group of air contaminants with high global warming potential (GWP), as identified in the IPCC Sixth Assessment Report, and identify opportunities to reduce emissions as needed. The project is identifying emission reduction measures that can be implemented by various organizations.

The air contaminants being examined are often used as refrigerants in heating and cooling applications and as chemical agents or solvents in industrial processes. If discharged into the environment, they could substantially contribute to climate change due to their high GWP. This project's goal is to better understand regional sources, quantities, and impacts of these air contaminants on public health, environment, and climate. Part of the project is implemented in partnership with Technical Safety BC, aiming to investigate potential leakage of refrigerants with high GWP. Learnings from the study will strengthen the regional emissions inventory and help identify actions that various organizations can take to reduce these emissions.

An additional $167,000 in partner funding has been leveraged from external agencies for this project.

Outcomes to Date

- Staff are pursuing a collaborative project with Technical Safety BC on a study on refrigerant leakage assessment and opportunities for emissions reduction by various organizations.
- Work is also underway to identify air contaminants with high GWP of relevance to the Metro Vancouver region, to be scoped into a broader study of emission sources and potential impacts.

Next Steps

Both studies are anticipated to start in 2025. The project is expected to be completed in 2026.

Feasibility Study for a Pilot Microgrid Project in the Metro Vancouver Region
Status: In Progress
Years: 2024 –

Overview
This is a collaborative research project with BC Hydro to explore the feasibility of a microgrid in the region. This feasibility study will help Metro Vancouver, member municipalities and BC Hydro better understand the potential for microgrids, as local, stand-alone power grids, to:

- enhance resilience by operating autonomously to independently power and maintain critical infrastructure (including MV facilities and services) and promote community resiliency during outages caused by severe storms linked to climate change or seismic events; and
- integrate local renewable energy sources (e.g., solar, electricity generation from Metro Vancouver facilities), storage, and demand-side resources into a main electrical distribution grid. Renewable energy integration can support electrification, reduce greenhouse gas emissions, and help manage peak demand on the main grid.

An additional $100,000 in partner funding has been leveraged from external agencies for this project.

Outcomes to Date
A contribution agreement between Metro Vancouver and BC Hydro was fully executed in March 2025.

Next Steps
Metro Vancouver and BC Hydro are working collectively to further develop a scope of work. Metro Vancouver AQCAS staff will work with procurement to issue a request for proposals. Project completion is expected in 2027.

REFERENCES

1. Climate Literacy | Metro Vancouver
2. Alternatives to Open Burning: Best Practices Guide - English
3. Alternatives to Open Burning: Best Practices Guide - Punjabi
4. Alternatives to Open Burning: Best Practices Guide - Traditional Chinese
5. Alternatives to Open Burning: Best Practices Guide - Simplified Chinese
6. Reel Green™ at Creative BC
7. BC Home Energy Planner

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Conor Reynolds, Director, Air Quality and Climate Action Services

Date: June 13, 2025 Meeting Date: July 4, 2025

Subject: **Manager's Report**

RECOMMENDATION
That the Air Quality and Climate Committee receive for information the report dated June 13, 2025, titled "Manager's Report".

AIR QUALITY AND CLIMATE COMMITTEE 2025 WORK PLAN
Attachment 1 sets out the Committee's Work Plan for 2025. The status of work plan priorities is indicated as pending, in progress, or complete. The work plan is updated, as needed, to include new priorities that arise, items requested by the Committee, and changes to the schedule.

The Work Plan has been updated to reflect the revised approach for *Climate 2050* Roadmaps communicated to the Committee at its meeting on May 9, 2025. For the issue areas of Water and Wastewater Infrastructure, Waste, and Human Health and Wellbeing, actions and policy updates are being integrated into existing planning processes and implementation plans, rather than as stand-alone roadmaps.

INPUT ON CLEANBC REVIEW
On May 7, 2025, the Province launched a review of *CleanBC*, its primary policy framework for reducing province-wide GHG emissions, as per the agreement with the Green Party caucus. The purpose of the review is *"to examine, evaluate and update current climate targets, and recommend policies, programs and initiatives to achieve significant emissions reductions in the province to meet these updated targets".* The review is being led by a panel of two independent reviewers who will submit recommendations to the Province by September 1, 2025, addressing issues such as targets, policy, programs, accountability and public reporting, informed by stakeholder engagement.

Staff are preparing input for this review that conveys prior direction and advocacy by the MVRD Board on provincial energy matters, including an expectation for the Province to take a stronger leadership role in implementing climate action. As such, the input suggests retaining and strengthening existing policies that are working well and considering new policy instruments to generate revenue and drive economic activity in BC and Metro Vancouver, while reducing emissions and minimizing impacts on households. This input addresses seven topics:

1. **Adopt a standardized, evidence-based planning framework and prioritize known solutions**
   - Implement a clear hierarchy for clean energy (e.g., demand reduction > efficiency > electrification > made-in-BC green gases > carbon removals > offsets) and transparent modelling to support policy
   - Prioritize public investment to scale proven technology (e.g., heat pumps, electric vehicles)
   - Consider domestic production requirements for renewable natural gas (similar to biodiesel)
   - Adopt pathways to reach targets consistent with global frameworks and apply them consistently across provincial agencies, utilities, and energy proponents

2. **Coordinate energy planning at provincial and localized scales, including a role for clean heat**
   - Undertake coordinated energy planning that efficiently integrates and clarifies roles for clean electricity, fossil gas, renewable fuels, hydrogen, thermal energy, energy storage, etc.
   - Include localized (bottom-up) energy analysis and planning, in addition to top-down, including area-based plans for right-sizing gas and electrical networks
   - Develop enabling policy and funding to catalyze low-carbon thermal energy networks

3. **Maintain and accelerate momentum on zero emissions vehicle adoption**
   - Retain and strengthen the Zero-Emission Vehicles Act – expand to medium duty vehicles
   - Strengthen the Low Carbon Fuel Standard (stricter targets, extend past 2030)
   - Consider advocating for agreements and policies to bring more low-cost EVs into Canada

4. **Standardize low-carbon new construction and implement policies for existing buildings**
   - Standardize low-carbon performance for new construction in leading regions
   - Implement the *Highest Efficiency Equipment Standards* policy
   - Develop provincial policies for existing buildings modeled on leading jurisdictions
   - Enact and amend policies for multi-unit residential buildings to protect thermal safety (e.g., Residential Tenancy Act, Strata Property Act) and provide retrofit funding

5. **Secure long-term funding for public transit and active transportation**
   - Ensure stable operating and capital funding for transit
   - Explore fair funding models and tools based on successes in other jurisdictions

6. **Strengthen clean industrial policy and revenue streams for climate action**
   - Continue and strengthen the flexible *Output Based Pricing System* policy for industry
   - Implement the emissions cap on natural gas utilities as committed by the Province
   - Consider other policies to drive innovation and generate revenue, such as adding natural gas to the Low Carbon Fuel Standard and expanded royalties from fossil fuel development

7. **Continue to fund local government climate action and ensure data availability**
   - Continue funding the Local Government Climate Action Program and other *CleanBC* programs supporting local government climate action
   - Develop a data platform to support building performance tracking and reporting
   - Require utilities and crown corporations to share data to support policy making

Staff have compiled data and examples from other jurisdictions to support these recommendations, some of which are included in two reports on this committee agenda for transportation and buildings trends, that will be shared with the *CleanBC* review panel. BC's progress on *CleanBC* to date demonstrates that GHG reduction is compatible with a growing economy. Continued progress toward the *CleanBC* goals relies on taking efficient action with multiple benefits for affordability, health and livability, in partnership with local governments.

BC ZERO-EMISSION VEHICLES ACT UNDER REVIEW

EV adoption is helping to reduce emissions from transportation, a significant source of air pollutants and the largest source of regional GHG emissions. A big driver of this trend is the BC *Zero-Emission Vehicles Act (ZEV Act)*, a flexible, market-based policy that ensures a consistent and predictable supply of electric vehicles (EVs) in BC. The *ZEV Act* requires automakers to meet stepped targets for ZEV sales, up to 100% by 2035, and allows buying and selling credits to meet the regulation. Since its enactment in 2019, this policy has helped EV sales to reach 22% in BC and 27% in Metro Vancouver in 2024. The BC Government recently announced its intention to review the *ZEV Act* concurrent with the CleanBC review, and many vehicle manufacturers are advocating for a reduced target. Although the process and timeline for the ZEV Act review have not yet been confirmed, given its importance for climate action, Metro Vancouver staff intend to provide technical input via a letter to the Province and are coordinating with member jurisdiction staff in this effort.

ATTACHMENT

1. "Air Quality and Climate Committee 2025 Work Plan", dated June 13, 2025.

73482338

Air Quality and Climate Committee 2025 Work Plan

1st Quarter Priorities	Status
Air Quality and Climate Committee 2025 Meeting Schedule and Work Plan	Complete
Metro Vancouver's Air Quality Management and Regulation Service	Complete
Amendment to Boilers and Process Heaters Emission Regulation Bylaw	Complete
Appointment of Enforcement Officers	Complete
2nd Quarter Priorities	
Outcome of BC Utilities Commission Decisions	Complete
Overview of Air Quality Advisory Program and Preparedness for 2025 Season	Complete
Community Wood Smoke Reduction Program - Update and New Retailers	Pending
Amendment to Notice of Bylaw Violation Enforcement and Dispute Adjudication Bylaw	Complete
Amendment to Ticket Information Utilization Bylaw Amendment Bylaw	Pending
Engagement on Amendments to Air Quality Management Fees Bylaw	Complete
Regional Air Contaminant Emissions Inventory and Trends	In progress
Transportation Emissions Policy Updates	In progress
Resilient Buildings Emissions Policy Updates	In progress
Industrial Emissions Policy Updates	In progress
Land Use Resilience Best Practice Guide – Flooding	Complete
Scan of Flood-related Capital Projects in the Metro Vancouver Region – Preliminary Results	Complete
Regional Flood Resiliency Planning Processes – Update	Complete
3rd Quarter Priorities	
Annual Regional Air Quality Report	Pending
Update to Regional Ground Level Ozone Strategy	Pending
BC Retrofit Accelerator Update	Pending
Approach for Reducing Air Contaminants From Small Gas-Powered Equipment	In progress
Engagement on Managing Air Contaminants from Wood Product Manufacturing	Pending
Climate 2050 – Solid Waste Issue Area Update	Pending
Climate 2050 Progress Report	Pending
Regional Flood Resiliency Planning Processes – Update	Pending
4th Quarter Priorities	
Report on 2025 Air Quality Advisory Season	Pending
Report on Corporate Energy and GHG Management	Pending
Update on Thermal Energy Networks in Metro Vancouver	Pending
Advocate for Long-Term Planning for Energy Transition	Pending
Update on Ecosystem Services on Agricultural Lands	Pending
Ecological Health Framework Progress Report	Pending
Annual Budget and Five-Year Financial Plan	Pending
Regional Flood Risk Reduction Priorities Criteria Matrix	Pending
Regional Flood Resiliency Planning Processes – Update	Pending

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Air Quality and Climate Committee

From: Harji Varn, General Manager / Chief Financial Officer, Financial Services

Date: June 18, 2025 Meeting Date: July 4, 2025

Subject: **Metro Vancouver's 2025 Financial Performance Report No. 1**

The attached report dated May 27, 2025, titled "Metro Vancouver's 2025 Financial Performance Report No. 1" was received by the Finance Committee for information at its June 12, 2025 meeting and is proceeding to the June 27, 2025 MVRD Board meeting.

This report is being presented to the Air Quality and Climate Committee for information.

ATTACHMENT

1. "Metro Vancouver's 2025 Financial Performance Report No. 1", dated May 27, 2025.

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Finance Committee

From: Harji Varn, Chief Financial Officer / General Manager, Financial Services

Date: May 27, 2025 Meeting Date: June 12, 2025

Subject: **Metro Vancouver's 2025 Financial Performance Report No. 1**

RECOMMENDATION
That the MVRD Board receive for information the report dated May 27, 2025 titled "Metro Vancouver's 2025 Financial Performance Report No. 1".

EXECUTIVE SUMMARY
The 2025 Financial Performance Report indicates a forecasted year-end net operating surplus to budget of $17.6 million (1.2% of the total $1.5 billion operating budget). Surpluses are forecasted in Water Services $1.1 million, Liquid Waste $11.5 million, Housing $1.6 million, and Regional District $3.4 million, primarily a result of forecasted lower than budgeted operational expenditures, largely in the liquid waste utility, and organization-wide staff vacancies.

Year-end capital expenditures are forecasted at approximately 80% of the annual cash flow target of $1.8B. Work has continued to progress and ramp up on several multi-year projects such as Coquitlam Water Main, Annacis Water Supply Tunnel, and NSWWTP. Borrowing of MFA debt up to $600M is aligned to the approved budget. Investment returns are currently averaging 3.89% and are expected to remain favorable for the remainder of the year. Year-to-date procurement activity includes 3 awards approved by the Board representing 98% of the total value of awarded contracts. Across the organization there are over 130 continuous improvement initiatives underway. Attachment 1 to this report provides more detailed information on Metro Vancouver's financial performance at April 30, 2025.

PURPOSE
To present the Finance Committee and MVRD Board with Metro Vancouver's 2025 Financial Performance Report No. 1, including forecasts to the end of 2025, procurement activity, treasury, and continuous improvement reporting.

BACKGROUND
As per the Terms of Reference, the Finance Committee is a standing committee of the Metro Vancouver Board that monitors Metro Vancouver's financial management, providing advice and recommendations on financial matters, as well as reviewing periodic and annual financial results and providing oversight on the annual audit. The Metro Vancouver's 2025 Financial Performance Report is intended to support the Finance Committee with their monitoring and oversight role and is focused on the annual forecast and overall financial health of the organization. The report highlights any major risks, opportunities, and seeks to inform the annual budget process. Attachment 1 to this report provides more detailed information on Metro Vancouver's financial performance at April 30, 2025.

Operating Results and Forecast

On a net surplus basis, it is expected that the year-end operating surplus to budget will be $17.6 million or 1.2% of the total $1.5 billion operating budget. The 2025 overall forecasted surpluses are in Water Services of $1.1M, Liquid Waste Services of $11.5M, Metro Vancouver Housing of $1.6M, and Regional District Services of $3.4M, primarily from staff vacancies, delays in project contracted services, and slightly lower debt service costs. In accordance with policy, operating surpluses will be transferred to reserves at year-end. As at April 30, 2025, the operating surplus to budget is $18.3M or 1.2% of the total budget.

Table 1. 2025 Operating Results and Forecast

(in millions)	Year-to-date Actual Surplus	Year-end Forecast Surplus
Greater Vancouver Water District	$ 3.9	$ 1.1
Greater Vancouver Sewerage and Drainage District		
Liquid Waste Services	9.5	11.5
Solid Waste Services	(0.8)	—
Metro Vancouver Housing Corporation	2.8	1.6
Metro Vancouver Regional District	2.9	3.4
	$ 18.3	$ 17.6

Capital Expenditures Program Results and Forecast

Capital expenditures for 2025 are forecasted at approximately 80% of the annual capital expenditure target of $1.8 billion. Work has progressed on several multi-year projects and there is anticipated advancement in major projects as they move into construction phases such as the Coquitlam Water Main, Annacis Water Supply Tunnel, and NSWWTP. As at April 30, 2025, the capital actual spending is $292.4M or 17% of the total budget.

Table 2. 2025 Capital Expenditure Program Results and Forecast

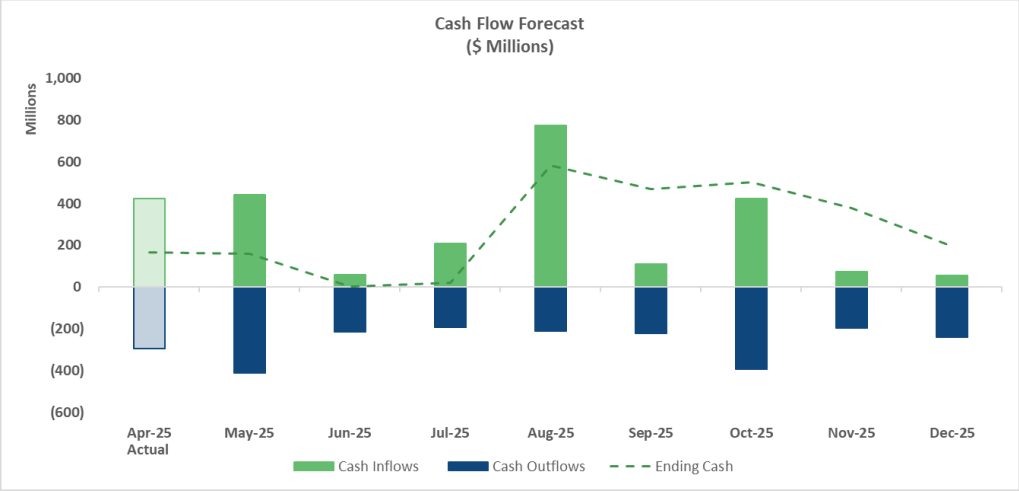
(in millions)	Annual Capital Expenditures	Year-to-date Actual Expenditures	Forecasted Expenditures	Projected Variance
Housing Services	$186.1	26.3	166.1	20.0
Liquid Waste Services	1010.4	162.8	743.6	266.8
Regional Parks	44.4	1.3	32.8	11.6
Solid Waste Services	42.8	13.3	13.3	29.5
Water Services	484.6	438.3	438.3	46.3
	$ 1,768.3	**$ 292.4**	**$ 1,394.1**	**$ 374.2**

Treasury Results

As a result of capital projects progressing to completion and or ramping up in 2025, the total projected MFA borrowing for 2025 is $600.0M, which is aligned with the forecasted borrowing. Furthermore, the MFA long-term borrowing rate for the 2025 Spring borrowing was 3.55%, which is lower than the Spring borrowing 2024 rate of 4.40% indicating a softening in long-term interest rates. The impact of lower interest rates results in slightly lower than expected debt service ratio (interest and principal payments to revenue) from 17.9% to 16.3%.

Figure 1 below provides the April 2025 actual cash position and cash flow forecast for rest of 2025. Tax Revenue is collected in August, DCC's are collected in July and December, Water, Solid Waste, Housing Rental Revenues are collected monthly and Sewer Levies are collected in August. Treasury is continuously reviewing cash and reserve balances to debt requirements to ensure adequate liquidity to sustain operations and managing risk while also making efficient use of its cash.

Figure 1. Metro Vancouver Cash Position and Forecast from April – December 2025



The average investment returns as of April 2025 have decreased since December 2024, to 3.75% for short-term and 4.09% for long-term. As interest rates are expected to decline, Metro Vancouver's rate of return is also expected to decline as maturing investments will be re-invested into the current market. The total estimated weighted average annualized return at April 2025 was 3.89%, slightly lower than 4.52% reported in December 2024.

Procurement

The tables below provide the value of awards approved by the Metro Vancouver Board, as well as those approved by the Corporation in excess of $500,000 that are not awarded by the Board in accordance with the existing Board-approved Procurement Policy. It is expected that procurement activity will increase with respect to the number of awards as well as the value due to the significant capital program. First quarter of 2025 includes the PCL contract for NSWWTP.

Table 3. Number of Contracts Awarded

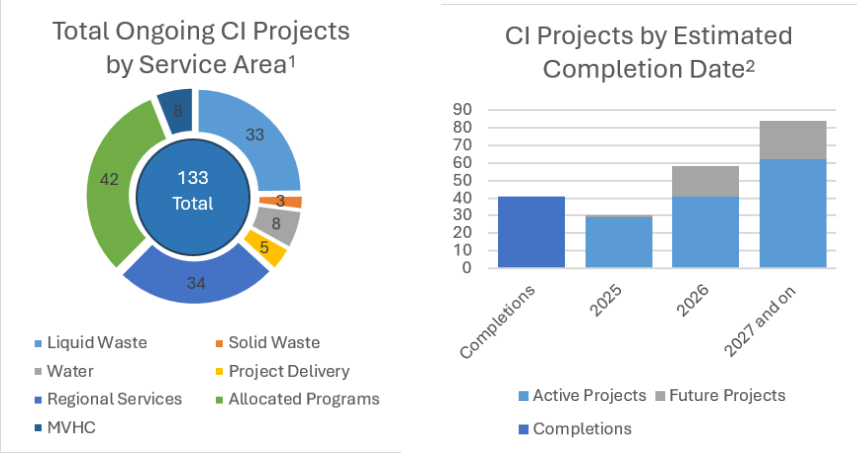
Award Type	Year-to-date April 2025	2024	2023	2022
Board Awarded	3	20	16	20
Corporate Awarded	101	101	51	53
Total	104	121	67	73

Table 4. Number of Contracts Awarded

Award Type	Year-to-date April 2025	2024	2023	2022
Board Awarded	$2,209,304,212	$911,002,450	$465,895,019	$434,664,449
Corporate Awarded	48,928,675	176,908,632	71,980,936	89,019,028
Total	$2,258,232,887	$1,087,911,082	$537,875,955	$523,683,477

Continuous Improvement

There are currently over 130 continuous improvement projects underway across the organization. Continuous improvement is a core value for the organization and is intended to enhance efficiency and deliver better service internally and externally.



[1]*Total Ongoing CI Projects by Service Area* illustrates the total number of projects identified and by service area. The number of CI projects within an area may not reflect the significance or potential cost savings of the initiatives.

[2]*CI Projects by Estimated Completion Date* displays the number of active and future projects by expected year of completion.

ALTERNATIVES

This report is provided for information; no alternatives are presented.

FINANCIAL IMPLICATIONS

The Metro Vancouver's 2025 Financial Performance Report No. 1 indicates that Metro Vancouver is anticipating a net operating surplus to budget of $17.6 million for 2025 (1.2% of the total $1.5 billion operating budget) and a capital spend of approximately 80% of the $1.8 billion 2025 annual cash flow target. Staff continue to monitor the financial performance including reporting on treasury, procurement and continuous improvement on a monthly basis and will provide the second financial report to the Finance Committee and the Board in the Fall of 2025 and the final 2025 financial report and year-end results to the Finance Committee and Board in April 2026.

CONCLUSION

This report provides the first report for 2025 on the financial performance of Metro Vancouver. It is forecasted that Metro Vancouver will have a $ 17.6 million net operating surplus to budget for 2025 (1.2% of the total $1.5 billion operating budget) and capital expenditures are forecasted at approximately 79% of the annual cash flow target of $1.8 billion. Staff continue to monitor the financial performance against the budgeted cash flow requirements, including reporting on treasury, procurement, and continuous improvement on a monthly basis and will report to the Finance Committee and Board the second financial performance report in the Fall 2025 and the 2025 year-end results in April 2026.

ATTACHMENT

1. Metro Vancouver's 2025 Financial Performance Report No. 1.

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

METRO VANCOUVER 2025 FINANCIAL PERFORMANCE REPORT NO. 1

Actuals to April 30, 2025, with

Estimated Financial Forecast to December 31, 2025

Table of Contents

INTRODUCTION

This report presents the first of three financial performance reports for 2025. It combines the financial performance and annual forecast information of Metro Vancouver's four legal entities: Greater Vancouver Water District, Greater Vancouver Sewerage and Drainage District, Metro Vancouver Housing Corporation, and Metro Vancouver Regional District. The final report for fiscal 2025 will include the 2025 year-end audit results.

FINANCIAL PERFORMANCE AT A GLANCE

	Trend	Commentary
Operating Expenditures		As of April 30, 2025, operating results indicate a surplus of $18.3M. Operating expenditures are at 93% of the year-to-date (YTD) expected budget or 23% of the annual budget ($334.3M out of $$1.5B). YTD revenues are lower than budget by $6.5M (3.8% of YTD budget). It is forecasted that for 2025, the year-end net operating surplus to budget will be $17.6M (1.2% of the $1.5B operating budget). Overall forecasted surpluses are in Water Services of $1.1, Liquid Waste Services of $11.5M, Metro Vancouver Housing of $1.6M, and Regional District Services of $3.4M, primarily from staff vacancies, lower than budget core operational expenses for liquid waste, delays in projects.
Capital Expenditures		Capital expenditures as of April 30, 2025 are $292.4M or 17% of total planned spending of $1.8B annual capital expenditures. Year-end, capital expenditures are forecasted at approximately 80% of the annual capital expenditure target of $1.8B. Work has progressed on several multi-year projects and there is anticipated advancement in major projects as they move into various stages of construction phases, such as the Coquitlam Water Main, Annacis Water Supply Tunnel, and NSWWTP.
Awarded Procurement		3 awards were approved by the Board with a value of $2.2B, which is 98% of the total value of awarded contracts in the first four months.
Cash Flow Scenarios		Projected annual cash balance remains positive. Although current cash balance remains positive, a decline in cash by year-end is forecasted as capital spend ramps up and we only borrow what we require.
Investments		The latest report on investments indicated an estimated weighted average annualized return of 3.89%.
Financial Indicators		The ratios indicate a sufficient position to pay off current liabilities and forecasted debt servicing is less than budgeted.
Continuous Improvement		There are currently over 130 continuous improvement initiatives underway that will continue to advance the Board's Strategic Priorities.

OPERATING RESULTS

Overall Net Operating Surplus to Budget
As of April 30, 2025, Metro Vancouver's year-to-date operating surplus to budget is $18.3M. By year-end, the forecasted year-end net operating surplus to budget is anticipated at $17.6M (1.2%% of the $$1.5B budget). The 2025 overall forecasted surpluses are in Water Services of $1.1M, Liquid Waste Services of $11.5M, Metro Vancouver Housing of $1.6M, and Regional District Services of $3.4M.

	Year-to-date Actual Surplus	Year-end Forecast Surplus
Greater Vancouver Water District	$ 3,837,209	$ 1,139,634
Greater Vancouver Sewerage and Drainage District		
Liquid Waste Services	9,510,079	11,455,213
Solid Waste Services	(746,224)	—
Metro Vancouver Housing Corporation	2,845,515	1,577,651
Metro Vancouver Regional District	2,813,459	3,409,266
	$ 18,260,038	$ 17,581,764

Key drivers related to the operating results are highlighted in the following schedules.

Operating Budget Summary

Metro Vancouver
Operating Budget Summary
For the Four Months Ended April 30, 2025

	Annual Budget	Year-end Forecast	Projected Variance	Year-to-date Budget	Year-to-date Actual	% Actual to YTD Budget	Year-to-date Variance
REVENUES							
Key Service Revenues							
Water Sales	$ 399,008,564	$ 399,008,564	$ —	$ 87,630,373	$ 87,035,338	99%	$ (595,035)
Liquid Waste Services Levy	575,550,267	575,550,267	—	—	—	—%	—
Solid Waste Tipping Fees	148,874,301	156,024,547	7,150,246	49,280,176	48,884,525	99%	(395,651)
Metro Vancouver Regional District Requisitions	117,237,833	117,237,833	—	—	—	—%	—
Housing Rents	44,610,986	44,458,846	(152,140)	14,870,340	15,997,086	108%	1,126,746
	1,285,281,951	1,292,280,057	6,998,106	151,780,889	151,916,949	100%	136,060
Other Revenues	60,315,555	51,654,123	(8,661,432)	11,615,779	8,680,283	75%	(2,935,496)
Reserve Transfers	118,065,190	113,510,219	(4,554,971)	7,094,639	3,423,677	48%	(3,670,962)
TOTAL REVENUES	**$1,463,662,696**	**$1,457,444,399**	**$ (6,218,297)**	**$ 170,491,307**	**$ 164,020,909**	96%	**$ (6,470,398)**
EXPENDITURES							
Greater Vancouver Water District	$ 408,867,559	$ 408,251,730	$ 615,829	$ 97,588,541	$ 92,741,715	95%	$ 4,846,826
Greater Vancouver Sewerage and Drainage District							
Liquid Waste Services	681,878,667	678,604,528	14,729,352	149,289,760	138,191,084	93%	11,098,676
Solid Waste Services	160,053,191	167,384,594	(7,331,403)	49,430,421	48,753,073	99%	677,348
Metro Vancouver Housing Corporation	60,687,829	56,498,446	4,189,383	18,504,135	14,099,565	76%	4,404,570
Metro Vancouver Regional District							
Regional Parks	89,473,461	85,897,167	3,576,294	28,841,605	26,440,408	92%	2,401,197
Air Quality and Climate Action	16,293,920	15,308,951	984,969	4,837,126	4,124,057	85%	713,069
Other Regional Services	46,408,069	39,372,432	7,035,637	10,492,935	9,904,185	94%	588,750
TOTAL EXPENDITURES	**$1,463,662,696**	**$1,439,862,635**	**$ 23,800,061**	**$ 358,984,523**	**$ 334,254,087**	93%	**$ 24,730,436**
SURPLUS (DEFICIT)	**$ —**	**$ 17,581,764**	**$ 17,581,764**	**$(188,493,216)**	**$(170,233,178)**		**$ 18,260,038**

- Overall revenues as of April 30, 2025 are lower than budget by $6.5M (3.8% of YTD budget) due primarily to lower reserve usage and lower external revenue streams compared to budget. Reserve transfers for funding Housing and Parks capital replacement and maintenance programs were $2.7M lower than anticipated largely related to timing of capital replacement work as projects are taking longer than anticipated. It is anticipated that the trend for higher Solid Waste system waste flows will continue, resulting in overall year-end revenues expected to be $7.3M higher than budget.

- Overall expenditures as of April 30, 2025 are at 93% of the year-to-date expected budget or 23% of the annual budget ($334.3M out of $1.5B). Key factors contributing to lower expenditures than budget include staff vacancies, deferred operating projects, and the timing of capital replacement, operating and maintenance expenditures. It is anticipated the trend for higher landfill costs and operations and maintenance costs in Solid Waste Services will be higher than budget. This variance is mitigated by lower than anticipated debt service costs and timing of capital replacement and maintenance projects in Housing. By year-end, overall expenditures are forecasted to be under budget by $23.8M or 2% of annual budget.

- Based on current forecasts, the net year-end surplus to budget is forecasted to be $17.6M (1.2% of the $1.5B budget).

Operating Surplus Analysis by Entity

Water Services has a current YTD surplus of $3.9M with a forecasted surplus of $1.1M by year-end.

	Annual Budget	Year-end Forecast	Projected Variance	Year-to-date Budget	Year-to-date Actual	Year-to-date Variance
Greater Vancouver Water District						
Revenues	$408,867,559	$409,391,364	$ 523,805	$ 88,586,797	$ 87,577,180	$ (1,009,617)
Expenditures	408,867,559	408,251,730	615,829	97,588,541	92,741,715	4,846,826
Surplus (Deficit)	$ —	$ 1,139,634	$ 1,139,634	$ (9,001,744)	$ (5,164,535)	$ 3,837,209

- Year-to-date water revenues are currently $1.0M lower than budget, largely due to $0.6M lower water sales than anticipated from slightly less than expected consumption levels overall during the first four months. By year-end, water sales are projected to be on budget, with an overall anticipated year-end revenue surplus of $0.5M due to slightly more DCC revenue use to pay for growth debt of $0.7M offset by less reserve use ($0.2M) than planned due to delays in SIF project expenses.

- Year-to-date expenditures are $4.9M less than budget, primarily in water supply, maintenance and treatment plant operational underspends to-date of close to $4.0M along with underspends in policy and planning project work of $0.4M, and several other operating programs underspends year-to-date of $1.6M, offset by slight overspends to-date of $1.1M (minor capital project work of close to $0.9M and also for dam safety project work of close to $0.2M.)

- Overall Water expenses projections indicate projections of close to $0.6M under budget by year-end.

Liquid Waste Services has a YTD surplus of $9.5M with a forecasted surplus of $11.5M by year-end.

	Annual Budget	Year-end Forecast	Projected Variance	Year-to-date Budget	Year-to-date Actual	Year-to-date Variance
Greater Vancouver Sewerage and Drainage District						
Liquid Waste Services						
Revenues	$681,878,667	$678,604,528	$ (3,274,139)	$ 4,030,860	$ 2,442,263	$ (1,588,597)
Expenditures	681,878,667	667,149,315	14,729,352	149,289,760	138,191,084	11,098,676
Surplus (Deficit)	$ —	$ 11,455,213	$ 11,455,213	$ (145,258,900)	$ (135,748,821)	$ 9,510,079

- Year-to-date revenues are $1.6M lower than budget due primarily to the timing of receipts for trucked liquid waste user/permit fees revenues. By year end, revenues are projected to be lower than budgeted by $3.3M primarily due to reduced Trucked Liquid Waste revenues.

- Year-to-date expenditures are $11.1M lower than budget primarily due to the timing of receipt and approval of invoices relative to the budgeted timing of core program (plus allocated) expenditures.

- Overall expenditures by year-end are forecasted to be $14.7M lower than budgeted primarily as a result of the program to trial alternate low GHG long-haul technologies put on hold, delay of the Hydrothermal Liquifaction (HTL) project and associated operating costs at the Annacis Island wastewater treatment plant, reducing the use of external contractors for civil maintenance by the expansion of in-house construction capacity, and projected underspends in the minor capital project costs and other allocated program service costs.

Solid Waste Services had a YTD deficit of $0.7M, with a forecast to be on budget by year-end.

	Annual Budget	Year-end Forecast	Projected Variance	Year-to-date Budget	Year-to-date Actual	Year-to-date Variance
Greater Vancouver Sewerage and Drainage District						
Solid Waste Services						
Revenues	$160,053,191	$167,384,594	$ 7,331,403	$ 53,006,480	$ 51,582,908	$ (1,423,572)
Expenditures	160,053,191	167,384,594	(7,331,403)	49,430,421	48,753,073	677,348
Surplus (Deficit)	$ —	$ —	$ —	$ 3,576,059	$ 2,829,835	$ (746,224)

- Year-to-date revenues are $1.4M lower than anticipated driven primarily by timing of energy sales at the Waste to Energy Facility. Expenditures were $0.7M lower as a result of timing due to a vendor changeover at the Waste-to-Energy facility, which is expected to ramp up as part of new vendor onboarding.

- Economic recovery and regional growth following the pandemic continue to contribute to 2025 waste quantities remaining similar to the previous year. As a result, waste flows along with additional commercial organics are expected to drive tipping fee revenues $7.3M greater than budget by the end of year.

- Expenditures by year-end are forecasted to be higher by $7.3M mainly due to increased contingency disposal costs associated with the expected waste tonnage.

The **Metro Vancouver Housing (MVHC)** had a YTD surplus of $2.8M with a forecasted surplus of $1.6M by year-end.

	Annual Budget	Year-end Forecast	Projected Variance	Year-to-date Budget	Year-to-date Actual	Year-to-date Variance
Metro Vancouver Housing Corporation						
Revenues	$ 60,687,829	$ 58,076,097	$ (2,611,732)	$ 19,363,463	$ 17,804,408	$ (1,559,055)
Expenditures	60,687,829	56,498,446	4,189,383	18,504,135	14,099,565	4,404,570
Surplus (Deficit)	$ —	$ 1,577,651	$ 1,577,651	$ 859,328	$ 3,704,843	$ 2,845,515

- For the first four months, revenues were $1.6M lower than anticipated largely related to the timing of capital replacement and maintenance expenditures which results in a lower than budgeted transfer from reserve funds into annual revenues. By year-end, it is anticipated that revenues will be $2.6M lower than budget.

- Year-to-date expenditures were $4.4M lower than anticipated, primarily due to reduced debt servicing costs resulting from delays in the completion of new rental properties.

- The forecasted year-end net operating surplus of $1.6M is largely attributed to the following factors: savings from lower debt servicing costs and property operating costs for new rental properties with delayed completion and less than expected spending on capital maintenance projects due to delays in projects.

Metro Vancouver Regional District

Regional Parks had a YTD surplus of $1.4M with a forecasted surplus of $0.3M by year-end.

	Annual Budget	Year-end Forecast	Projected Variance	Year-to-date Budget	Year-to-date Actual	Year-to-date Variance
Metro Vancouver Regional District						
Regional Parks						
Revenues	$ 89,473,461	$ 86,161,877	$ (3,311,584)	$ 3,823,631	$ 2,822,690	$ (1,000,941)
Expenditures	89,473,461	85,897,167	3,576,294	28,841,605	26,440,408	2,401,197
Surplus (Deficit)	$ —	$ 264,710	$ 264,710	$ (25,017,974)	$ (23,617,718)	$ 1,400,256

- Year-to-date revenues were under budget by $1.0M due to delay in reserve funded projects in the capital maintenance program. By year-end, it is anticipated that revenue will be $3.3M lower than budget due to less reserve usage.

- Year-to-date expenditures for the Parks were $2.4M lower than budget due to labour vacancies and the timing of capital maintenances, which will increase over Q2 and Q3. By year-end, it is anticipated that expenditures will be $3.5M lower than budget due to labour vacancies and deferred litigation costs.

- The forecasted year-end net operating surplus of $0.3M is largely due to projected savings from labour vacancies.

Air Quality and Climate Action had a YTD surplus of $1.1M with a forecasted surplus of $0.9M by year end.

	Annual Budget	Year-end Forecast	Projected Variance	Year-to-date Budget	Year-to-date Actual	Year-to-date Variance
Metro Vancouver Regional District						
Air Quality and Climate Action						
Revenues	$ 16,293,920	$ 16,243,920	$ (50,000)	$ 980,532	$ 1,382,006	$ 401,474
Expenditures	16,293,920	15,308,951	984,969	4,837,126	4,124,057	713,069
Surplus (Deficit)	$ —	$ 934,969	$ 934,969	$ (3,856,594)	$ (2,742,051)	$ 1,114,543

- Year-to-date revenues are higher than budget by $0.4M, largely due to timing of revenue collected for Air Quality Monitoring service agreements. Revenue is expected to be largely on target by end of the year.

- Year-to-date expenditures were $0.7M lower than budget primarily due to labour underspends from position vacancies and delays in project contracted services. By year-end, expenditures are forecasted to be lower than budget by $1.0M largely from labour underspends due to vacancies and includes $50k in unspent SIF budget, which will be deferred to 2026.

- The forecasted year-end net operating surplus of $0.9M is largely due to the labour underspends from position vacancies.

Other Regional Services had a YTD surplus of $0.4M with a forecasted surplus of $2.2M by year-end.

	Annual Budget	Year-end Forecast	Projected Variance	Year-to-date Budget	Year-to-date Actual	Year-to-date Variance
Metro Vancouver Regional District						
Other Regional Services						
Revenues	$ 46,408,069	$ 41,582,019	$ (4,826,050)	$ 699,544	$ 409,454	$ (290,090)
Expenditures	46,408,069	39,372,432	7,035,637	10,492,935	9,904,185	588,750
Surplus (Deficit)	$ —	$ 2,209,587	$ 2,209,587	$ (9,793,391)	$ (9,494,731)	$ 298,660

- Overall year-to-date expenditures for Regional Services were $0.6M lower than budget largely due to lower salary costs from staff vacancies and delays in project contracted services. Overall year-to-date revenues for Regional Services were $0.3M lower than budget largely due to timing of projects and associated funding.

- The forecasted year-end expenditures are expected to be under budget by $7.0M primarily due to Barnston Island dyke improvements project timeline revisions as well as position vacancies. Forecasted grant revenues for Barnston Island are also expected to be lower as these are tied to the project timeline. This is resulting in a projected year-end surplus of $2.2M.

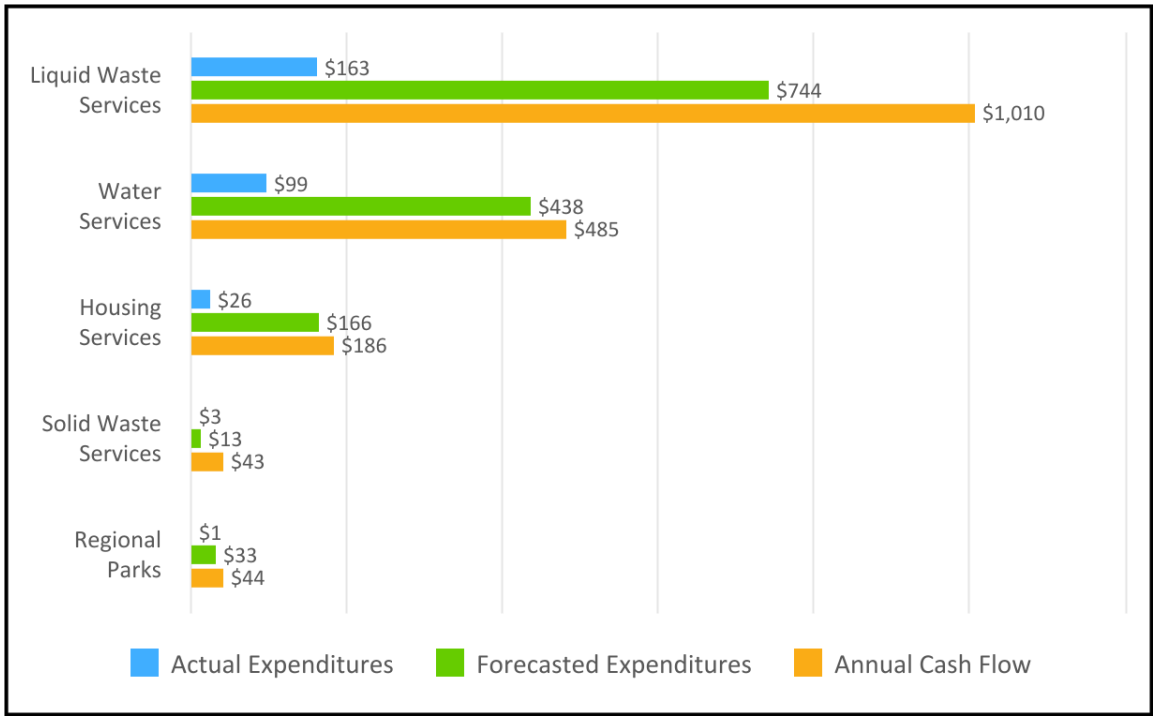
CAPITAL PROGRAM

Overall Capital Expenditures

As of April 30, 2025, capital expenditures are $292.4M, or 17% of the annual cash flows. Significant spending is expected in Liquid Waste and Water Services. These areas account for nearly 85% of the total capital cash flows of $1.8B. Year end, capital expenditures are forecasted at approximately 80%of the annual cash flow target of $1.8B . This is a higher spend compared to previous years due to the anticipated construction advancement in major projects as they move into the construction phase.

Capital Expenditure at a Glance

2025 Capital Cash Flow vs Year-to-date Actual Expenditures in $ Millions



Capital Expenditure Summary

2025 Capital Spending Summary
For the Four Months Ended April 30, 2025

	Annual Capital Cash Flow	Year-to-date Actual Expenditures	Forecasted Expenditures	Forecasted Expenditures of Annual Cash Flow (%)	Forecasted Expenditures Variance from Annual Cash Flow ($)	Forecasted Expenditures Variance from Annual Cash Flow (%)
Housing Services						
Development Capital	$ 160,446,000	$ 24,622,461	$ 154,498,619	96%	$ 5,947,381	4%
Building Rehabilitation	25,710,000	1,734,179	11,565,000	45%	14,145,000	55%
	186,156,000	**26,356,639**	**166,063,619**	**89%**	**20,092,381**	**11%**
Liquid Waste Services						
Collections	198,344,000	17,734,671	169,357,252	85%	28,986,748	15%
Treatment Plants	812,078,000	145,065,857	574,249,682	71%	237,828,318	29%
	1,010,422,000	**162,800,528**	**743,606,934**	**74%**	**266,815,066**	**26%**
Regional Parks						
Capital Development	24,400,000	1,155,497	17,750,000	73%	6,650,000	27%
Parkland Acquisition	20,000,000	135,370	15,000,000	75%	5,000,000	25%
	44,400,000	**1,290,867**	**32,750,000**	**74%**	**11,650,000**	**26%**
Solid Waste Services						
Landfills	5,550,000	262,978	640,000	12%	4,910,000	88%
Recycling and Waste Centres	8,350,000	474,566	850,000	10%	7,500,000	90%
Waste to Energy Facilities	28,755,000	1,969,268	11,830,000	41%	16,925,000	59%
	42,655,000	**2,706,813**	**13,320,000**	**31%**	**29,335,000**	**69%**
Water Services						
Water Mains	352,572,000	74,567,853	337,764,900	96%	14,807,100	4%
Pump Stations	52,350,000	9,342,359	36,243,000	69%	16,107,000	31%
Reservoirs	15,200,000	7,140,825	18,135,000	119%	(2,935,000)	(19)%
Treatment Plants	45,900,000	4,981,046	37,555,000	82%	8,345,000	18%
Others	18,510,000	3,188,427	8,560,000	46%	9,950,000	54%
	484,532,000	**99,220,510**	**438,257,900**	**90%**	**46,274,100**	**10%**
Total	**$1,768,165,000**	**$ 292,375,357**	**$1,393,998,453**	**79%**	**374,166,547**	**21%**

Metro Vancouver Housing (MVHC)

(In millions)	Annual Capital Cash Flow	Forecasted Expenditures	Projected Variance
Development Capital	$ 160.4	$ 154.5	$ 5.9
Building Rehabilitation	25.7	11.6	14.1
Total	**$ 186.1**	**$ 166.1**	**$ 20.0**

Year-to-date capital expenditures are $26.3M (14%) and are forecasted at $166.1M (89%) by year-end.

- Housing projects are well underway - Heron's Nest, The Connection, and The Steller are progressing with excavation nearing completion and below-grade structures commencing, resulting in ramped-up expenditures in 2025 and continuing into 2026. Construction of Heather Place B and Kingston Gardens 5 will be completed and in the rent-up phase in 2025, while Salal Landing is expected to be completed in 2026.
- Due to delays in capital rehabilitation projects stemming from scope changes, contractor delays, permit processing, and staff onboarding and mobilization, the forecasted year-end spend is lower than expected.
- Through strategic partnerships, funding and financing programs, Metro Vancouver Housing is leveraging its available resources to build and renew homes with no additional impact to household tax requisitions.

Liquid Waste Services

(In millions)	Annual Capital Cash Flow	Forecasted Expenditures	Projected Variance
Collections	$ 198.3	$ 169.4	$ 28.9
Treatment Plants	812.1	574.2	237.9
Total	**$ 1,010.4**	**$ 743.6**	**$ 266.8**

Year-to-date capital expenditures are $162.8M (16%) with a forecasted spend of $743.6M (74%) by year-end.

- Many projects are advancing into various stages of the project timeline such as Gilbert/Brighouse Trunk Sewer, Gleneagles Pump Station Improvements, North Surrey Interceptor Improvements, NSI SSO Storage, Port Coquitlam Pump Station Refurbishment, and Royal Ave Pump Station Rehabilitation. NSWWTP continues to ramp up its construction activities in 2025 with the awarded contract with PCL. Ground improvement works at NLWWTP is moving at a slower rate due to delays related to archeological issues. On direction of the Board, IIWWTP has deferred ground and utility preparation works to proceed with a phased options assessment of the Board approved Project Definition Report to identify affordability and delivery alternatives of the work program while design work is progressing. For Annacis Island WWTP (Stage 5 Expansion) work on the influent channel to the Solids Contact Tanks (SCTs) and within SCTs 1 and 4, which is part of the Annacis Island WWTP (Stage 5 Expansion) has been postponed until the summer of 2026

Regional Parks

(In millions)	Annual Capital Cash Flow	Forecasted Expenditures	Projected Variance
Capital Development	$ 24.4	$ 17.8	$ 6.6
Parkland Acquisition	20.0	15.0	5.0
Total	**$ 44.4**	**$ 32.8**	**$ 11.6**

Year-to-date capital expenditures are $1.3M (3%) and are forecasted at $32.8M (74%) by year end.

- Progress continues on major projects including Widgeon Marsh Phase 1, Campbell Valley Greenway extension and Grouse Mountain Park Development. Some projects are taking longer than anticipated largely due to permitting requirements (Boundary Bay Perimeter Trail, Belcarra South Redevelopment). Timing of expenditures with respect to land acquisition is dependent on availability and market conditions.

Solid Waste Services

(In millions)	Annual Capital Cash Flow	Forecasted Expenditures	Projected Variance
Landfills	$ 5.6	$ 0.6	$ 5.0
Recycling and Waste Centres	8.4	0.9	7.5
Waste to Energy Facilities	28.8	11.8	17.0
Total	**$ 42.8**	**$ 13.3**	**$ 29.5**

Year-to-date capital expenditures are $2.8M (6%) and are forecasted at $13.3M (31%) by year-end.

- The forecasted spend is lower than initially projected as a result of longer than expected timelines to initiate construction on various capital projects. Contributing factors include additional engagement steps in the development of project scopes, longer than expected timelines to develop municipal agreements for infrastructure projects, and additional permitting steps not initially anticipated. Despite these complexities, detailed design and procurement are underway for the Waste-to-Energy Facility District Energy system and many other projects are moving to the next phase of the project timelines.

Water Services

(In millions)	Annual Capital Cash Flow	Forecasted Expenditures	Projected Variance
Water Mains	$ 352.6	$ 337.8	$ 14.8
Pump Stations	52.4	36.2	16.2
Reservoirs	15.2	18.1	-2.9
Treatment Plants	45.9	37.6	8.3
Others	18.5	8.6	9.9
Total	**$ 484.6**	**$ 438.3**	**$ 46.3**

Year-to-date capital expenditures $99.2M (20%) and forecasted at $438.3M (90%) by year-end.

- Construction activities underway for Stanley Park Water Supply Tunnel, Annacis Water Supply Tunnel, Central Park Main, Kennedy Newton Main, Douglas Road Main No. 2, and Fleetwood Reservoir. Spending for Coquitlam Main No. 4 are expected to ramp up due to contractor acceleration. Annacis Main No. 5 (North) and the Newton Pump Station No. 2 construction is planned to commence later in 2025.

The following schedules provide detailed information on the capital expenditures by project against annual capital cash flow ***as of April 30, 2025***.

Metro Vancouver

Capital Expenditures by Project

For the Four Months Ended April 30, 2025

Housing Services	**Annual Capital Cash Flow**	**Year-to-date Actual Expenditures**
Development Capital		
Housing Development - Heather Place - Building B	$ 16,468,000	$ 3,580,518
Housing Development - Heather Place - Building C	2,265,000	32,171
Housing Development - Heron's Nest	32,000,000	3,527,612
Housing Development - Kingston Gardens - Phase 1	3,500,000	419,587
Housing Development - Malaspina	6,000,000	426,216
Housing Development - Park Court	100,000	—
Housing Development - Projects in Planning	200,000	—
Housing Development - Riverside Drive	806,000	101,490
Housing Development - Salal Landing	14,305,000	823,961
Housing Development - The Connection	46,248,000	8,248,035
Housing Development - The Steller	38,554,000	7,462,871
Total Development Capital	**160,446,000**	**24,622,461**
Building Rehabilitation		
Housing Development - Crown Manor	3,840,000	27,250
Housing Development - Le Chateau Place	5,900,000	14,752
Housing Development - Manor House	2,470,000	61,065
Housing Development - Minato West	5,900,000	669,171
Housing Development - Regal	100,000	—
Housing Development - Somerset Gardens	500,000	—
Housing Development - Strathearn Court	7,000,000	961,941
Total Building Rehabilitation	**25,710,000**	**1,734,179**
Total Housing Services	**$ 186,156,000**	**$ 26,356,639**

Liquid Waste Services	**Annual Capital Cash Flow**	**Year-to-date Actual Expenditures**
Collections		
104th Ave PS and FM for Redirection to NLWWTP	$ 100,000	$ 1,888
Albert Street Trunk Sewer	50,000	—
Big Bend Forcemain - Gate Replacement	176,000	—
Burnaby Lake North Interceptor Winston Section	15,966,000	827,287
Cloverdale Pump Station Capacity Upgrade	1,100,000	24,789
Cloverdale Trunk Sewer Capacity Upgrade	600,000	9,324
Columbia Forcemain (CLT) Rehabilitation	13,000,000	83
Combined Sewer Overflow Sampling Station Enhancements	410,000	26,545
Crescent Beach FM - Replacement	100,000	359,376
Drainage - Eagle Creek (Lower Section) Channel Restoration	500,000	—
Drainage - LWS Pump Station Programmable Logic Controller Replacements - Drainage	50,000	—
Drainage - Port Moody Storm Drain Rehabilitation	900,000	53,774
Drainage - Still Creek Culvert Rehabilitation (Gilmore section)	100,000	8,718
EMQC-Chemistry Laboratory	1,000,000	166,747
FSA Flow Metering Program	1,070,000	49,010
FSA River Crossing Scour Protection Program - Phase 1	500,000	4,145
FSA Sewer Relocations and Protections	1,650,000	—
FSA Statutory Right of Way Acquisitions Phase 1	3,500,000	2,046,123
Fraser Sewerage Area Integrated Resource Recovery (IRR) Study	429,000	31,142
Front Street Pressure Sewer Access Hatches Reinforcement	50,000	46,956
Gilbert/Brighouse Trunk Pressure Sewer Twinning Phase 2	6,887,000	—
Gilbert/Brighouse Trunk Pressure Sewer Twinning Phase 3	18,000,000	2,284,350
Gilbert/Brighouse Trunk Pressure Sewer Twinning Phase 4	10,000,000	1,402,772
Glenbrook CSO Gate Replacement	100,000	44,095
Glenbrook Combined Trunk Kingsway Sanitary Section	1,000,000	58,276
Glenbrook Combined Trunk Sewer Separation	50,000	89
Gleneagles Forcemain Replacement Phase 2	5,007,000	38,790
Gleneagles Pump Stations Improvements	5,835,000	2,797,927
Harbour Pump Station Discharge Header Repair and Valve Replacements	259,000	736,854
Harbour Pump Station Power Distribution Equipment Replacement	1,524,000	59,126
Harbour Sewerage Pump Station (HRB) - Suction Piping Replacement	850,000	12,753
Highbury Interceptor Diversion Junction Chamber Wall Rehabilitation	250,000	37,521
Jervis Pump Station 25kV Voltage Conversion	50,000	6,408
Jervis Sewerage Pump Station (JRV) - Suction Piping Replacement and Wet Well Modifications	500,000	3,306
Kent Pump Station High Voltage Switchgear Replacement	960,000	56,158
LWS Pump Station PLC Replacement Project	300,000	—
LWS Pump Station Programmable Logic Controller Replacements	300,000	—
LWS Pump Station Programmable Logic Controller Replacements	50,000	—
LWS Pump Station Programmable Logic Controller Replacements	50,000	—
Marshend Pump Station Capacity Upgrade	1,350,000	241,537
NSA Flow Metering Program	772,000	42,674

Liquid Waste Services	**Annual Capital Cash Flow**	**Year-to-date Actual Expenditures**
NSA Scour Protection Upgrades	50,000	25,294
NSI - River Road	1,500,000	—
NSI MH35 SSO Storage Tank	2,500,000	868,728
NSI Manson	1,150,000	733,397
NSSA Sewer Relocations and Protections	50,000	—
NVI Lynn Branch Siphon SSO Treatment	750,000	—
NWP Dip Replacement	1,500,000	—
New West Interceptor - Annacis Section 2	5,937,000	193,721
New West Interceptor Grit Chamber	250,000	—
New Westminster Interceptor Annacis Channel Crossing Scour Protection	2,000,000	—
New Westminster Interceptor Repair Columbia St. Section	200,000	100,264
New Westminster Interceptor West Branch and Columbia Extension Rehabilitation	3,000,000	114,891
North Road Trunk Sewer	500,000	10,999
North Road Trunk Sewer Phase 2	2,000,000	117,767
North Surrey Interceptor - Fraser River Crossing	500,000	72,964
North Surrey Interceptor - Port Mann Section - Odour Control	1,000,000	16,318
North Surrey Interceptor Program	250,000	176,336
North Surrey Interceptor Roebuck 112B Ave - Replacement	150,000	94,861
Ocean Park Trunk - Crescent Beach PS Section Replacement	400,000	—
Ocean Park Trunk Manholes Lining	1,000,000	—
Ocean Park Trunk Sewer - Air Management Facility	565,000	30,613
Other - Sewer Heat Projects	8,050,000	—
Port Coquitlam Pump Station Refurbishment	1,984,000	283,472
Port Moody Pump Station Capacity Upgrade	700,000	3,926
Production Way Facility Access and Parking Improvements	1,289,000	25,505
Production Way Operation Centre	5,645,000	161,862
Royal Ave PS Rehabilitation	8,800,000	1,550,404
SSI Delta - Air Management Facility Construction	1,000,000	88,667
SSI Influent Control Chamber Repair and Replace Gates	20,000	11,359
Sapperton Pump Station	500,000	240,199
Sapperton Pump Station Emergency Backup Power	1,895,000	31,823
Sewer Heat Projects - Surrey	6,000,000	—
South Surrey Interceptor Delta Section (SSD) Rehabilitation	400,000	53,635
South Surrey Interceptor Johnston Section	14,780,000	75,406
South Surrey Interceptor Rehabilitation-Scott Road Section	500,000	—
Stoney Creek Sanitary Trunk	3,650,000	318,749
Surrey Corrosion Control Facility Replacement	50,000	564
VSA Emergency Backup Power	2,750,000	429,991
VSA Flow Metering Program	2,359,000	49,913
VSA Grit Chamber Access Improvements Spanish Banks	2,000,000	52,365
VSA Sewer Relocations and Protections	500,000	212,899
VSA Statutory Right of Way Acquisitions 2024-2026	3,000,000	—
Westridge FM Replacement	6,250,000	47,364

Liquid Waste Services	**Annual Capital Cash Flow**	**Year-to-date Actual Expenditures**
Westridge Pump Stations 1 & 2 Refurbishment	5,575,000	15,128
White Rock Forcemain Rehabilitation	50,000	29,412
Other Projects	—	17,331
Total Collections	**198,344,000**	**17,734,671**
Treatment Plants		
AIWWTP Ammonia Removal Sidestream	700,000	74,344
AIWWTP Bar Screen #1 refurbishment	300,000	3,100
AIWWTP Centrifuge Schwing HPU replacement	1,000,000	461,106
AIWWTP Chemical Lab UPS System Replacement	150,000	8,912
AIWWTP Cogeneration Backup Power	200,000	122,015
AIWWTP Digester No. 5	2,000,000	33,364
AIWWTP Electrical Distribution System Protection Control and Monitoring	100,000	30,441
AIWWTP Hydrothermal Processing Pilot	14,500,000	601,546
AIWWTP ICS Replacement Program	1,500,000	133,605
AIWWTP IPS Pump Building Roof Replacement Phase 2	1,000,000	14,091
AIWWTP Influent System Remediation	1,395,000	78,834
AIWWTP Lubrication Storage Facility Conversion	1,150,000	—
AIWWTP O&M Building Refurbishment	300,000	—
AIWWTP Outfall Repair	250,000	—
AIWWTP Process Waste Drain Line Refurbishment	1,900,000	1,024
AIWWTP Replacement of Protective Relays	50,000	1,166
AIWWTP SCL Flow Control	300,000	132,855
AIWWTP SCL Flow Leveling Phase 2	300,000	132,855
AIWWTP Scum Pump Replacement	250,000	—
AIWWTP Sludge Control Building Electrical Room HVAC upgrade	900,000	27,330
AIWWTP Stage 5 Expansion - Optimization Works	2,000,000	5,279
AIWWTP Stage 5 Expansion Phase 2	1,400,000	4,320
AIWWTP Stage 5 Expansion Phase 2 - PDE	53,000,000	3,790,910
AIWWTP Stage 5 Expansion Phase 2b	10,000,000	2,628,350
AIWWTP Station Battery Replacement - PHASE 2	50,000	15,841
AIWWTP Trickling Filter Media & Distributor Arms & Ducting Replacement	3,520,000	69,905
AIWWTP UPS Condition Monitoring System	50,000	—
Annacis Influent System Surge Control Refurbishment	2,200,000	—
Annacis MCC 80 051, 80 070, 80 071 Replacement	50,000	35,952
Annacis Outfall System	26,999,000	1,534,560
Golden Ears Forcemain and River Crossing	209,000	53,264
IIWWTP - Biogas Lines Relocation	50,000	12,706
IIWWTP Biosolids Dewatering Facility	25,000	107,715
IIWWTP CEPT Polymer Line Replacement	250,000	695,106
IIWWTP CEPT Winterization	325,000	154,162
IIWWTP Digester 4 Roof Replacement & Mixing Replacement	50,000	39,495
IIWWTP ICS IPS Control Replacement	350,000	123,260

Liquid Waste Services	**Annual Capital Cash Flow**	**Year-to-date Actual Expenditures**
IIWWTP ICS Migration Program	500,000	—
IIWWTP ICS Replacement Program	200,000	2,271
IIWWTP IPS Drive Remediation	570,000	16,209
IIWWTP MCC/Power Distribution Assess/Replace - Phase 2	50,000	—
IIWWTP Medium Pressure Sludge Gas Blowers 3 & 4 Power Supply	600,000	4,858
IIWWTP Non-Domestic Trucked Liquid Waste Alternative	520,000	4,999
IIWWTP Outfall Refurbishment	2,500,000	29
IIWWTP PA Tanks Improvement	1,000,000	23,666
IIWWTP PA-Sed Tank & Gallery Wall Refurbishment	200,000	39,095
IIWWTP Replacement of CoGen Control System	125,000	536,243
IIWWTP Siphon Chamber Refurbishment	50,000	18,831
IIWWTP Solids Handling Refurbishment	50,000	—
IIWWTP Standby Diesel Generators	100,000	—
IIWWTP Surge Mitigation	200,000	—
IIWWTP Waste Gas Burner Redundancy	1,050,000	—
Iona Island Control & Instrumentation Replacement 2011	200,000	343,510
Iona Island Wastewater Treatment Plant	147,588,000	5,707,348
LIWWTP Admin Dewatering Building Roof Repair	675,000	8,111
LIWWTP Biogas Clean-up Project	50,000	36,545
LIWWTP Effluent Heat Recovery Project	5,000,000	99,545
LIWWTP Gravity Thickener Redundancy	150,000	107,389
LIWWTP Ground Fault Detection System Replacement	600,000	16,317
LIWWTP High Efficiency Boiler	500,000	—
LIWWTP ICS Electrical Distribution System Migration Program	1,500,000	—
LIWWTP ICS Replacement Program	2,000,000	21,539
LIWWTP PA Tank Odour Control System	75,000	—
LIWWTP PA-Sed Tank Refurbishment	310,000	27,638
LIWWTP Pilot Digestion Optimization Facility	200,000	52,137
LIWWTP Power Distribution Center Replacements	50,000	—
LIWWTP Power Reliability	2,017,000	30,286
LIWWTP SCL Refurbishment	500,000	37,330
LIWWTP Trickling Filter Refurbishment	716,000	76,263
NLWWTP 25 kV Substation Replacement	150,000	24,541
NLWWTP Ground Improvements	38,122,000	478,498
NLWWTP Outfall	3,931,000	158,997
NLWWTP Stage 1	13,481,000	12,820,201
NLWWTP Standby Diesel Generator	300,000	184
North Shore WWTP Secondary Upgrade, Conveyance and Decommissioning	454,825,000	87,622,133
Regional Biosolids Dryer AIWWTP	2,500,000	25,128,950
WWTPs Electrical System Studies & Upgrades	150,000	42,729
Other Projects	—	452,058
Total Treatment Plants	**812,078,000**	**145,065,857**
Total Liquid Waste Services	**$ 1,010,422,000**	**$ 162,800,528**

Regional Parks	**Annual Capital Cash Flow**	**Year-to-date Actual Expenditures**
Capital Development		
Capital Development - Burnaby Lake - Glencarin Greenway Connection	$ 2,000,000	$ —
Capital Development - Burns Bog Delta Nature Reserve Development	3,500,000	63,833
Capital Development - Campbell Valley - Perimeter Greenway Trail	1,500,000	35,613
Capital Development - Campbell Valley - Replacement of Little River Loop Boardwalk	1,750,000	—
Capital Development - Codd Wetland - Park Development	200,000	—
Capital Development - Deas Island - Design and Replace Sewage Disposal System For Day Use Area	250,000	—
Capital Development - Lynn Headwaters - Park Entry Bridge & Day Use Area	250,000	234,765
Capital Development - Lynn Valley - Cable Pool Bridge Replacement	150,000	—
Capital Development - North Langley Regional Park	5,000,000	—
Capital Development - Pacific Spirit - Beach Access Improvements	200,000	—
Capital Development - Pineridge Bridge Replacement	500,000	15,483
Capital Development - Second Canyon Lookout	500,000	—
Capital Development - Shoreline Stabilization	1,500,000	—
Capital Development - Upper Campbell Corridor / South Langley	500,000	—
Capital Development - West Creek Wetlands - Park Development	300,000	—
Capital Development- Feasibility Studies	300,000	12,853
Capital Replacement and Development - Belcarra - South Picnic Area and Cabins	3,000,000	66,755
Capital Replacement and Development - Capilano New Service Yard	500,000	47,850
Capital Replacement and Development - Grouse BCMC Realignment & Improvement	500,000	1,242
Capital Replacement and Development - Widgeon Marsh New Park Development	2,000,000	247,241
Other Projects	—	429,862
Total Capital Development	**24,400,000**	**1,155,497**
Parkland Acquisition Fund Projects		
Regional Land Acquisition	20,000,000	135,370
Total Parkland Acquisition Fund Projects	**20,000,000**	**135,370**
Total Regional Parks	**$ 44,400,000**	**$ 1,290,867**

Solid Waste Services	Annual Capital Cash Flow	Year-to-date Actual Expenditures
Landfills		
Coquitlam Landfill Gas Collection Upgrades Phase II	$ 1,000,000	$ 87,629
Coquitlam Landfill Maintenance East Closure	2,000,000	165,639
Coquitlam Landfill Maintenance Leachate Collection System Grade Realignment	900,000	—
Coquitlam Landfill Maintenance Pump Station Upgrade	1,650,000	3,710
Other Projects	—	6,000
Total Landfills	**5,550,000**	**262,978**
Recycling and Waste Centres		
Langley Recycling Depot Development	1,500,000	271,080
Langley Recycling and Waste Centre Site Reconfiguration	2,000,000	—
Maple Ridge Recycling and Waste Centre Upgrades	750,000	—
North Surrey Compactor	100,000	202,886
North Surrey Recycling Depot Development	1,000,000	—
North Surrey Site Reconfiguration	500,000	—
Weigh Scale Replacement	2,500,000	—
Other Projects	—	600
Total Recycling and Waste Centres	**8,350,000**	**474,566**
Waste To Energy Facilities		
Biosolids Processing	7,500,000	297,431
Primary Economizer Replacement	100,000	—
WTE Facility Air System Piping Replacement	300,000	—
WTE Facility Bottom Ash Crane Replacement	800,000	22,565
WTE Facility Compressed Air System Replacement	1,200,000	497,925
WTE Facility District Energy	5,500,000	232,762
WTE Facility Electrical Transformers Replacement	1,100,000	17,901
WTE Facility Fabric Filter Hopper and Pulse Header Refurbishment	2,505,000	201,384
WTE Facility Feedwater Pump Replacement	100,000	103,060
WTE Facility Fire Suppression System	400,000	320,289
WTE Facility Generation Bank Replacement	1,000,000	3,579
WTE Facility Generator Island Mode	3,000,000	—
WTE Facility Programmable Logic Controllers Replacement	500,000	—
WTE Facility Pug Mill Enclosure Ventilation System Replacement	500,000	—
WTE Facility Refuse Crane	2,100,000	95,966
WTE Facility Refuse Pit Bunker Door Replacement	400,000	—
WTE Facility Secondary Economizers Replacement	1,200,000	3,894
WTE Facility Soot Blower Piping Replacement	300,000	—
WTE Facility Stack Refurbishment	250,000	—
Other Projects	—	172,512
Total Waste To Energy Facilities	**28,755,000**	**1,969,268**
Total Solid Waste Services	**$ 42,655,000**	**$ 2,706,813**

Water Services	**Annual Capital Cash Flow**	**Year-to-date Actual Expenditures**
Water Mains		
Angus Drive Main	$ 500,000	$ —
Annacis Main No. 2 - Queensborough Crossover Improvement	150,000	—
Annacis Main No. 2 and Barnston Island Main Online Chlorine and pH Analyzers	450,000	207,437
Annacis Main No. 5 (North)	10,500,000	310,830
Annacis Main No. 5 (South)	15,300,000	279,679
Annacis Water Supply Tunnel	65,000,000	25,493,898
Burnaby Mountain Main No. 2	300,000	—
Cambie-Richmond Water Supply Tunnel	2,200,000	278,108
Central Park Main No. 2 (10th Ave to Westburnco)	3,050,000	164,419
Central Park Main No. 2 (Patterson to 10th Ave)	17,900,000	4,326,620
Clayton Langley Main No. 2	550,000	2,156
Coquitlam Main No. 4 (Cape Horn)	6,590,000	311,400
Coquitlam Main No. 4 (Central Section)	5,730,000	1,349,152
Coquitlam Main No. 4 (South Section)	65,500,000	6,712,097
Douglas Road Main No. 2 (Flow Meter 169) Replacement	750,000	4,166
Douglas Road Main No. 2 (Vancouver Heights Section)	300,000	20,479
Douglas Road Main No. 2 Still Creek	3,050,000	2,057,394
Douglas Road Main Protection	50,000	—
Haney Main No. 4 (West Section)	950,000	104,917
Improvements to Capilano Mains No. 4 and 5	250,000	—
Kennedy Newton Main	20,100,000	7,138,446
Lulu Island - Delta Main - Scour Protection Phase 2	50,000	—
Lulu-Delta Water Supply Tunnel	1,300,000	52,914
Lynn Valley Road Main, Seymour Main No. 3 & Seymour Main No. 4 Aerial Crossings Rehabilitation	850,000	175,447
Maple Ridge Main West Lining Repairs	500,000	—
Newton Reservoir Connection	400,000	—
Palisade Outlet Works Rehabilitation	1,500,000	45,388
Pitt River (Haney) Water Supply Tunnel	25,000,000	122,675
Port Mann Main No. 2 (South)	50,000	2,765
Port Mann Main No. 2 (South) Whalley Reservoir Feeder Main	500,000	—
Port Mann No. 1 South Section Decommissioning	150,000	—
Port Moody Main No. 1 Christmas Way Relocation	100,000	—
Port Moody Main No. 3 Scott Creek Section	8,800,000	386,951
Queensborough Main Royal Avenue Relocation	100,000	—
Rehabilitation of AN2 on Queensborough Bridge	100,000	986
Relocation and Protection for MOTI Expansion Project Broadway	100,000	—
Relocation and Protection for MOTI George Massey Crossing Replacement	100,000	—
Relocation and Protection for Translink Expansion Project Surrey Langley SkyTrain	100,000	21,331
Sapperton Main No. 1 New Line Valve and Chamber	300,000	34,141
Sapperton Main No. 2 North Road Relocation and Protection	100,000	—
Scour Protection Assessments and Construction General	550,000	150

Water Services	**Annual Capital Cash Flow**	**Year-to-date Actual Expenditures**
Second Narrows Crossing 1 & 2 (Burrard Inlet Crossing Removal)	400,000	—
Second Narrows Water Supply Tunnel	15,000,000	4,249,892
Seymour Main No. 2 Joint Improvements	50,000	8,505
Seymour Main No. 5 III (North)	2,000,000	95,282
South Delta Main No. 1 - Ferry Road Check Valve Replacement	100,000	16,531
South Delta Mains - 28 Ave Crossover	500,000	19,255
South Fraser Storage Yard	1,500,000	36,289
South Surrey Main No. 1 Nickomekl Dam Relocation	1,100,000	133,117
South Surrey Main No. 2	1,150,000	165,246
South Surrey Main No. 2 Nickomekl Dam Prebuild	500,000	—
South Surrey Supply Main (Serpentine River) Bridge Support Modification	50,000	13,433
Stanley Park Water Supply Tunnel	64,652,000	19,536,430
Tilbury Junction Chamber Valves Replacement with Actuators	450,000	14,991
Tilbury Main North Fraser Way Valve Addition	150,000	—
Water Chamber Improvements and Repairs	250,000	5,807
Water Meter Upgrades	1,500,000	345,585
Water Optimization - Instrumentation	2,150,000	194,649
Water Optimization Automation & Instrumentation Phase 1	250,000	15,489
Whalley Kennedy Main No. 2	500,000	70,930
Whalley Main	500,000	35,892
Other Projects	—	6,588
Total Water Mains	**352,572,000**	**74,567,853**
Pump Stations		
Barnston/Maple Ridge Pump Station - Back-up Power	4,000,000	—
Burnaby Mountain Pump Station No. 2	1,100,000	32,651
Cape Horn Pump Station No. 3	3,000,000	429,358
Capilano Raw Water Pump Station - Back-up Power	22,000,000	8,503,364
Capilano Raw Water Pump Station Bypass PRV Upgrades	2,100,000	4,523
Central Park WPS Starters Replacement	3,000,000	22,654
Grandview Pump Station Improvements	1,000,000	41,239
Newton Pump Station No. 2	13,650,000	286,663
Westburnco Pump Station - Back-up Power	1,500,000	9,467
Westburnco Pump Station No. 2 VFD Replacements	1,000,000	7,239
Other Projects	—	5,203
Total Pump Stations	**52,350,000**	**9,342,359**
Reservoirs		
Burnaby Mountain Tank No. 2 and No. 3	600,000	30,962
Cape Horn Reservoir Condition Assessment and Structural Repair	200,000	—
Capilano Energy Recovery Facility 66' PRV Replacement	500,000	—
Capilano Energy Recovery Facility Operational Upgrades	450,000	3,715
Central Park Reservoir Structural Improvements	200,000	—

Water Services	**Annual Capital Cash Flow**	**Year-to-date Actual Expenditures**
Dechlorination for Reservoir Overflow and Underdrain Discharges	800,000	110,924
Fleetwood Reservoir	5,000,000	5,269,578
Hellings Tank Operational Upgrades	800,000	50,995
Kersland Reservoir No. 1 Structural Improvements	100,000	—
Pebble Hill Reservoir No. 3 Seismic Upgrade	50,000	—
Pebble Hill Reservoir Seismic Upgrade	500,000	8,581
Prospect Reservoir Knotweed Removal and Drainage Improvements	500,000	21,899
Reservoir Isolation Valve Automation	1,250,000	—
Reservoir Preliminary Structural Assessments (Annual Inspection 2023 to 2025)	1,100,000	138,276
Reservoir Sampling Kiosks - Multi Location	550,000	16,720
Sasamat Reservoir Refurbishment	200,000	52,499
Sunnyside Reservoir Units 1 and 2 Seismic Upgrade	2,100,000	82,791
Vancouver Heights System Resiliency Improvements	300,000	1,337,369
Other Projects	—	16,515
Total Reservoirs	**15,200,000**	**7,140,825**
Treatment Plants		
CLD and SFD Lead Paint Removal, Surface Crack Injection and General Corrosion Mitigation	1,550,000	86,149
CWTP CO2 System Improvements	500,000	5,309
CWTP Mobile Disinfection System	350,000	31,858
CWTP Ozone Generation Upgrades for Units 2 & 3	1,200,000	11,595
CWTP Ozone Sidestream Pipe Heat Trace and Insulation	100,000	19,628
CWTP Ozone Sidestream Pump VFD Replacement	450,000	31,966
Coquitlam Lake Water Supply - Intake No. 2 & Tunnel	10,750,000	2,084,405
Coquitlam Lake Water Supply - Water Treatment	20,000,000	2,530,078
Industrial Communication Manager Migration	500,000	—
Loch Lomond Outlet Works Rehabilitation	200,000	17,215
Microbiology Laboratory Expansion	200,000	—
Online Chlorine and pH Analyzers Phase 1	1,500,000	19,941
SCFP - Greenwood and Back Wash Water Supply Pumps & SCOUR Blower VFD Replacement	800,000	—
SCFP Centralized Compressed Air System	500,000	3,029
SCFP Clearwell Baffle Replacement Pilot	1,650,000	32,887
SCFP Clearwell Membrane Replacement	200,000	32,543
SCFP Floc Tank Baffle Replacement and Ladder Installation to Improve Accessibility	2,400,000	25,644
SCFP OMC Building Expansion	2,300,000	14,354
SCFP Polymer System Upgrade	150,000	13,612
Small Logic Controller Control System Upgrades Phase 1	600,000	20,034
Other Projects	—	800
Total Treatment Plants	**45,900,000**	**4,981,046**
Others		
CLD & SFD Fasteners Replacement & Coating Repairs	150,000	—

Water Services	**Annual Capital Cash Flow**	**Year-to-date Actual Expenditures**
Capilano Raw Water Pump Station VFD Upgrades	1,600,000	—
Capilano Reservoir and Seymour Reservoir Dam Safety Boom Replacement	5,310,000	60,259
Capilano Watershed Security Gatehouse	1,900,000	1,282,320
Cleveland Dam - Lower Outlet HBV Rehabilitation	300,000	690,074
Cleveland Dam Drumgate Seal Replacement	250,000	181,504
Cleveland Dam Power Resiliency Improvements	50,000	33,330
Cleveland Dam Public Warning System and Enhancements	2,000,000	269,134
Cleveland Dam Seismic Stability Evaluation	300,000	45,240
Facilities O&M Documentation Development - Phase 1	800,000	36,160
Lake City HVAC Upgrade	600,000	594
Lower Seymour Conservation Reserve Learning Lodge Replacement	250,000	—
Newton Rechlorination Station No. 2	400,000	—
Rechlorination Station Upgrades	2,000,000	461,478
Rice Lake Dams Rehabilitation	250,000	16,865
SCADA Moscad Server & ICS Historian Expansion & Partitioning	50,000	11,961
Seymour Falls Dam Public Warning System	800,000	24,860
Seymour Falls Dam Seismic Stability Assessment	500,000	35,712
South Fraser Works Yard	1,000,000	34,886
Other Projects	—	4,050
Total Others	**18,510,000**	**3,188,427**
Total Water Services	**$ 484,532,000**	**$ 99,220,510**

TREASURY RESULTS

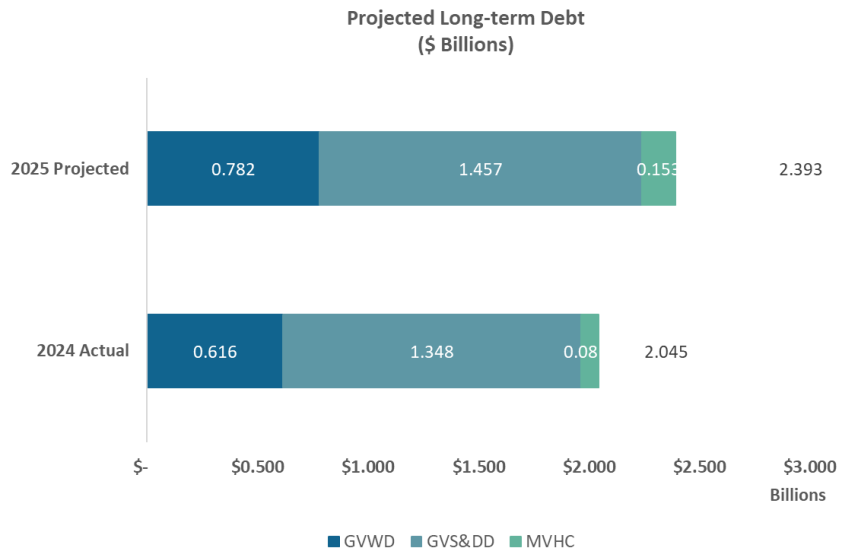
Long-term debt

Long-term debt, net of sinking funds reflects the amount of long-term borrowing forecasted to the end of 2025. Sinking funds consist of principal payments paid to MFA over the term of the debenture issue. These payments are invested by MFA which along with the interest earned will offset the debenture obligation.

As a result of capital projects progressing to completion and or ramping up in 2025, the total projected MFA borrowing for 2025 is $600.0M, whereas the total MFA borrowing in 2024 was $350.0M. The projected debt below includes $67.2M of construction financing loans for MVHC. The total new projected borrowing in 2025 is $667.2M, aligned with the January 2025 forecasted borrowing.

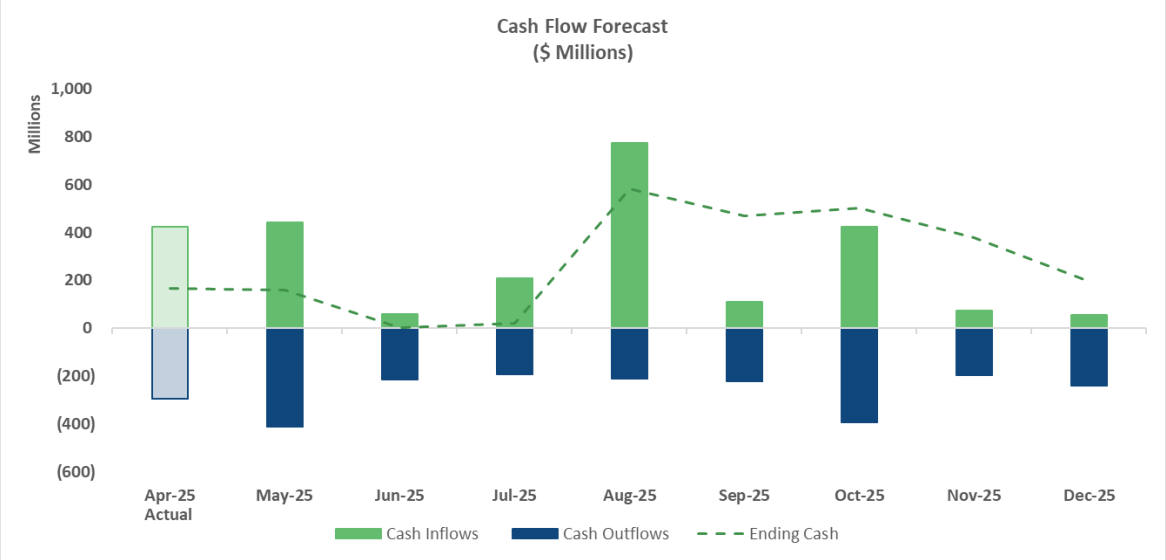
Furthermore, the MFA long-term borrowing rate for the 2025 Spring borrowing of $350.0M was 3.55%, which is lower than the Spring 2024 rate of 4.44% indicating a softening in long-term interest rates. The impact of the lower amount of borrowing and lower interest rates results in a lower than expected forecasted debt service ratio (interest and principal payments to revenue) from 17.9% to 16.3%.

By the end of 2025, long-term debt is expected to increase by $347.8M to $2.393B compared to $2.045B at the end of 2024. The increase is largely from the $667.2M projected new debenture debt issuances, offset by $319.4M annual debenture payments and the MFA sinking fund asset.

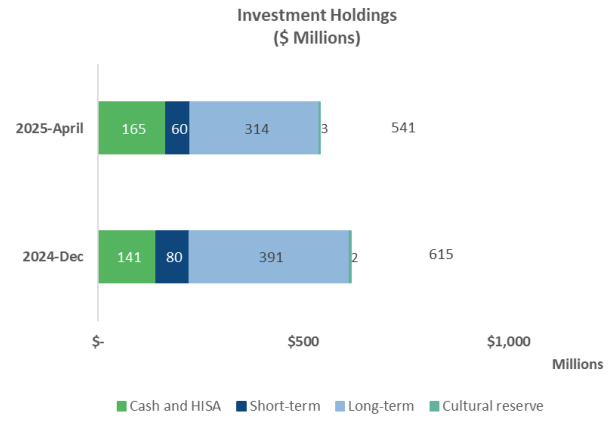


Cash and Investments

The chart below provides the April 2025 actual cash position and the cash flow forecast for Metro Vancouver from May 2025 to December 2025. Treasury is continuously reviewing cash and reserve balances to ensure adequate liquidity to sustain operations and managing risk while also making efficient use of its cash.



The charts below provide summaries of the cash and investment holdings as of April 30, 2025 compared to December 31, 2024, as well as the investment maturities for the portfolio. Cash and investments has decreased as of April 30, 2025 from $614.6M at December 31, 2024 to $541.0M. This is largely due to spend in capital. There is seasonality in cash flows, where cash levels spike in the third quarter when tax levy revenue is received. The cash balance will tread downwards by the end of 2025 as the tax levy received in the third quarter is utilized to fund 2025 budgeted operating and capital expenses. As interest rates continue to decrease and capital spend increases, the District's will participate in the Spring and Fall MFA issues for 2025. Treasury is continuously reviewing cash and reserve balances to ensure adequate liquidity to sustain operations and managing risk while also making efficient use of its cash.



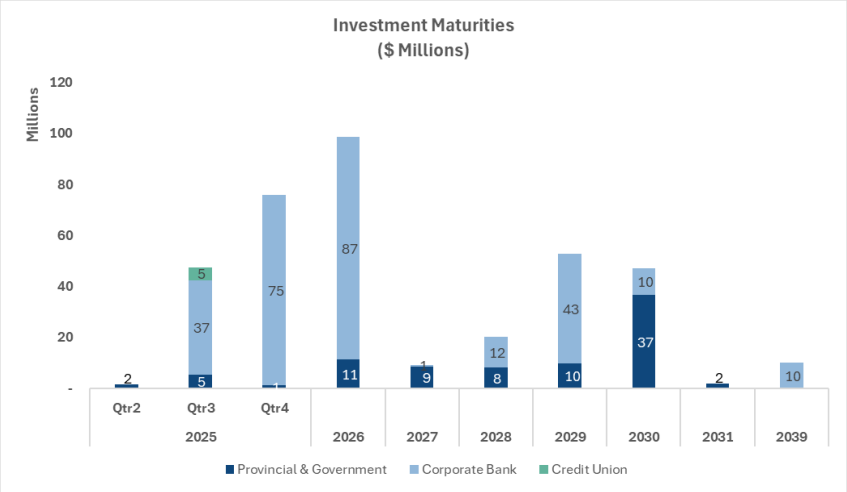
(in thousands of dollars)	**2025-April**	**2024-December**
Cash and high-interest saving accounts	$ 164,540	$ 141,114
Short-term investments *	60,000	80,000
Long-term investments **	313,823	391,294
Cultural reserve investments ***	2,635	2,207
Total Cash & Investment Holdings	**$ 540,998**	**$ 614,614**

* Short-term investments have terms of less than one year and include bankers' acceptances, Canadian bank bonds and credit union term deposits.

** Long-term investments have terms of greater than one year and include Canadian bank bonds, guaranteed investment certificates, credit union term deposits and MFA pooled funds.

*** Cultural reserve investments are reserve for contribution to cultural activities.

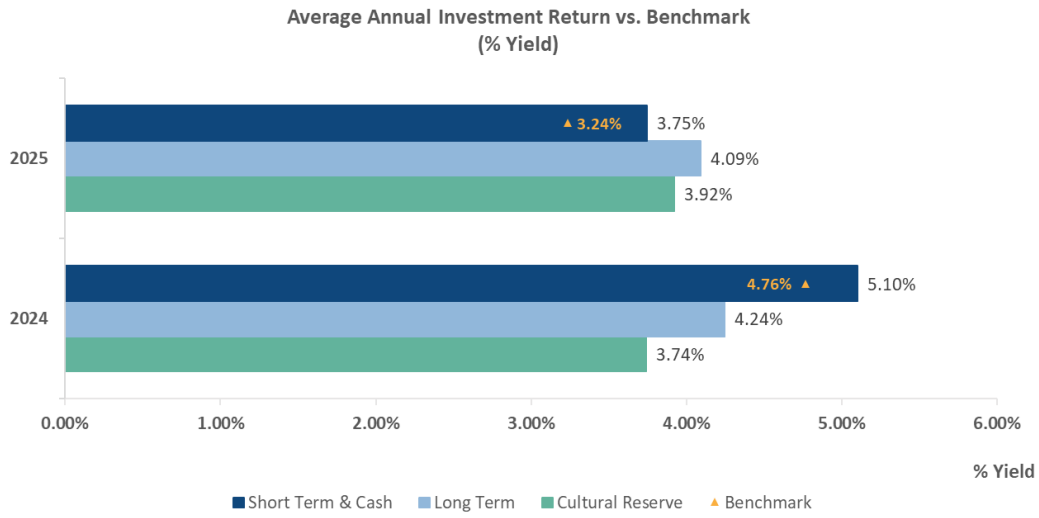
Investments are held to 2039, however the majority of the portfolio will mature within two years. Remaining investment maturities in 2025 are expected to be $125.0M. Treasury will strategically reinvest funds or convert to cash if cash resources are required.



Investment Returns

As of April 2025, the total weighted average return is 3.89%, lower than 4.52% reported in December 2024. The short-term average investment returns as of April 2025 have decreased from 2024 to 3.75%, due to the decrease in banking prime rate, driven by the Bank of Canada policy decisions. Long-term returns decreased from 4.24% to 4.09% due maturities that were not re-invested. As interest rates are expected to decline, Metro Vancouver's rate of return is also expected to decline as maturing investments will be re-invested into the current market.

The chart below summarizes the investment returns by investment category against benchmark rates. The chart indicates the return on short-term investments of 3.75% has surpassed the MFA benchmark of 3.24%:



Financial Position Indicators

Illustrated below is additional insight into Metro Vancouver's financial position. These ratios measure Metro Vancouver's current performance compared to budget and prior year.

	2025-Budget	2025-Forecast	2024-Dec
Current Ratio	-	-	2.4
Debt Servicing	17.9%	16.3%	18.3%
Interest Burden	7.6%	5.9%	6.6%
Interest Revenue	$ 12.4M	$ 20.1M	$ 30.2M

Current ratio is calculated as current assets divided by current liabilities. The current ratio indicates cash exceeded our current obligations by 2.4 times at December 31, 2024. The organizations' financial assets are more than sufficient to offset the amount of short-term obligations.

Debt servicing costs is a calculation of long-term debt principal and interest payments divided by revenue. Interest burden is a component of the debt servicing costs, interest

payments divided by revenue. The forecasted (16.3%) ratio is less than budgeted due to the projected 2025 borrowings being less than anticipated from lower than anticipated capital spending and interest rates.

Investment interest revenue as of December 31, 2024 exceeded budget by $17.8M due to locking in high interest investments in prior years.

PROCUREMENT

Awarded Procurement

- The tables below provide:
    - The number and value of awards approved by the Metro Vancouver Board, as well as those approved by the Corporation in excess of $500,000 that are not awarded by the Board in accordance with the existing Board-approved Procurement Policy. The figures only include awards with contracts that have been fully executed as of April 30, 2025.
    - Three awards were approved by the Board in the four months of 2025, accounting for 3% of the total number of awards but approximately 98% of the total dollar value awarded.

Table 1. Number of Contracts Awarded

Award Type	**Year-to-date April 2025**	**2024**	**2023**	**2022**
Board Awarded	3	20	16	20
Corporate Awarded	101	101	51	53
Total	104	121	67	73

Table 2. Value of Contracts Awarded

Award Type	**Year-to-date April 2025**	**2024**	**2023**	**2022**
Board Awarded	$ 2,209,304,212	$ 911,002,450	$ 465,895,019	$ 434,664,449
Corporate Awarded	48,928,675	176,908,632	71,980,936	89,019,028
Total	**$ 2,258,232,887**	**$ 1,087,911,082**	**$ 537,875,955**	**$ 523,683,477**

Awarded Bids – January to April 2025

The following contracts have been awarded by Metro Vancouver. Contracts have been entered into with the vendors offering the best value to the Corporation determined in accordance with the evaluation criteria, factors or methods previously disclosed in the public solicitation documents.

Results of Open Public Competitive Procurements - Awards from January to April 2025

Competition #	Competition Type	Competition Description	Awarded Date	Vendor Name	Awarded Amount	Awarded
24-576	SS/NOIC	Properties Interest Information Management System Maintenance and Licenses	01-Jan-25	ENKON Information Systems Inc.	$ 189,410	Yes
24-316	RFP	Cleveland Dam and Seymour Falls Dam Safety Boom Condition Assessments	06-Jan-25	Klohn Crippen Berger Ltd.	$ 109,177	Yes
24-316	RFP	Cleveland Dam and Seymour Falls Dam Safety Boom Condition Assessments	06-Jan-25	AtkinRealis	NA	No
24-316	RFP	Cleveland Dam and Seymour Falls Dam Safety Boom Condition Assessments	06-Jan-25	KGS Group	NA	No
24-316	RFP	Cleveland Dam and Seymour Falls Dam Safety Boom Condition Assessments	06-Jan-25	Revelstoke Design Services Ltd.	NA	No
24-316	RFP	Cleveland Dam and Seymour Falls Dam Safety Boom Condition Assessments	06-Jan-25	WSP Canada Inc.	NA	No
24-430	RFP	AIR EMISSIONS AND EMISSION CONTROL TECHNOLOGIES ASSESSMENT	07-Jan-25	Envirochem Services Inc.	$ 94,350	Yes
24-430	RFP	AIR EMISSIONS AND EMISSION CONTROL TECHNOLOGIES ASSESSMENT	07-Jan-25	Ramboll Canada Inc.	NA	No
24-437	RFP	2025 Fraser River ADCP Study	07-Jan-25	ASL Environmental Sciences Inc.	$ 82,196	Yes
24-437	RFP	2025 Fraser River ADCP Study	07-Jan-25	WSP Canada Inc.	NA	No
24-466	RFP	Lynn Headwaters Regional Park Engineering Design	07-Jan-25	Dunne Enterprises Ltd.	$ 139,230	Yes
24-466	RFP	Lynn Headwaters Regional Park Engineering Design	07-Jan-25	Entuitive	NA	No
24-466	RFP	Lynn Headwaters Regional Park Engineering Design	07-Jan-25	ISL Engineering & Land Services Ltd.	NA	No
24-466	RFP	Lynn Headwaters Regional Park Engineering Design	07-Jan-25	Parsons Inc.	NA	No
24-466	RFP	Lynn Headwaters Regional Park Engineering Design	07-Jan-25	Scouten & Associates Engineering Ltd.	NA	No
24-466	RFP	Lynn Headwaters Regional Park Engineering Design	07-Jan-25	Stantec Consulting Ltd.	NA	No
23-233	RFP	Consulting Engineering Services for North Surrey Interceptor Roebuck Section (NSR) Replacement	08-Jan-25	WSP Canada Inc.	$ 900,187	Yes
24-563	SS/NOIC	BASIS Software Subscription and Support	08-Jan-25	Corporate Services LLC	$ 200,784	Yes
24-046	Co-Operative Procurement	Supply and Delivery of Canoe Services - Leasing of Print Shop	10-Jan-25	Xerox Canada	$ 292,203	Yes
24-185	RFP	Iona WWTP Digester #2 Cleaning Services	15-Jan-25	GFL Environmental Services Inc.	$ 737,302	Yes
24-046	Co-Operative Procurement	Supply and Delivery of Canoe Services - Splunk Enterprise Annual Subscription renewal	16-Jan-25	CDW Canada Corporation	$ 80,802	Yes
24-046	Co-Operative Procurement	Supply and Delivery of Canoe Services - Adobe Creative Cloud licenses Renewal	16-Jan-25	CDW Canada Corporation	$ 87,250	Yes
24-484	RFP	Fraser River Environemental Monitoring Program – 2025 Water Monitoring	16-Jan-25	WSP Canada Inc.	$ 950,000	Yes
24-484	RFP	Fraser River Environemental Monitoring Program – 2025 Water Monitoring	16-Jan-25	Ausenco Engineering Canada Inc.	NA	No
24-484	RFP	Fraser River Environemental Monitoring Program – 2025 Water Monitoring	16-Jan-25	Triton Environmental Consultants	NA	No
23-205	RFP	Supply and Delivery of One E-House & Switchgear for Harbour Pump Station Power Distribution System Replacement	21-Jan-25	RIC Power Corp.	$ 1,361,650	Yes
23-205	RFP	Supply and Delivery of One E-House & Switchgear for Harbour Pump Station Power Distribution System Replacement	21-Jan-25	Crown Technical Systems	NA	No
24-026	ITT	Electrical Installation and Commissioning for Scum Dipper PLC Replacement at LuLu Island Wastewater Treatment Plant (LIWWTP)	21-Jan-25	J A Electric Inc.	$ 162,775	Yes
24-026	ITT	Electrical Installation and Commissioning for Scum Dipper PLC Replacement at LuLu Island Wastewater Treatment Plant (LIWWTP)	21-Jan-25	Ross Morrison Electrical Ltd.	NA	No
24-026	ITT	Electrical Installation and Commissioning for Scum Dipper PLC Replacement at LuLu Island Wastewater Treatment Plant (LIWWTP)	21-Jan-25	Gifford Electric Ltd.	NA	No
24-046	Co-Operative Procurement	Supply and Delivery of Canoe Services - Vehicle GPS / Telematics Services	21-Jan-25	AdvantageOne Technology Inc.	$ 1,450,000	Yes
24-151	RFP	Supply and Delivery of Transformers for Standby Power System for the Iona Island Wastewater Treatment Plant (IIWWTP) Projects	22-Jan-25	Boundary Electric (1985) Ltd.	$ 680,098	Yes
24-151	RFP	Supply and Delivery of Transformers for Standby Power System for the Iona Island Wastewater Treatment Plant (IIWWTP) Projects	22-Jan-25	Wesco Distribution Canada Co.	NA	No
24-151	RFP	Supply and Delivery of Transformers for Standby Power System for the Iona Island Wastewater Treatment Plant (IIWWTP) Projects	22-Jan-25	Raelkon Teams	NA	No

Competition #	Competition Type	Competition Description	Awarded Date	Vendor Name	Awarded Amount	Awarded
24-555	SS/NOIC	Rogers Relocation for the Connection	22-Jan-25	Rogers Communications Canada Inc.	$ 175,508	Yes
24-443	SS/NOIC	Consulting Services For District Energy Business Case	23-Jan-25	Reshape Infrastructure Strategies	$ 100,000	Yes
23-281	RFP	Supply and Delivery of One Standby Diesel Generator and Switchgear	24-Jan-25	Finning International Inc.	$ 3,550,104	Yes
23-281	RFP	Supply and Delivery of One Standby Diesel Generator and Switchgear	24-Jan-25	Cullen Diesel Power Ltd.	NA	No
23-281	RFP	Supply and Delivery of One Standby Diesel Generator and Switchgear	24-Jan-25	Wesco Distribution Canada Co.	NA	No
23-281	RFP	Supply and Delivery of One Standby Diesel Generator and Switchgear	24-Jan-25	Cummins Sales and Service	NA	No
21-457	RFQ	Northshore Wastewater Treatment Plant (NSWWTP) Project - C2	27-Jan-25	PCL Constructors Westcoast Inc.	$1,950,000,000	Yes
24-182	RFP-MA	Design Consulting Services - for CAM (MLP and LRB/LHS)	27-Jan-25	E. Lees & Associates Consulting Ltd.		Yes
24-182	RFP-MA	Design Consulting Services - for CAM (MLP and LRB/LHS)	27-Jan-25	Hapa Landscape Architecture		Yes
24-182	RFP-MA	Design Consulting Services - for CAM (MLP and LRB/LHS)	27-Jan-25	ISL Engineering & Land Services Ltd.	$ 1,000,000	Yes
24-182	RFP-MA	Design Consulting Services - for CAM (MLP and LRB/LHS)	27-Jan-25	R.F. Binnie & Associates		Yes
24-182	RFP-MA	Design Consulting Services - for CAM (MLP and LRB/LHS)	27-Jan-25	VDZ+A Consulting Inc.		Yes
24-572	RFSO	Creative Services	27-Jan-25	Wasserman Advertising	$ 180,000	Yes
24-572	RFSO	Creative Services	27-Jan-25	Slingshot Communications		Yes
24-256	RFP	Northwest Langley WWTP TF Bypass Gate Replacement	28-Jan-25	Mitchell Installations Ltd.	$ 439,579	Yes
24-256	RFP	Northwest Langley WWTP TF Bypass Gate Replacement	28-Jan-25	Pomerleau Inc.	NA	No
24-256	RFP	Northwest Langley WWTP TF Bypass Gate Replacement	28-Jan-25	Clearway Construction Inc.	NA	No
23-353	RFP-MA	Electrical, Instrumentation and Control (EIC) Engineering Consulting Services for Small Automation Projects	30-Jan-25	Tetra Tech Canada Inc.		Yes
23-353	RFP-MA	Electrical, Instrumentation and Control (EIC) Engineering Consulting Services for Small Automation Projects	30-Jan-25	QCA Systems Ltd.		Yes
23-353	RFP-MA	Electrical, Instrumentation and Control (EIC) Engineering Consulting Services for Small Automation Projects	30-Jan-25	BBA Engineering Ltd.	$ 5,000,000	Yes
23-353	RFP-MA	Electrical, Instrumentation and Control (EIC) Engineering Consulting Services for Small Automation Projects	30-Jan-25	Stantec Consulting Ltd.		Yes
23-353	RFP-MA	Electrical, Instrumentation and Control (EIC) Engineering Consulting Services for Small Automation Projects	30-Jan-25	Clean Energy Consulting Inc.		Yes
23-353	RFP-MA	Electrical, Instrumentation and Control (EIC) Engineering Consulting Services for Small Automation Projects	30-Jan-25	Carollo Engineers Canada Ltd.	NA	No
23-353	RFP-MA	Electrical, Instrumentation and Control (EIC) Engineering Consulting Services for Small Automation Projects	30-Jan-25	Kerr Wood Leidal Associates Ltd.	NA	No
23-353	RFP-MA	Electrical, Instrumentation and Control (EIC) Engineering Consulting Services for Small Automation Projects	30-Jan-25	CIMA Canada Inc.	NA	No
23-353	RFP-MA	Electrical, Instrumentation and Control (EIC) Engineering Consulting Services for Small Automation Projects	30-Jan-25	enCompass Electrical Solutions	NA	No
23-353	RFP-MA	Electrical, Instrumentation and Control (EIC) Engineering Consulting Services for Small Automation Projects	30-Jan-25	Flexcell Engineering	NA	No
23-353	RFP-MA	Electrical, Instrumentation and Control (EIC) Engineering Consulting Services for Small Automation Projects	30-Jan-25	Automaterra Systems Inc.	NA	No
23-353	RFP-MA	Electrical, Instrumentation and Control (EIC) Engineering Consulting Services for Small Automation Projects	30-Jan-25	Wellingdale Group Inc.	NA	No
24-391	RFP	Columbia Forcemain Cured in Place Pipe Rehabilitation - Early Works	31-Jan-25	Michels Canada Co.	$ 200,000	Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	669251 Alberta Ltd		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	9D Analytics LLC		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Advanteca Consulting Inc		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	AMTG Consulting Ltd.	$ 6,000,000	Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Amy Tsang Landscape Architect		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Aqua Libra Consulting Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	ASHO Services Inc.		Yes

Competition #	Competition Type	Competition Description	Awarded Date	Vendor Name	Awarded Amount	Awarded
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Ausenco Engineering Canada Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Better Projects Incorporated		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	BTY Consultancy Group Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Carollo Engineers Canada Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	CDM Smith		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Charter Project Delivery Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Colliers Project Leaders Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Collings Johnston Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Core6 Environmental Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Danax Projects Ltd		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Deloitte		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	EIC Solutions Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Ella Advisory Services		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Emelko Advisory Services		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	ERM Canada Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Ernst & Young LLP		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Excel Advisory Services Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	EXP Services Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Francl Architecture Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	GEI Consultants		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Gerin Seismic Design Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	GHD Limited		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Gregg Korbin		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	HHI Services Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	ISL Engineering & Land Services		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Jennifer Davies Consulting Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Ken Abraham Consulting		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Kerr Wood Leidal Associates Limited		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	KPMG LLP		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Lanarc		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	LARIC Capital		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Lead EPC Consultants Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Legacy Environmental Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Local Practice Architecture & Design Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Lucent Quay Consulting Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Maven Consulting Limited		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Mott MacDonald Canada		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	New Energy Marine Organization (NEMO) Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	One-Eighty Consulting Group Inc		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Platypus Creative Group Communications		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	PMA Project Controls Canada ULC		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Potentialize Consulting Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	PricewaterhouseCoopers LLP		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Project Talent Acquisition Group Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	R.F. Binnie & Associates Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	RAM Engineering Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Reshape Infrastructure Strategies Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Ross W Boulanger (sole proprietor)		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Ryan Ziels		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Sedgwick Strategies Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Southpaw Learning Plan		Yes

Competition #	Competition Type	Competition Description	Awarded Date	Vendor Name	Awarded Amount	Awarded
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Stratice Consulting Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Tiree Facility Solutions Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Tranmotion Services Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Trilobite Consulting Limited		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	W2 Consulting Ltd.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Westmar Advisors Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Woodplc		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	WSP Canada Inc.		Yes
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Laura Killam Architecture	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Associated Engineering (B.C.) Ltd.	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Causeway Consulting Inc.	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	GM BluePlan Engineering Limited	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Hudson Optimization Consulting	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	ic Infrastructure Corporation	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Inexertus Integrated Project Management Inc.	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Inform Energy Solutions Corporation	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Leading EPC Consultants Inc.	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	MEMAR Value Strategies Inc.	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Monica B. Emelko	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Neda Roohnia Landscape Design	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Sanjeev Malushte (Sole Proprietor)	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	Skylark Management Corp.	NA	No
23-262	RFP	Infrastructure Project Advisory Consulting Services	04-Feb-25	TerraFauna Wildlife Consulting, Inc	NA	No
23-155	RFP	Construction Services for Newton Pump Station No.2 - Early Works Services	05-Feb-25	Pomerleau Inc.	$ 200,000	Yes
23-155	RFP	Construction Services for Newton Pump Station No.2 - Early Works Services	05-Feb-25	Maple Reinders Constructors Ltd.	NA	No
23-155	RFP	Construction Services for Newton Pump Station No.2 - Early Works Services	05-Feb-25	Graham Infrastructure LP	NA	No
23-155	RFP	Construction Services for Newton Pump Station No.2 - Early Works Services	05-Feb-25	Kenaidan Contracting Ltd.	NA	No
23-155	RFP	Construction Services for Newton Pump Station No.2 - Early Works Services	05-Feb-25	North America Construction (1993) Ltd.	NA	No
24-169	RFP	Supply and Delivery of Peracetic Acid Solution, Dosage System, Equipment Maintenance and Technical Services	05-Feb-25	USP Technologies Canada ULC	$ 1,300,000	Yes
24-567	SS/NOIC	Maintenance Task Analysis Support	10-Feb-25	MV Reliability Services	$ 137,835	Yes
24-574	SS/NOIC	Archaeological Consulting Services for the Construction Phase of Hudson Street Forcemain Emergency Replacement	10-Feb-25	ISL Engineering and Land Services Ltd.	$ 210,955	Yes
24-132	RFP-MA	Engineering Services - Fugitive Emissions - Lulu Island Wastewater Treatment Plant Fugitive Emissions Monitoring	11-Feb-25	Jacobs Consultancy Canada, Inc. (Jacobs)	$ 2,000,000	Yes
24-132	RFP-MA	Engineering Services - Fugitive Emissions - Lulu Island Wastewater Treatment Plant Fugitive Emissions Monitoring	11-Feb-25	Brown and Caldwell		Yes
24-132	RFP-MA	Engineering Services - Fugitive Emissions - Lulu Island Wastewater Treatment Plant Fugitive Emissions Monitoring	11-Feb-25	Stantec Consulting Ltd.	NA	No
25-041	SS/NOIC	Community Liaison Services for Coquitlam Water Main project	12-Feb-25	SitePartners	$ 210,840	Yes
24-534	RFP	Consulting Services for Visitor Use Management Strategy for Regional Parks	13-Feb-25	DJ&A Canada Corp	$ 100,000	Yes
24-534	RFP	Consulting Services for Visitor Use Management Strategy for Regional Parks	13-Feb-25	E. Lees & Associates Consulting Ltd.	NA	No
24-534	RFP	Consulting Services for Visitor Use Management Strategy for Regional Parks	13-Feb-25	RC Strategies Inc.	NA	No
24-534	RFP	Consulting Services for Visitor Use Management Strategy for Regional Parks	13-Feb-25	O2 Planning + Design	NA	No
24-193	RFP	Operation and Maintenance of the Metro Vancouver Waste-to-Energy Facility	18-Feb-25	Veolia Water Canada Inc.	$ 245,000,000	Yes
24-193	RFP	Operation and Maintenance of the Metro Vancouver Waste-to-Energy Facility	18-Feb-25	NAES Corporation	NA	No
25-063	RFP	Board Governance Review	20-Feb-25	Deloitte LLP	$ 99,000	Yes
25-063	RFP	Board Governance Review	20-Feb-25	BDO Canada LLP	NA	No
25-063	RFP	Board Governance Review	20-Feb-25	Southern Butler Price LLP	NA	No
25-063	RFP	Board Governance Review	20-Feb-25	Strategy Corp	NA	No
25-063	RFP	Board Governance Review	20-Feb-25	Watson Board Advisors	NA	No
24-532	RFP	Lions Gate Receiving Environment Monitoring Program	21-Feb-25	Hatfield Consultants LLP	$ 1,300,000	Yes
24-532	RFP	Lions Gate Receiving Environment Monitoring Program	21-Feb-25	LGL Limited	NA	No

Competition #	Competition Type	Competition Description	Awarded Date	Vendor Name	Awarded Amount	Awarded
25-024	RFP	Planning Services, Rental Housing Blueprint - Phase Two	21-Feb-25	SvN Architects + Planners Inc.	$ 255,000	Yes
24-533	RFP	Iona Deep Sea Outfall Environment Monitoring Program	25-Feb-25	Hatfield Consultants LLP	$ 1,100,000	Yes
24-533	RFP	Iona Deep Sea Outfall Environment Monitoring Program	25-Feb-25	LGL Limited	NA	No
24-097	RFP	Supply and Delivery of E-House for Standby Power System for the Iona Island Wastewater Treatment Plant (IIWWTP) Projects	27-Feb-25	RIC Power Corporation	$ 7,309,624	Yes
24-097	RFP	Supply and Delivery of E-House for Standby Power System for the Iona Island Wastewater Treatment Plant (IIWWTP) Projects	27-Feb-25	Uptime Industrial	NA	No
24-097	RFP	Supply and Delivery of E-House for Standby Power System for the Iona Island Wastewater Treatment Plant (IIWWTP) Projects	27-Feb-25	Vanguard Power Ltd.	NA	No
24-097	RFP	Supply and Delivery of E-House for Standby Power System for the Iona Island Wastewater Treatment Plant (IIWWTP) Projects	27-Feb-25	Arbutus West Agency Ltd	NA	No
24-097	RFP	Supply and Delivery of E-House for Standby Power System for the Iona Island Wastewater Treatment Plant (IIWWTP) Projects	27-Feb-25	Finning Canada	NA	No
24-097	RFP	Supply and Delivery of E-House for Standby Power System for the Iona Island Wastewater Treatment Plant (IIWWTP) Projects	27-Feb-25	Tundra Process Solutions Ltd.	NA	No
25-040	SS/NOIC	Engagement Support Coquitlam Lake Water Supply Project	28-Feb-25	Lucent Quay Consulting Inc.	$ 905,550	Yes
24-315	RFP	Water Services and Liquid Waste Services Facility Criticality & Risk Framework, Phase 2	04-Mar-25	GEI Consultants	$ 115,505	Yes
24-315	RFP	Water Services and Liquid Waste Services Facility Criticality & Risk Framework, Phase 2	04-Mar-25	GHD Limited	NA	No
24-073	RFP	Supply and Delivery of Motor Control Centre Lineup and BC Hydro Metering Section	05-Mar-25	Wesco Distribution Canada	$ 397,100	Yes
24-073	RFP	Supply and Delivery of Motor Control Centre Lineup and BC Hydro Metering Section	05-Mar-25	Softac Systems Ltd.	NA	No
24-391	RFP	Columbia Forcemain Cured in Place Rehabilitation	12-Mar-25	Michels Canada Inc.	$ 14,304,212	Yes
24-391	RFP	Columbia Forcemain Cured in Place Rehabilitation	12-Mar-25	PW Trenchless Construction Inc.	NA	No
25-011	SS/NOIC	Waste-to-Energy Facility Engineering Support	14-Mar-25	MDNeild Consulting Services	$ 120,900	Yes
22-004	RFSO	Acute Toxicity Testing Program	18-Mar-25	Bureau Veritas Canada (2019) Inc.	$ 77,745	Yes
22-004	RFSO	Chronic Toxicity Testing Program	18-Mar-25	Bureau Veritas Canada (2019) Inc.	$ 167,900	Yes
23-384	SS/NOIC	Supply and Delivery of Material for The North Shore Wastewater Treatment Plant	19-Mar-25	Invent Environmental Technologies, Inc.	$ 187,887	Yes
24-517	RFP	Barnston Island Dike and Drainage Improvements	19-Mar-25	Northwest Hydraulic Consultants Ltd.	$ 770,281	Yes
24-517	RFP	Barnston Island Dike and Drainage Improvements	19-Mar-25	BBA Engineering Ltd.	NA	No
24-517	RFP	Barnston Island Dike and Drainage Improvements	19-Mar-25	Tetra Tech Canada Inc.	NA	No
25-167	ITQ	Traffic Control Services for Lynn Headwaters Park	20-Mar-25	Lanesafe Traffic Control Ltd.	$ 75,000	Yes
25-167	ITQ	Traffic Control Services for Lynn Headwaters Park	20-Mar-25	Universal Traffic Control	NA	No
25-167	ITQ	Traffic Control Services for Lynn Headwaters Park	20-Mar-25	BC Road Safe	NA	No
25-167	ITQ	Traffic Control Services for Lynn Headwaters	20-Mar-25	Lanesafe Traffic Control Ltd	$ 75,000	Yes
25-167	ITQ	Traffic Control Services for Lynn Headwaters	20-Mar-25	Universal Traffic Control	NA	No
25-167	ITQ	Traffic Control Services for Lynn Headwaters	20-Mar-25	BC Road Safe	NA	No
24-283	SS/NOIC	Supply and Delivery of Material for The North Shore Wastewater Treatment Plant. CTA Iberia - puddle pipes	21-Mar-25	CTA Iberia, S.L.U.	$ 530,712	Yes
24-234	RFP	Consulting Engineering Services for Refurbishment of the Secondary Clarifiers at Lulu Island Wastewater Treatment Plant (LIWWTP)	24-Mar-25	Carollo Engineers Canada Ltd.	$ 688,033	Yes
24-234	RFP	Consulting Engineering Services for Refurbishment of the Secondary Clarifiers at Lulu Island Wastewater Treatment Plant (LIWWTP)	24-Mar-25	WSP Canada Inc.	NA	No
24-386	ITT	Second Narrows Park Landscaping - Phase 1	24-Mar-25	Capital Green Landscapes Ltd.	$ 677,782	Yes
24-386	ITT	Second Narrows Park Landscaping - Phase 1	24-Mar-25	White Star Property Services LTD.	NA	No
24-386	ITT	Second Narrows Park Landscaping - Phase 1	24-Mar-25	Moza Home Construction Inc.	NA	No
24-451	RFP	Excavation and Condition Assessment, Riverside Drive	25-Mar-25	Blue Water Systems Ltd.	$ 456,959	Yes
24-063	RFP	Policy Planning and Analysis Consulting Services	26-Mar-25	Carollo Engineers Ltd.	$ 6,600,000	Yes
24-063	RFP	Policy Planning and Analysis Consulting Services	26-Mar-25	GHD Limited		Yes
24-063	RFP	Policy Planning and Analysis Consulting Services	26-Mar-25	Jacobs Consultancy Canada Inc.		Yes
24-063	RFP	Policy Planning and Analysis Consulting Services	26-Mar-25	Kerr Wood Leidal Associates Ltd.		Yes
24-063	RFP	Policy Planning and Analysis Consulting Services	26-Mar-25	WSP Canada Inc.		Yes
24-063	RFP	Policy Planning and Analysis Consulting Services	26-Mar-25	Associated Engineering (B.C.) Ltd.	NA	No
24-063	RFP	Policy Planning and Analysis Consulting Services	26-Mar-25	GeoAdvice Engineering Inc.	NA	No
24-063	RFP	Policy Planning and Analysis Consulting Services	26-Mar-25	Pinna Sustainability Inc.	NA	No

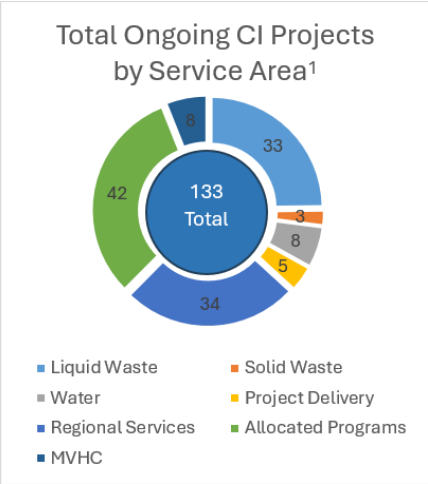
Competition #	Competition Type	Competition Description	Awarded Date	Vendor Name	Awarded Amount	Awarded
24-063	RFP	Policy Planning and Analysis Consulting Services	26-Mar-25	Water Street Engineering Ltd.	NA	No
25-178	RFSQ	Traffic Control for Belcarra Regional Park	28-Mar-25	Lanesafe Traffic Control	$ 100,693	Yes
24-221	RFP	Architect and Design Services for Affordable Housing Project	31-Mar-25	GBL Architects Inc.	$ 3,383,374	Yes
24-221	RFP	Architect and Design Services for Affordable Housing Project	31-Mar-25	Ryder Architecture (Canada) Inc	NA	No
24-221	RFP	Architect and Design Services for Affordable Housing Project	31-Mar-25	S2 Architecture	NA	No
24-221	RFP	Architect and Design Services for Affordable Housing Project	31-Mar-25	BFA Studio Architects	NA	No
24-221	RFP	Architect and Design Services for Affordable Housing Project	31-Mar-25	WT Leung Architects Inc.	NA	No
24-221	RFP	Architect and Design Services for Affordable Housing Project	31-Mar-25	Craven Huston Powers Architects / Station One Architects	NA	No
24-221	RFP	Architect and Design Services for Affordable Housing Project	31-Mar-25	Zeidler Architecture	NA	No
24-221	RFP	Architect and Design Services for Affordable Housing Project	31-Mar-25	Diamon Schmitt Architects	NA	No
24-221	RFP	Architect and Design Services for Affordable Housing Project	31-Mar-25	Carscadden Stokes McDonald Architects Inc.	NA	No
25-080	RFP	Drainage Works and Erosion Protection Asset Collection for Metro Vancouver Parks	14-Apr-25	McElhanney Ltd.	$ 175,000	Yes
25-080	RFP	Drainage Works and Erosion Protection Asset Collection for Metro Vancouver Parks	14-Apr-25	GHD	NA	No
25-080	RFP	Drainage Works and Erosion Protection Asset Collection for Metro Vancouver Parks	14-Apr-25	Forecastle Technologies	NA	No
24-408	RFP	Consulting Engineering Services for Westburno Pump Station Backup Power Project	24-Apr-25	Tetra Tech Canada Inc.	$ 733,978	Yes
24-408	RFP	Consulting Engineering Services for Westburno Pump Station Backup Power Project	24-Apr-25	Stantec	NA	No
24-408	RFP	Consulting Engineering Services for Westburno Pump Station Backup Power Project	24-Apr-25	AECOM	NA	No
24-400	RFP	Supply and delivery of plunger valve for construction recovery facility ("CERF") break head tank bypass improvements	28-Apr-25	Cascade Consultants LLC	$ 461,120	Yes
24-400	RFP	Supply and delivery of plunger valve for construction recovery facility ("CERF") break head tank bypass improvements	28-Apr-25	VAG	NA	No
25-238	DA	Reimburse for Emergency Repairs at the Ashcroft Ranch	28-Apr-25	Montte Farms BC LTD.	$ 148,562	Yes
24-565	RFP	Native Plants for Regional Parks	29-Apr-25	NATS Nursery Ltd.	$ 120,000	Yes

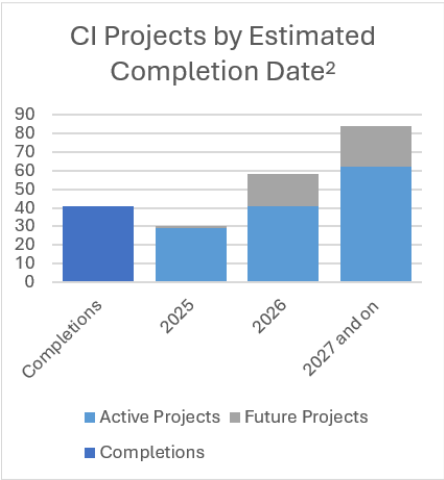
CONTINUOUS IMPROVEMENT PROJECTS

There is a foundational target outcome of fostering a commitment to continuous improvement in Metro Vancouver's core culture. The role of continuous improvement is to further the Board priorities, including:

- Financial Sustainability and Regional Affordability
- Climate Action
- Resilient Services and Infrastructure
- Reconciliation
- Housing

This report is part of Financial Services' work plan to provide regular reporting on Metro Vancouver Continuous Improvement (CI) projects and highlight select completed project's contributions to service levels and affordability for regional rate payers.





[1]*Total Ongoing CI Projects by Service Area* illustrates the total number of projects identified and by service area. The number of CI projects within an area may not reflect the significance or potential cost savings of the initiatives.
[2]*CI Projects by Estimated Completion Date* displays the number of active and future projects by expected year of completion.

Below is a summary of key completed Continuous Improvement Projects so far. Continuous Improvement reporting will continue to highlight completed projects. These projects vary from one-year to multi-year timelines depending on complexity and stakeholders

Highlighted Select Completed Continuous Improvement Projects			
Department/ Project Title	**Board Priority**	**Description**	**Outcomes**
PRS – Procurement: Service Delivery Improvements	• Financial Sustainability & Affordability	Improving the operating model and service delivery	• This overall initiative (made up of a series of action items) will improve the quality and efficiency in each phase of the procurement lifecycle, improve control and risk mitigation and deliver value for money.
Corporate Services & Human Resources: Afternoon Shift	• Financial Sustainability & Affordability	Develop an afternoon fleet maintenance shift to have more work done in-house while reducing downtime.	• Set up a self-sufficient afternoon shift crew of four mechanics.
Indigenous Relations: Update Engagement Policy	• Reconciliation	Development of draft policy; development of draft guidelines; rollout of training for staff	• This initiative involves producing an updated First Nations Engagement Policy to improve efficiencies, including a decision tree catered for each department's use as well as ongoing training for Metro Vancouver staff.

Highlighted Select Completed Continuous Improvement Projects			
Department/ Project Title	**Board Priority**	**Description**	**Outcomes**
Indigenous Relations: Cultural Sensitivity Video	• Reconciliation	Incorporate First Nations priorities; develop a script; film the segments; work with CPC and Procurement to ensure uptake.	• The video, which will be used to train project managers, contractors and crews working on Metro Vancouver project construction sites, will provide advice on cultural safety protocols when First Nation representatives, such as archaeological monitors, are on site.
Water Services Conservation Assessment	• Resilient Services and Infrastructure	Evaluate the potential drinking water benefits from conservation measures	• Conserving water improves the resilience of the drinking water system and reduces GHG emissions produced through operations. • Resilience is improved through creating capacity that can be used in the event of an emergency. • GHGs are reduced through reducing the operations and maintenance efforts and the demand for chemical use in the treatment processes