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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

METRO VANCOUVER REGIONAL DISTRICT
CLIMATE ACTION COMMITTEE

MEETING

Thursday, July 6, 2023
9:00 am
Meeting conducted electronically/in-person pursuant to the Procedure Bylaw
28th Floor Committee room, 4515 Central Boulevard, Burnaby, British Columbia

A G E N D A[1]

1. ADOPTION OF THE AGENDA

1.1 July 6, 2023 Meeting Agenda
That the Climate Action Committee adopt the agenda for its meeting scheduled for July 6, 2023 as circulated.

2. ADOPTION OF THE MINUTES

2.1 June 8, 2023 Meeting Minutes *pg. 4*
That the Climate Action Committee adopt the minutes of its meeting held June 8, 2023 as circulated.

3. DELEGATIONS

4. INVITED PRESENTATIONS

5. REPORTS FROM COMMITTEE OR STAFF

5.1 Annual Regional Greenhouse Gas Emissions for Onroad Transportation and Buildings *pg. 8*
That the MVRD Board receive for information the report dated June 23, 2023, titled "Annual Regional Greenhouse Gas Emissions for Onroad Transportation and Buildings".

5.2 Changes in Provincial Legislation Needed to Address Gas Utilities in British Columbia *pg. 23*
That the MVRD Board:
a) send letters to the Premier, the Minister of Municipal Affairs, the Minister of Environment and Climate Change Strategy, and the Minister of Energy, Mines

[1] *Note: Recommendation is shown under each item, where applicable.*

and Low Carbon Innovation, in response to Richmond City Council's request for support, asking the Government of British Columbia to reform the British Columbia Utilities Commission in the context of a changing climate and urgently enact legislation that regulates greenhouse gas emissions from gas utilities, in alignment with the strategies and actions in the *Climate 2050 Energy Roadmap*; and

b) request meetings between Metro Vancouver staff and the appropriate provincial ministries, to discuss the issues raised in the letters.

5.3 Phase 2 Engagement Summary and Next Steps on Managing Emissions from Cannabis Production and Processing *pg. 55*

That the MVRD Board:

a) send a letter to the Ministers of Agriculture and Food, Environment and Climate Change Strategy, and Public Safety and the Solicitor General requesting collaboration with Metro Vancouver on developing a concerted approach for managing emissions from cannabis production and processing in the Metro Vancouver region in a manner that protects public health and regional economic prosperity; and

b) direct staff to continue developing options to manage emissions from cannabis production and processing as described in the report dated June 23, 2023, titled "Phase 2 Engagement Summary and Next Steps for Managing Emissions from Cannabis Production and Processing".

5.4 2023 Update on Water Sustainability Innovation Fund Projects *pg. 82*

That the Climate Action Committee receive for information the report dated June 23, 2023, titled "2023 Update on Water Sustainability Innovation Fund Projects."

5.5 Manager's Report *pg. 101*

That the Climate Action Committee receive for information the report dated June 29, 2023 titled "Manager's Report".

6. INFORMATION ITEMS

7. OTHER BUSINESS

8. BUSINESS ARISING FROM DELEGATIONS

9. 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.

10. ADJOURNMENT/CONCLUSION

That the Climate Action Committee adjourn/conclude its meeting of July 6, 2023.

Membership:

Dominato, Lisa (C) – Vancouver
Johnstone, Patrick (VC) – New Westminster
Berry, Ken – Lions Bay
Bose, Mike – Surrey
Carr, Adriane – Vancouver
Gu, Alison – Burnaby
Lahti, Meghan – Port Moody
Leonard, Andrew – Bowen Island
McCutcheon, Jen – Electoral Area A
McNulty, Bill – Richmond
Pope, Catherine – North Vancouver District
Ross, Jamie – Belcarra
Ruimy, Dan – Maple Ridge
vanPopta, Misty – Langley Township
Wallace, Rosemary – Langley City

METRO VANCOUVER REGIONAL DISTRICT
CLIMATE ACTION COMMITTEE

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Climate Action Committee held at 9:02 am on Thursday, June 8, 2023 in the 28th Floor Committee Room, 4515 Central Boulevard, Burnaby British Columbia.

MEMBERS PRESENT:
Chair, Councillor Lisa Dominato, Vancouver
Vice Chair, Mayor Patrick Johnstone*, New Westminster (arrived at 9:13 am; departed at 10:40 am)
Councillor Mike Bose, Surrey
Councillor Adriane Carr, Vancouver
Councillor Alison Gu, Burnaby
Director Jen McCutcheon*, Electoral Area A
Councillor Bill McNulty, Richmond
Councillor Catherine Pope*, North Vancouver District
Mayor Jamie Ross*, Belcarra
Mayor Dan Ruimy*, Maple Ridge
Councillor Misty vanPopta*, Langley Township
Councillor Rosemary Wallace, Langley City

MEMBERS ABSENT:
Mayor Ken Berry, Lions Bay
Mayor Meghan Lahti, Port Moody
Mayor Andrew Leonard, Bowen Island

STAFF PRESENT:
Jerry W. Dobrovolny‡, Chief Administrative Officer
Heather McNell, Deputy Chief Administrative Officer, Policy and Planning
Conor Reynolds, Director, Air Quality and Climate Change
Rapinder Khaira, Legislative Services Coordinator, Board and Information Services

1. ADOPTION OF THE AGENDA

1.1 June 8, 2023 Meeting Agenda

It was MOVED and SECONDED
That the Climate Action Committee adopt the agenda for its meeting scheduled for June 8, 2023 as circulated.

CARRIED

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

2. ADOPTION OF THE MINUTES

2.1 May 11, 2023 Meeting Minutes

It was MOVED and SECONDED
That the Climate Action Committee adopt the minutes of its meeting held May 11, 2023 as circulated.

CARRIED

3. DELEGATIONS

No items presented.

4. INVITED PRESENTATIONS

No items presented.

5. REPORTS FROM COMMITTEE OR STAFF

5.1 Air Quality Advisory Program and Preparedness for 2023

Report dated May 23, 2023 from Geoff Doerksen, Air Quality Planner, and Ken Reid, Superintendent, Air Quality and Climate Change, informing the MVRD Board about Metro Vancouver's air quality advisory program, wildfire smoke preparedness and advisory planning activities for the 2023 summer advisory season.

Members were provided with an overview of the Metro Vancouver Air Quality Advisory Program, number of air quality advisories over the years, advisory preparation and process, and implications of climate change for future air quality.

9:13 am Vice Chair Johnstone arrived at the meeting.

Presentation material titled "Air Quality Advisory Program and Preparedness for 2023" is retained with the June 8, 2023 Climate Action Committee agenda.

It was MOVED and SECONDED
That the MVRD Board receive for information the report dated May 23, 2023, titled "Air Quality Advisory Program and Preparedness for 2023".

CARRIED

5.2 2023 Update on Regional District Sustainability Innovation Fund Projects

Report dated May 23, 2023 from Conor Reynolds, Director, Air Quality and Climate Change, providing an update on projects funded under the MVRD Sustainability Innovation Fund.

Members were provided with an overview of projects including Climate Literacy Modules, Clean Air for Students and Schools, Smart Cities: Hyperlocal Qir Quality Monitoring, Net Zero Water Tech Accelerator, and Large Building Retrofit Accelerator.

Presentation material titled "2023 Update on Sustainability Innovation Fund Projects" is retained with the June 8, 2023 Climate Action Committee agenda.

It was MOVED and SECONDED
That the Climate Action Committee receive for information the report dated May 23, 2023, titled "2023 Update on Regional District Sustainability Innovation Fund Projects."

CARRIED

5.3 Manager's Report

Report dated June 1, 2023 from Conor Reynolds, Director, Air Quality and Climate Change, updating the Climate Action Committee on the Committee's 2023 Work Plan, new requirements for open burning of vegetative debris, new E-bike Rebate Program launching June 1, 2023, and on Metro Vancouver engagement activities related to climate action.

Discussion ensued regarding an expansion of the E-bike Rebate Program and importance of funding for a safe active transportation infrastructure network.

It was MOVED and SECONDED
That the MVRD Board write a letter to the Minister of Transportation and Infrastructure requesting an expansion to the E-bike Rebate Program and enhanced, stable funding for safe active transportation infrastructure networks.

CARRIED

It was MOVED and SECONDED
That the Climate Action Committee receive for information the report dated June 1, 2023, titled "Manager's Report".

CARRIED

10:40 am Vice Chair Johnstone departed the meeting.

6. INFORMATION ITEMS

6.1 Metro Vancouver Media Advisory: Seasonal Residential Indoor Wood Burning Prohibition in Effect May 15

6.2 Agricultural Ecosystem Services in Metro Vancouver

7. OTHER BUSINESS

No items presented.

8. BUSINESS ARISING FROM DELEGATIONS

No items presented.

9. RESOLUTION TO CLOSE MEETING

No items presented.

10. ADJOURNMENT/CONCLUSION

It was MOVED and SECONDED

That the Climate Action Committee conclude its meeting of June 8, 2023.

CARRIED

(Time: 10:50 am)

Rapinder Khaira, Legislative Services Coordinator	Lisa Dominato, Chair

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To: Climate Action Committee

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

Date: June 23, 2023 Meeting Date: July 6, 2023

Subject: **Annual Regional Greenhouse Gas Emissions for Onroad Transportation and Buildings**

RECOMMENDATION

That the MVRD Board receive for information the report dated June 23, 2023, titled "Annual Regional Greenhouse Gas Emissions for Onroad Transportation and Buildings".

EXECUTIVE SUMMARY

Metro Vancouver is preparing annual greenhouse gas (GHG) emissions inventories for the region and for its member jurisdictions to track progress towards emission reduction targets. This report presents annual inventories for the two largest sources of GHG emissions in the region: onroad transportation and buildings.

Regional GHG emissions from onroad transportation were 6.3 million tonnes (Mt CO_2e) in 2022, which is relatively unchanged from 2010. Despite significant increases in both vehicle population (29% increase) and distance travelled (25% increase), regional GHG emissions have held steady, due to improvements in vehicle fuel efficiency and increasing uptake in zero emission technology. GHG emissions from buildings increased from 2010 to 2022, although emissions have been relatively constant from 2019 to 2022. Important indicators such as increasing numbers of zero emission vehicles and heat pump incentives, together with regional and other government initiatives, are expected to result in future GHG emission reductions. As annual GHG inventories are completed, results will be available through a publicly accessible platform.

PURPOSE

To provide an inventory of greenhouse gas emissions from onroad transportation and buildings in Metro Vancouver for the years 2010 (baseline), 2015, 2019, 2020, 2021, and 2022.

BACKGROUND

Metro Vancouver's *Clean Air Plan* identifies the need to report on GHG and health-harming air contaminant emissions, as a means of tracking progress to regional air quality and climate targets. To achieve this, Metro Vancouver prepares inventories of emissions of health-harming air contaminants and greenhouse gases in the region. The inventory includes estimates of emissions for a broad range of sources, including transportation, industry, buildings, agriculture, waste, and other sources in the region. Emissions inventories have typically been prepared on a five-year rotation, and have been part of the air quality and climate planning program since at least 1985.

More recently, staff have been working to augment the five-year emissions inventory with ongoing preparation of an annual GHG emissions inventory, beginning with development of a regional GHG emissions inventory for 2019 to 2022. Of note, the 2020 inventory, which will be presented at a future meeting, will include emissions of both GHG and health-harming air contaminants consistent with previous five-year inventories, and will report on historical trends from 2000 and projections of future emissions to 2040, in five-year increments. This report conveys the initial findings of the 2019-2022 GHG inventories for the onroad transportation and buildings sectors.

Development of the Annual Greenhouse Gas Emissions Inventory

Metro Vancouver and many of its member jurisdictions have set targets to reduce GHG emissions in the near term and long term. While Metro Vancouver's regional emissions inventory provides insights into emission trends and forecasts in the region, and ongoing information to evaluate the performance of programs and actions to manage emissions, the five-year reporting frequency is not sufficient for timely tracking of progress towards GHG targets. Given the ambitious science-based GHG reduction targets that have been established, staff are developing GHG emissions inventories on an annual basis, starting with the year 2019.

Development of the annual GHG inventories is focused on the highest-emitting sectors, such as transportation, buildings, and industry. The annual GHG inventory will expand incrementally, to a full suite of emission sources, depending on program budgets, resourcing, and data availability. This report provides the regional emissions inventory for onroad transportation and buildings. As 2020 was an atypical year due to the impacts of COVID-19, emission estimates for 2019 have been developed, to help understand the emissions impact of COVID-19, and help develop an appropriate baseline for forecasting future GHG emissions.

REGIONAL GREENHOUSE GAS EMISSIONS FROM ONROAD TRANSPORTATION

Figure 1 shows estimates of regional GHG emissions from passenger cars (including motorcycles), passenger trucks, buses, and commercial vehicles (e.g., light commercial trucks, short-haul and long-haul trucks) for 2019 to 2022. Estimates have also been developed for member jurisdictions and will be shared when available. 2010 and 2015 estimates are also shown, for comparison to 2030 targets in the *Clean Air Plan* and *Climate 2050 Transportation Roadmap*:

- Passenger vehicles: 65% reduction in GHG emissions from 2010
- Medium and heavy duty vehicles: 35% reduction in GHG emissions from 2010

Figure 1, below, and Table 1 in the attachment, show trends in GHG emissions from onroad transportation from 2010 to 2022, as well as information on vehicle population and distance driven in the region.

Onroad transportation in Metro Vancouver is estimated to account for 6.3 Mt CO_2e in 2022. This total is relatively unchanged from 2010 levels, despite increases of more than 350,000 vehicles (an increase of 29%) and more than 4.5 billion km (~25% increase) travelled by vehicles in the region. Passenger cars and trucks account for 4.1 Mt CO_2e, more than 60% of emissions from the onroad transportation sector. Interestingly, while GHG emissions from passenger cars have decreased by nearly 25% since 2010, passenger truck emissions have increased by a similar amount, so the

combined trend from 2010 is also relatively flat for passenger vehicles. This suggests a known shift to larger passenger vehicles such as trucks and SUVs, and away from smaller cars.

The effects of the COVID-19 pandemic are evident in 2020 and 2021, with significant decreases in GHG emissions in both years for all vehicle types shown. Emissions subsequently rebounded in 2022, although to a level less than what has been estimated for 2019.

Overall, despite regional increases in the number of vehicles and distances travelled, the total GHG emissions have not increased compared to the baseline year, due to improved vehicle fuel efficiencies and growing sales of zero emission vehicles. Additionally, *Clean Air Plan* actions to reduce driving and emissions, and accelerate a transition to electric vehicles, are expected to help further reduce transportation emissions in the region. Through the annual GHG inventory, Metro Vancouver will continue to track important indicators such as the growth in zero emission vehicles in the fleet, as it will be those trends that will help shift GHG emissions in the direction of regional targets. Figure 1 (and Table 2 in the Attachment) illustrates the ongoing growth in zero emission vehicles, and indicates that the electric vehicle portion of the regional fleet in 2022 has grown more than 70 times from 2010. This data is also reflective of provincial information indicating that zero emission vehicle sales accounted for 18% of all new light-duty vehicle sales in BC in 2022.

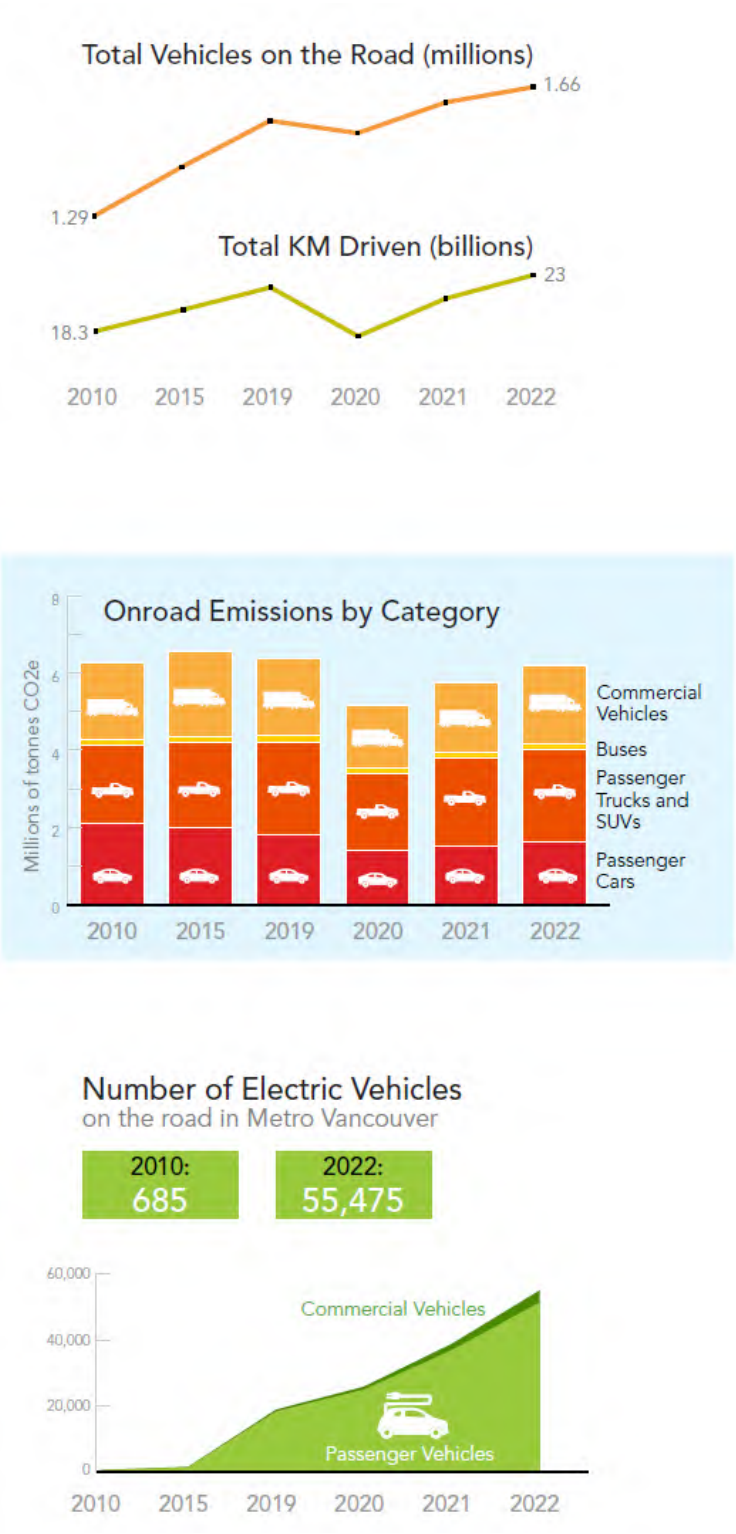

Figure 1: Onroad Transportation GHG Emissions and Indicators

REGIONAL GREENHOUSE GAS EMISSIONS FROM BUILDINGS

Figure 2 (and Table 3 in the Attachment) shows estimates of regional GHG emissions from the buildings sector, including heating and cooling of residential, commercial, institutional, and light industrial buildings for 2019 to 2022, as well as 2010 and 2015 for comparison to regional GHG targets. The *Clean Air Plan* and *Climate 2050 Buildings Roadmap* include a target of a 35% reduction in GHG emissions from buildings by 2030, from 2010 levels.

Similar to onroad transportation, these emission estimates are for the Metro Vancouver region. Estimates are also available for individual member jurisdictions. GHG emissions related to electricity use will be included in future annual GHG inventories, and are expected to be a small proportion of overall GHG emissions from the buildings sector.

The buildings sector in Metro Vancouver is estimated to have emitted 4.9 Mt CO_2e in 2022. This total has increased from 2010 for both residential buildings, and for the commercial / institutional sector, although emissions remained relatively constant during the period 2019 to 2022. Unlike the drop in emissions shown in the onroad transportation sector during the 2020 and 2021 pandemic years, buildings did not see a similar drop in emissions, as residential natural gas usage continued at similar levels.

In the residential sector, continued installation of low and zero emission technology like heat pumps will help to curve the emissions trend downwards. For commercial and institutional buildings, an approach to reduce GHG emissions from large buildings in the region is in development and would also help reduce emissions, particularly from the existing stock of buildings, where emission reductions can be challenging. The

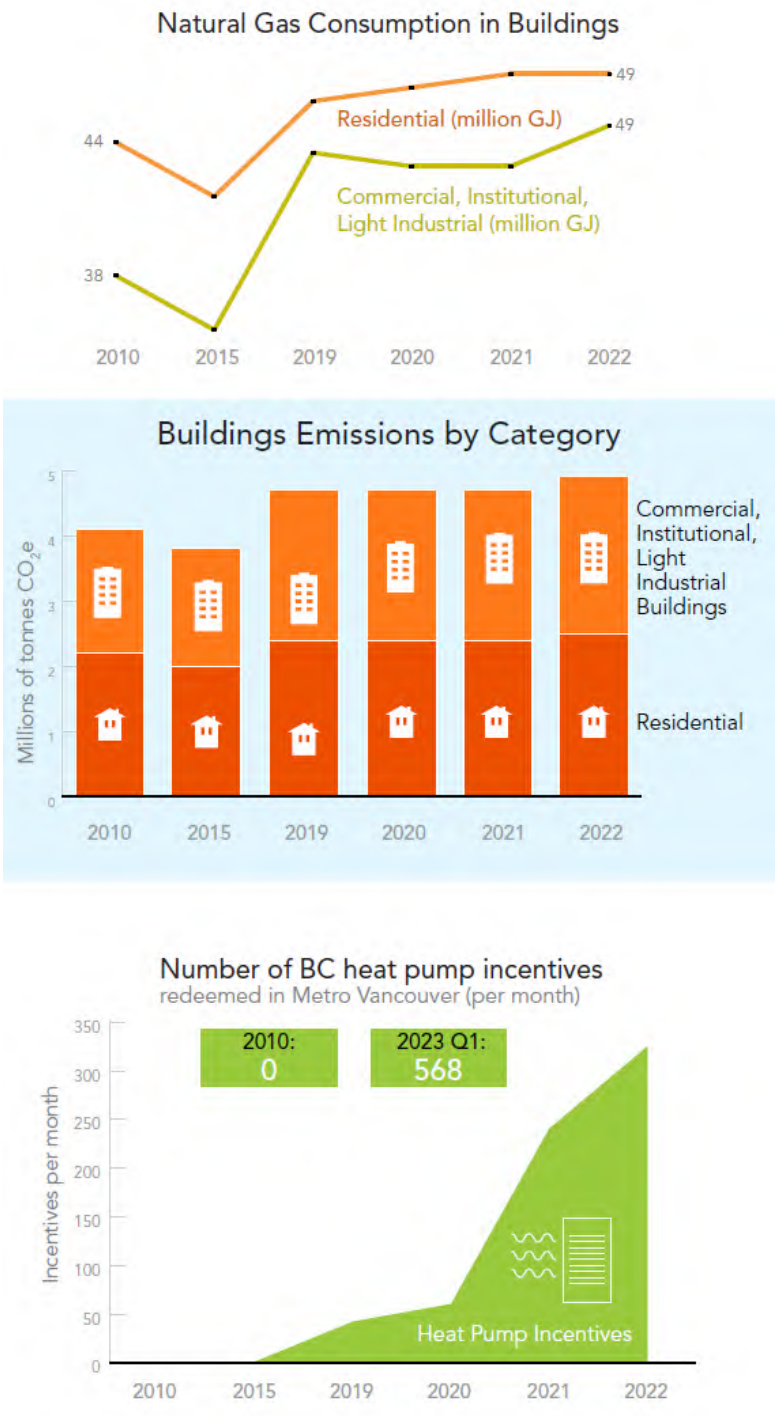

Figure 2: Buildings GHG Emissions and Indicators

impacts of these changes will be evident in future annual GHG inventories for this sector. As an early indication, provincial data in Table 3 in the Attachment shows that heat pump shipments and incentives are steadily increasing.

EMISSIONS REPORTING

Staff will continue to develop emissions inventories for the highest GHG-emitting sectors at regional and municipal levels. As annual GHG emission inventories are completed, Metro Vancouver intends to make emissions data available through a public platform that is currently in development and is expected to be available by the end of this year. This public platform will support member jurisdictions in obtaining and understanding their GHG emissions and trends, and will allow improved tracking of progress in reducing GHG emissions, and identify areas where emissions could be reduced further. Staff are also working on the 2020 regional emissions inventory, and forecasts of health harming contaminant and greenhouse gas emissions to 2040.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The resources required for the development of emissions inventories are included in approved program budgets, including both staff and consulting resources. Ongoing development of annual GHG inventories may require additional resources, and will be included in future budgets.

CONCLUSION

Staff are developing annual GHG emissions inventories for the region for 2010, 2015, and 2019 to 2022, as well as the 2020 regional emissions inventory for all sources in the region, which includes health-harming contaminants. This report presents the annual GHG inventory for the onroad transportation and buildings sectors. Onroad transportation accounts for 6.3 million tonnes GHG (Mt CO_2e) in 2022, which is relatively unchanged from 2010, despite significant increases in the number of vehicles and the distance travelled by those vehicles in the region. The buildings sector is estimated to have emitted 4.9 Mt CO_2e in 2022, which is an increase from 2010 for both residential buildings and for commercial and institutional buildings. Indicators showing increased uptake of low or zero emission technology, such as heat pumps or zero emission vehicles, will be tracked by Metro Vancouver, as they illustrate the examples of change necessary to reduce regional GHG emissions.

As remaining portions of the annual GHG inventory are completed, staff will report results through a publicly accessible platform. The annual GHG emissions inventory will assist Metro Vancouver and its member municipalities to better assess and track progress in meeting their GHG emission reduction targets.

Attachments

1. Regional Greenhouse Gas Emissions from Onroad Transportation and Buildings
2. Presentation re Annual Regional Greenhouse Gas Emissions for Onroad Transportation and Buildings

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Regional Greenhouse Gas Emissions from Onroad Transportation and Buildings

Table 1: GHG Emissions and Indicators for Onroad Transportation (million tonnes CO_2e)

GHGs by Vehicle Type and Year	2010	2015	2019	2020	2021	2022
Passenger Cars	2.2	2.0	1.9	1.4	1.6	1.6
Passenger Trucks	2.0	2.3	2.5	2.0	2.3	2.5
Buses	0.2	0.2	0.2	0.1	0.2	0.2
Commercial Vehicles	2.1	2.2	1.9	1.5	1.8	2.0
Onroad Transportation – total	6.4	6.7	6.4	5.1	5.9	6.3
Vehicle Kilometers Travelled (VKT, billion km)	18.3	20.1	21.9	17.9	21.0	23.0
Vehicles (million)	1.3	1.4	1.6	1.5	1.6	1.7

Note: totals may not add due to rounding.

Table 2: Electric Vehicle (EV) Populations by Year

EV Type	2010	2015	2019	2020	2021	2022
Passenger EVs	700	1,500	18,500	25,200	37,000	52,000
Commercial EVs	<100	150	600	1,000	2,000	4,000
Total EVs (approx.)	750	1,700	19,000	26,000	39,000	55,000

Table 3: GHG Emissions and Indicators for Buildings (million tonnes CO_2e)

GHGs by Building Type and Year	2010	2015	2019	2020	2021*	2022*
Residential Buildings	2.2	2.0	2.4	2.4	2.4	2.5
Commercial, Institutional, Light Industrial Buildings	1.9	1.8	2.3	2.3	2.3	2.4
Buildings (excluding industrial) – total	4.1	3.8	4.7	4.7	4.7	4.9
Natural gas consumption (million GJ), residential	44	40	47	48	49	49
Natural gas consumption (million GJ), commercial, institutional, light industrial	38	34	47	46	46	49
BC Heat Pump Incentives (monthly average)	0	0	41	59	238	322 (2023 Q1: 568)

* Natural gas consumption data for 2021 and 2022 is preliminary and subject to change.
Note: totals may not add due to rounding.

ATTACHMENT 2

Annual Regional Greenhouse Gas Emissions from Onroad Transportation and Buildings

Shelina Sidi, Senior Project Engineer
Derek Jennejohn, Lead Senior Engineer

Climate Action Committee: July 6, 2023
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REGIONAL EMISSIONS INVENTORIES

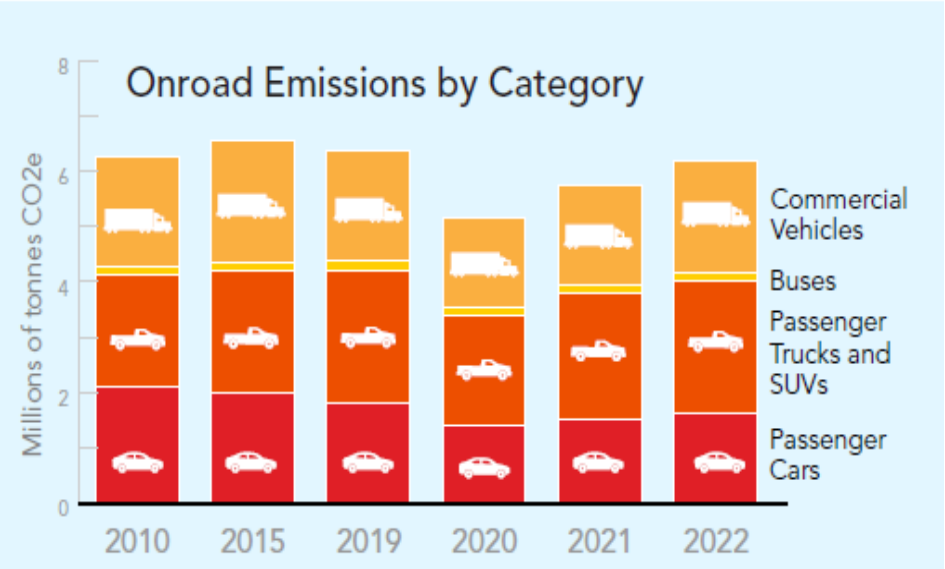
- Include all sources of emissions: transportation, industry, buildings, agriculture, waste, other
- Provide data that supports:
  - Tracking progress on regional air quality and climate targets
  - Prioritizing actions to manage emissions

ANNUAL GHG EMISSIONS INVENTORY

2010 (baseline), 2015, 2019-2022

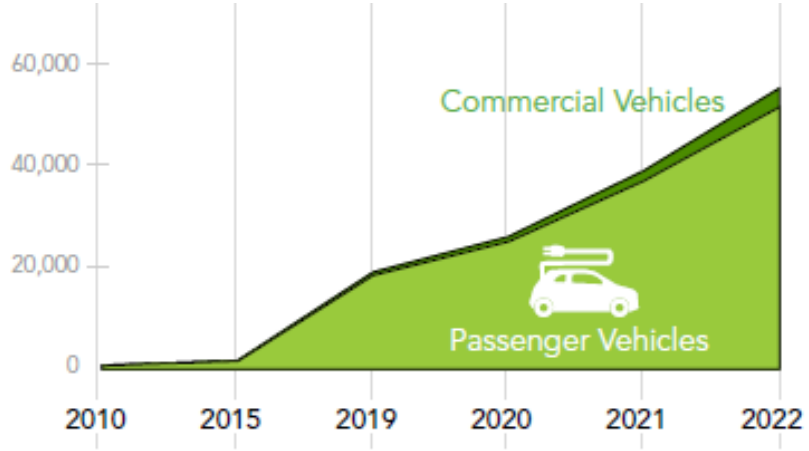
- Regional and member jurisdiction inventories
- Initial regional results for onroad transportation and buildings

ONROAD TRANSPORTATION GHG EMISSIONS



- 2022 GHG emissions similar to 2010
- Vehicles up more than 350,000
- Travel increased 4.5 billion km

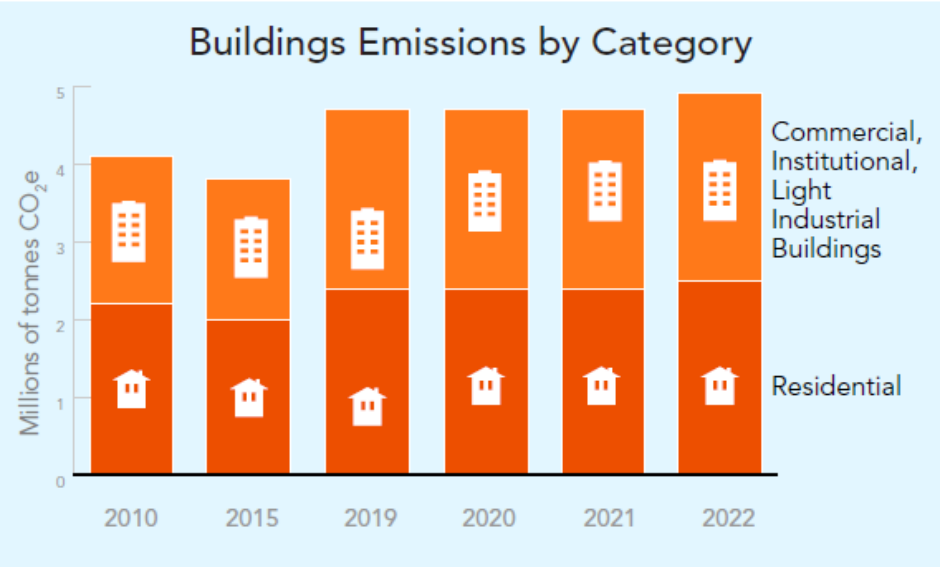
ONROAD TRANSPORTATION – GROWTH IN EVs



Number of Electric Vehicles
on the road in Metro Vancouver

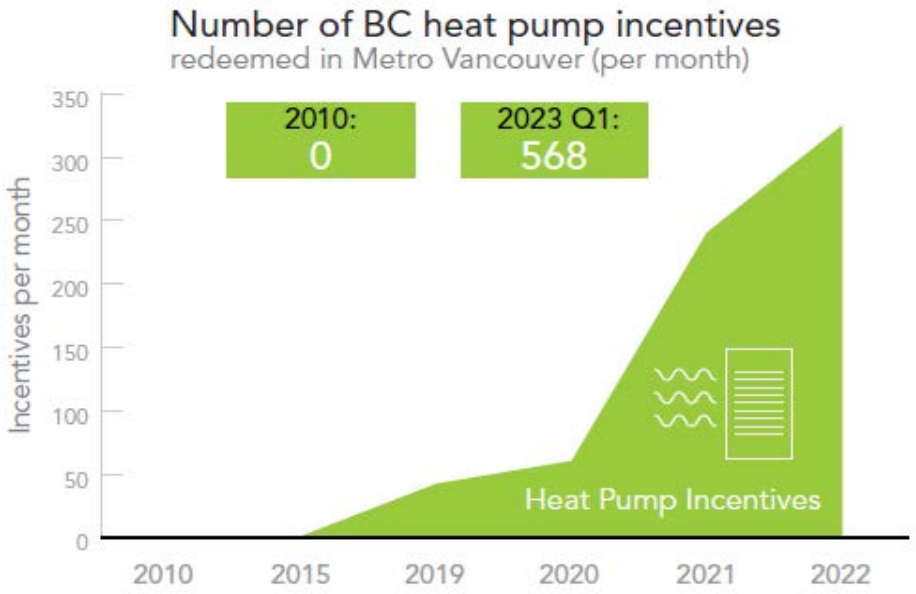
2010:	2022:
685	55,475

BUILDINGS GHG EMISSIONS



- 2022 GHG emissions up from 2010, but consistent 2019-2022
- Energy consumption has increased
- Heat pump installations increasing

BUILDINGS – HEAT PUMP INSTALLATIONS



EMISSIONS REPORTING

- Complete 2019-2022 GHG inventory for the region and member jurisdictions
  - To be updated annually
- Emissions inventory for MV and FVRD
  - All air contaminants, with trends from 2000 and forecast to 2040
- Emissions reporting
  - Public platform with emissions data for member jurisdictions and the public

QUESTIONS?

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To: Climate Action Committee

From: Nicole Chan, Project Engineer, Air Quality and Climate Change

Date: June 19, 2023 Meeting Date: July 6, 2023

Subject: **Changes in Provincial Legislation Needed to Address Gas Utilities in British Columbia**

RECOMMENDATION

That the MVRD Board:

a) send letters to the Premier, the Minister of Municipal Affairs, the Minister of Environment and Climate Change Strategy, and the Minister of Energy, Mines and Low Carbon Innovation, in response to Richmond City Council's request for support, asking the Government of British Columbia to reform the British Columbia Utilities Commission in the context of a changing climate and urgently enact legislation that regulates greenhouse gas emissions from gas utilities, in alignment with the strategies and actions in the *Climate 2050 Energy Roadmap*; and

b) request meetings between Metro Vancouver staff and the appropriate provincial ministries, to discuss the issues raised in the letters.

EXECUTIVE SUMMARY

Richmond City Council has sent letters to the Province, asking the Government of British Columbia to reform the BC Utilities Commission (BCUC) and to enact legislation to regulate greenhouse gas emissions from gas utilities in British Columbia. Richmond City Council has requested that Metro Vancouver send similar letters to the Province in support of these issues. Staff have reviewed Richmond City Council's recommendations, and they are well-aligned with several key strategies and actions in the *Climate 2050 Energy Roadmap*, which aims to accelerate the region's transition to clean, renewable energy while ensuring that gas services remain affordable for Metro Vancouver residents. Richmond City Council's recommendations also echo recommendations made by the Climate Solutions Council in their 2022 Annual Report.

This report brings the request for support from the City of Richmond for the MVRD Board's consideration to write letters to the Province to support Richmond City Council's advocacy efforts, and to request meetings between senior staff at Metro Vancouver and the appropriate provincial ministries to discuss the issues raised as they relate to the Climate 2050 Energy Roadmap.

PURPOSE

To provide the MVRD Board with an opportunity to support Richmond City Council's recommendations to the Province relating to changes in provincial legislation needed to address gas utilities in British Columbia.

BACKGROUND

On May 25, 2023, Chair Harvie, on behalf of the Metro Vancouver Regional District Board, received a letter from Mayor Brodie (Attachment 1), on behalf of Richmond City Council, requesting Metro Vancouver's support in sending letters to the Province, asking to reform the BC Utilities Commission (BCUC) and to enact legislation to regulate greenhouse gas emissions from gas utilities in BC. This report provides a staff assessment of Richmond City Council's request and an opportunity for the Board to support Council's recommendations.

RICHMOND CITY COUNCIL'S RECOMMENDATIONS

At its meeting on May 8, 2023, Richmond City Council (Richmond) passed a resolution to advocate to the Province for changes in provincial legislation, specifically to request reform of the BCUC in the context of a changing climate, and to urgently enact legislation that regulates greenhouse gas emissions from gas utilities. Richmond's recommendations are aligned with focus areas within their Council's Strategic Plan 2022-2026, and echo several recommendations within the Climate Solutions Council's (CSC) 2022 Annual Report (Reference 1). The CSC is an advisory group with a legislated mandate under the *Climate Change Accountability Act* to advise the Minister of Environment and Climate Change Strategy on climate action and clean economic growth.

A summary of Richmond's recommendations are as follows:

1. Bring forward legislation implementing the 2030 GHG cap on the gas sector without further delay.
2. Launch an independent gas utility planning exercise that plots a course for addressing:
    a. an expected decline in throughput of the gas grid, and
    b. the transition of gas grids towards transporting renewable natural gas (RNG) and hydrogen to sectors and/or locations that hard to decarbonize.
3. Reject the use of RNG and hydrogen in new construction to meet GHG limits in the BC Energy Step Code.
4. Develop policies to assess, certify, and track the GHG intensity of RNG, hydrogen, and other alternative gases.
5. Reform the BCUC in the context of the changing climate to consider, quantify, and minimize the potential costs of lock-in and stranded investments when evaluating capital plans, rate setting, and extension policies for gas utilities.
6. Bring forward legislation and other regulatory changes specific to the heat transition to establish a distinct BCUC regulatory framework for public district energy systems that is more aligned with their small scale and localized nature.
7. Require that a minimum percentage of low-carbon methane-based fuels (i.e., up to 100%) be produced within BC.

Climate 2050 Energy Roadmap

The Climate 2050 Energy Roadmap identifies the need to advocate to the Province on energy policy, recognizing the critical role that the Province plays in developing the regulatory framework to enable the energy transition. The following actions in the *Climate 2050 Energy Roadmap* (Reference 2) are aligned with the recommendations that Richmond has brought forward:

- Action 1.1: Align British Columbia's Energy Objectives with Strong Climate Action (BIG MOVE)

- Action 1.2: Strong Climate Mandate for Energy Utilities (BIG MOVE)
- Action 1.4: Long-term Planning Scenarios for the Transition to 100% Clean, Renewable Energy
- Action 1.6: Implement Tracking, Verification, and Reporting Requirements for Renewable Natural Gas Supply

There is strong alignment between Richmond's recommendations and key actions within the Energy Roadmap. Of particular note, Actions 1.1 and 1.2 (Big Moves) call for the Province to update BC's *Clean Energy Act* and *Utilities Commission Act* to reflect the urgency for strong legislative action on climate change, and to provide a strong climate mandate for energy utilities; both of these are related to Richmond's Recommendation #5, to reform the BCUC in the context of a changing climate. A more detailed analysis of the alignment between Richmond's recommendations and the actions in the Energy Roadmap is provided in Attachment 2.

Reforming the BCUC and updating the current regulatory framework will be essential to protecting the affordability of energy services throughout the clean energy transition. As noted in the Energy Roadmap, a planned transition away from fossil natural gas will "reduce the risk of stranded gas assets and avoid excessive cost impacts to ratepayers". RNG is an expensive fuel and the use of RNG fuel to decarbonize the gas system, (versus other methods such as non-pipe alternatives, as noted by Richmond), needs to carefully considered by the BCUC and the Province in order to ensure that gas services remain affordable to Metro Vancouver residents while supporting decarbonization goals.

ALTERNATIVES

1. That the MVRD Board:
   a) send letters to the Premier, the Minister of Municipal Affairs, the Minister of Environment and Climate Change Strategy, and the Minister of Energy, Mines and Low Carbon Innovation, in response to Richmond City Council's request for support, asking the Government of British Columbia to reform the British Columbia Utilities Commission in the context of a changing climate and urgently enact legislation that regulates greenhouse gas emissions from gas utilities, in alignment with the strategies and actions in the *Climate 2050 Energy Roadmap*; *and*
   b) request meetings between Metro Vancouver staff and the appropriate Provincial ministries, to discuss the issues raised in the letters.

2. That the MVRD Board receive for information the report dated June 19, 2023, titled "Changes in Provincial Legislation Needed to Address Gas Utilities in British Columbia" and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

There are no financial implications to this report.

CONCLUSION

Richmond City Council is engaging the Province on reforming the British Columbia Utilities Commission in the context of a changing climate, and has asked that the Province urgently enact legislation that regulates greenhouse gas emissions from gas utilities. Richmond City Council has requested Metro Vancouver's support in advocating to the Province. Richmond City Council's recommendations are well-aligned with the actions and strategies in the *Climate 2050 Energy Roadmap,* particularly Actions 1.1 and Action 1.2, and will help ensure that gas services remain affordable to Metro Vancouver residents while enabling the region to reach its climate targets. Richmond City Council's recommendations also echo recommendations within the Climate Solution Council's 2022 Annual Report. Therefore, staff recommend Alternative 1, that the MVRD Board write letters to the Province, and request meetings between senior staff to discuss these issues in more depth, in relation to key actions within the *Climate 2050 Energy Roadmap.*

Attachments

1. Correspondence re "Changes in Provincial Legislation Needed to Address Gas Utilities in BC" from the City of Richmond, dated May 25, 2023.
2. Analysis of Richmond's Recommendations in Relation to the *Climate 2050 Energy Roadmap.*

References

1. Climate Solutions Council's 2022 Annual Report re "Mind the Gaps: Accelerating the Implementation of the CleanBC Roadmap to 2030"
2. Metro Vancouver Climate 2050 Energy Roadmap, dated April 2023

City of Richmond

Malcolm D. Brodie
Mayor
6911 No. 3 Road
Richmond, BC V6Y 2C1
Telephone: 604-276-4123
Fax No: 604-276-4332
www.richmond.ca

May 25, 2023

Via email & Post

George V, Harvie, Board Chair
Metro Vancouver
Metrotower III, 4515 Central Boulevard
Burnaby, BC, V5H 0C6

Dear Chair Harvie,

Re: Changes in Provincial Legislation Needed to Address Gas Utilities in British Columbia

I write to you to request that you send a letter to the Province asking it to reform the BC Utilities Commission (BCUC) and enact legislation to regulate greenhouse gas emissions (GHGs) from gas utilities in BC. This request reflects our shared objective to achieve a zero carbon community by 2050. The City's Community Energy & Emission Plan 2050 emphasizes that advocacy, alongside regulation, education, partnerships and the provision of infrastructure and incentives, is an essential tool for achieving the City's greenhouse gas (GHG) 2030 and 2050 emission reduction targets.

Accordingly, on May 8, 2023, Richmond City Council resolved:

(1) That, as described in the report titled 'Changes in Provincial Legislation Needed to Address Gas Utilities in British Columbia' from the Director, Sustainability & District Energy, dated March 17, 2023:

a) Letters be sent to the Premier, the Minister of Municipal Affairs, the Minister of Environment and Climate Change Strategy, the Minister of Energy, Mines and Low Carbon Innovation and to local Members of the Legislative Assembly, asking the Government of British Columbia to

i. reform the British Columbia Utilities Commission in the context of a changing climate as noted in the report;

ii. urgently enact legislation that regulates greenhouse gas emissions from gas utilities; and,

b) Letters be sent to Metro Vancouver, Metro Vancouver member local governments, the City of Victoria and the District of Saanich requesting their support by sending letters to the Office of the Premier, the Minister of Municipal Affairs, the Minister of

Environment and Climate Change Strategy and the Minister of Energy, Mines and Low Carbon Innovation accordingly.

The City greatly appreciates the Province's longstanding partnership in the pursuit of GHG reductions, in particular, supporting cities with the necessary tools and funding needed to do so, including:

- implementing a carbon tax in 2008;
- implementing the Energy Step Code for energy efficiency in 2017;
- approving increased funding to cities through the Local Government Climate Action Plan; and most recently,
- adopting the opt-in Zero Carbon Step Code, adopted into the BC Building Code in February 2023.

The City undertook extensive analysis to inform the above recommendations, including assessing concerning issues currently being reviewed by the BCUC, articulating international best practices in the regulation of gas utilities, and the urgent role of provincial policy to regulate GHGs from gas utilities. The City believes that there is a role for gas utilities in BC but they will likely be trimmed and reshaped over time to provide heat and process energy to those existing users that are the most challenging to electrify due to cost and/or location considerations. The City's analysis culminated with the following key requests of the Province. An expanded version of the recommendations can be found in Attachment 1 in this letter. Finally, the City's extensive analysis that led to these recommendations can be found in the May 8, 2023 Council report in Attachment 2. The City puts forward the following requests in an effort to engage in constructive dialogue, given our shared GHG reduction goals:

1) **Bring forward legislation implementing the 2030 GHG cap on the gas sector** without further delay as committed to in the Province's CleanBC plan and recently reaffirmed by the Premier on March 14, 2023 with the launch of a new energy action framework;

2) **Launch an independent gas utility planning exercise** that plots a course for addressing an expected decline in throughput of gas grids and the transition of gas grids towards transporting RNG and hydrogen to sectors and/or locations that are hard to decarbonize, leading to the increased role of electrification in building heating and transport;

3) **Reject the use of RNG and hydrogen in new construction** to meet GHG limits in the Step Code, so that the limited and costly supply of these alternative fuels can be put to highest and best uses;

4) **Develop policies to assess, certify and track the GHG intensity** of RNG, hydrogen and other alternative gases;

5) **Reform the BCUC in the context of a changing climate to** consider, quantify and minimize the potential costs of lock-in and stranded investments when evaluating capital plans, rate setting and extension policies for gas utilities. This direction should also include greater consideration of non-pipe alternatives to marginal investments in gas grids as well as consideration of strategic opportunities to prune gas grids in conjunction with targeted electrification strategies. Finally, proceedings should be

guided by a framework or set of guidelines that do not impact or limit the jurisdiction and authority of local governments without provincial direction;

6) **Bring forward legislation and other regulatory changes specific to the heat transition** that, among other issues, establishes a distinct BCUC regulatory framework for public district energy systems more aligned with their small scale and localized nature; and,

7) **Require that a minimum percentage of low-carbon methane-based fuels** (i.e. up to 100%) be produced within BC.

Some of the above is consistent with recommendations in the Climate Solutions Council's (CSC) 2022 Report. The CSC is an advisory group with a legislated mandate under the *Climate Change Accountability Act* to advise the Minister of Environment and Climate Change Strategy regarding plans and actions to achieve climate targets and reduce emissions and related matters. Attachment 1 notes where the above recommendations align with CSC's 2022 report.

Our cities share common zero carbon outcomes for our respective jurisdictions. The Province's work in reducing GHGs coupled with its resolve to reach its regulated GHG reduction targets are truly world-class. The City's requests of the Province if acted on, will allow the Province to maintain the momentum is has created with the CleanBC plan.

I trust that our requests will be given due consideration. Please contact the City's Director, Sustainability and District Energy, Peter Russell, at peter.russell@richmond.ca or (604) 516-9873 for more information.

Yours truly,

Malcolm D. Brodie
Mayor

More Information Regarding the City's Requests

1) **Bring forward legislation implementing the 2030 GHG cap on the gas sector without further delay** as committed to in the Province's CleanBC plan and recently reaffirmed by the Premier on March 14, 2023 with the launch of a new energy action framework;

2) **Launch an independent gas utility planning exercise that plots a course for addressing an expected decline in throughput of gas grids** and the transition of gas grids towards transporting RNG and hydrogen to sectors and/or locations that are hard to decarbonize, consistent with the Province's 2030, 2040 and 2050 GHG emission reduction targets, all leading to the increased role of electrification in building heating and transport.

3) **Reject the use of RNG and hydrogen in new construction to meet GHG limits in the Step Code, so that the limited and costly supply of these alternative fuels can be put to highest and best uses.** RNG volumes are very limited and RNG may be the only option for decarbonizing heavy industry and some portions of the transportation sector. There are affordable low-carbon alternatives for heating new buildings. Heating new buildings is not the highest and best use of limited RNG resources. In addition, prioritizing electric heat pumps, including district energy heat pump applications, over generating hydrogen gas from electricity is a more efficient use of BC's electricity resources. The Climate Solutions Council identifies these issues as *Opportunity #7: Electrifying our Economy and Communities* in their 2022 Annual Report.

4) **Develop policies to assess, certify and track the GHG intensity of RNG, hydrogen and other alternative gases** B.C. needs a robust and credible system for assessing the GHG intensity of renewable gases and ensuring these fuels do not contribute further to GHG emissions. Key issues include avoiding double-counting GHG credits and minimizing fugitive methane emissions.

5) **Reform the BCUC in the context of a changing climate to consider to:**
   - consider and minimize lock-in and stranded investment risks when evaluating capital plans, rate setting and extension policies for gas utilities including:
   - ensuring extension policies of gas utilities take into account reduced consumption and stringent GHG limits for new construction;
   - using different depreciation rates and allowable returns on equity for new investments commensurate with the uncertainty over useful life and stranding risk;
   - ensuring non-pipe alternatives are adequately considered as alternatives to maintaining and/or upgrading gas infrastructure, including local decommissioning of gas infrastructure in favour of electrification or district energy; and
   - considering provincial policy and credible independent studies into the future role of hydrogen when considering hydrogen or hydrogen-ready infrastructure
   - proceedings should be guided by a framework or set of guidelines that do not impact or limit the jurisdiction and authority of local governments without provincial direction.

The Climate Solutions Council identifies these issues as *Opportunity #7: Electrifying our Economy and Communities* in their 2022 Annual Report, asking the Province to identify an appropriate role for the BCUC in supporting BC's clean energy transition.

6) **Bring forward legislation and other regulatory changes specific to the heat transition similar to recent initiatives implemented or proposed in the UK, Netherlands, Germany, France and New York State, among others, which would among other things:**
   - recognize the unique role for district energy systems in the energy transition;
   - establish a distinct BCUC regulatory framework for public district energy systems that is more aligned with their small scale and localized nature;
   - provide incentives and resources to support the development of local heat plans to coordinate and optimize incremental investments in gas, electric and district energy infrastructure, as well as spatially targeted retrofit and fuel switching programs and incentives.
   - provide incentives and fairer tax treatment for low-carbon district energy systems, including addressing the unequal burden from property taxes and PST on these systems

7) **Require that a minimum percentage of low-carbon methane-based fuels (i.e. up to 100%) be produced within BC.** Currently there is no requirement that low-carbon gases be produced and procured within B.C. and as a result, FortisBC has sought out low-cost supply in other provinces and in the US. This may help reduce renewable gas prices but it also limits the ability of B.C. workers to benefit from investments in new low-carbon gas production. Procuring out-of-Province gases is a risk because since they are limited resources and it is anticipated that net-zero state- or federal-level commitments in other jurisdictions are likely to affect long-term supply and prices for consumers in B.C. Mandating that a minimum share of gas utilities' low-carbon gases be produced within B.C. would also drive employment opportunities in B.C. and manage the impacts of the energy transition on B.C.'s workforce. The Climate Solutions Council identifies these issues as *Opportunity #8: Minimizing Reliance on Offsets* in their 2022 Annual Report.

City of Richmond

Report to Committee

To:	General Purposes Committee	**Date:**	March 17, 2023
From:	Peter Russell, MCIP, RPP Director, Sustainability and District Energy	**File:**	10-6000-00/Vol 01
Re:	**Changes in Provincial Legislation Needed to Address Gas Utilities in British Columbia**		

Staff Recommendation

1. That, as described in the report titled 'Changes in Provincial Legislation Needed to Address Gas Utilities in British Columbia' from the Director, Sustainability & District Energy, dated March 17, 2023:
   a) Letters be sent to the Premier, the Minister of Municipal Affairs, the Minister of Environment and Climate Change Strategy, the Minister of Energy, Mines and Low Carbon Innovation and to local Members of the Legislative Assembly, asking the Government of British Columbia to
      i. reform the British Columbia Utilities Commission in the context of a changing climate as noted in the report;
      ii. urgently enact legislation that regulates greenhouse gas emissions from gas utilities; and
   b) Letters be sent to Metro Vancouver, Metro Vancouver member local governments, the City of Victoria and the District of Saanich requesting their support by sending letters to the Office of the Premier, the Minister of Municipal Affairs, the Minister of Environment and Climate Change Strategy and the Minister of Energy, Mines and Low Carbon Innovation accordingly.

Peter Russell
Director, Sustainability and District Energy
(604-276-4130)

Att. 3

REPORT CONCURRENCE		
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF GENERAL MANAGER**
Law	☑	
SENIOR STAFF REPORT REVIEW	**INITIALS:**	**APPROVED BY CAO**

Staff Report

Origin

Council adopted the Community Energy & Emission Plan 2050 (CEEP) in February 2022, which emphasized that advocacy, alongside regulation, education, partnerships and the provision of infrastructure and incentives, is an essential tool for achieving the City's greenhouse gas (GHG) 2030 and 2050 emission reduction targets. In this report, it is recommended that the City ask the Government of British Columbia (Province) to take swift action to regulate gas utilities, as committed in the Province's CleanBC plan. This report also recommends that the Province take action to reform the British Columbia Utilities Commission (BCUC) to restore public confidence and to revise its mandate in the context of the Province's GHG reduction targets and.

Related to the above, Council endorsed the call for a Global Fossil Fuel Non-Proliferation Treaty in May 2022, and endorsed a Union of British Columbian Municipalities (UBCM) resolution asking the Province to do the same. The resolution additionally asked the Province to implement a GHG reduction cap on gas utilities. The resolution was not endorsed by the UBCM membership but staff observed that there was a vigorous debate on the matter at the 2022 annual convention.

Finally, on March 14, 2023, the Province announced the launch of a new energy action framework in the context of approval requirements for LNG export facilities. The announcement noted that the Province will '*put in place a regulatory emissions cap for the oil and gas industry to ensure B.C. meets its 2030 emissions-reduction target for the sector*' and '*create a BC Hydro task force to accelerate the electrification of B.C.'s economy by powering more homes, businesses and industries with renewable electricity*'. The recommendations in this report are consistent with these directions but also further expands on how the BCUC can be reformed to support the clean energy transition.

This report supports Council's Strategic Plan 2022-2026 Focus Area #1 Proactive in Stakeholder and Civic Engagement:

> *Proactive stakeholder and civic engagement to foster understanding and involvement and advance Richmond's interests.*
>
> *1.1 Continue fostering effective and strategic relationships with other levels of government and Indigenous communities.*

This report supports Council's Strategic Plan 2022-2026 Focus Area #5 A Leader in Environmental Sustainability:

> *Leadership in environmental sustainability through innovative, sustainable and proactive solutions that mitigate climate change and other environmental impacts.*
>
> *5.1 Continue to demonstrate leadership in proactive climate action and environmental sustainability.*

Findings of Fact

Methane is a greenhouse gas with a global warming potential 28 times that of carbon dioxide, when impacts are compared over a 100-year period.[1] Conventional natural gas is 95% methane, sourced from plant material that was buried over the past 540 million years and chemically transformed into this fossil fuel through heat, pressure and time. Renewable Natural Gas (RNG) is also methane but it is generated through the anaerobic digestion of organic wastes, such as sewage sludge, food waste, and yard waste, that would have otherwise released methane and carbon dioxide to the atmosphere through decomposition within a conventional landfill. RNG can displace fossil methane without further increases in atmospheric concentrations of methane or carbon dioxide. Renewable Gas (RG) includes RNG as well as other potentially low-carbon gases such as hydrogen, which may be derived from fossil fuels with carbon capture, biomass, or green electricity. This report highlights concerns related natural gas, RNG and hydrogen.

Analysis

This report brings together a number of policy and regulatory concerns to light and makes connections as the report progresses. To support readability, the content is organized under the follow section headings:

- Ongoing BCUC and Court of Appeal Proceedings
- The Case for Expedited Regulation of Gas Utilities in BC
- Best Regulatory Practices and Utility Responses
- Urgent Need for Provincial Policy and Review of BCUC's Related Mandate

Ongoing BCUC and Court of Appeal Proceedings

The BCUC is an independent regulatory tribunal of the Government of British Columbia. The BCUC is primarily governed by the Utilities Commission Act. The City is participating or monitoring the following BC Utilities Commission proceedings, based on the rationale below:

- **FortisBC Revised Renewable Gas Program:** FortisBC recognizes that RNG is not a cost-competitive low-carbon solution, so they are proposing to provide new construction with 100% RNG, with additional costs paid for by existing ratepayers who would receive a lower percentage of RNG in their own natural gas supply. The subsidy aggregates to over $750 million over an eight year period from 2024 through 2032, expressed in real dollar terms in 2022 dollars.[2] The use of RNG can be positive and supports circular economy outcomes; RNG is currently being harvested at the Lulu Island Waste Water Treatment plant in which the City purchases RNG credits in order to offset natural gas use at select City facilities for a portion of their annual energy consumption. As active Interveners in this proceeding, staff intend to argue against FortisBC's proposed allocation of 100% RNG in new residential construction on the grounds that existing ratepayers should not be subsidizing new ratepayers at such high levels. Staff will further argue that the highest and best use of this scarce resource is in existing buildings where full

[1] Methane has a much higher GWP of 84-87 when measured over a 20-year period, but breaks down relatively quickly in the atmosphere, resulting in the lower 100-year value.
[2] https://docs.bcuc.com/Documents/Proceedings/2022/DOC_69044_C7-5-CoV-Intervener-Evidence.pdf, page 26.

electrification is not economically feasible. Ultimately, RNG should be used to reduce natural gas use for existing ratepayers and not for the expansion of gas infrastructure. The City is working with other local government Interveners in this proceeding including Metro Vancouver, the cities of Vancouver, Surrey and Victoria and the districts of North Vancouver and Saanich.

- **FortisBC Long-Term Gas Resource Plan:** FortisBC is seeking approval for its vision of continued system growth with an increased overall use of gaseous fuels – including natural gas, augmented by RNG, hydrogen and other fuels. Much of the fuel used would be conventional natural gas to which the "attributes" of low-carbon fuel are transferred. Most of the actual RNG and other low-carbon fuels would be generated in other provinces or the United States, and most of this supply would not be physically transferred to BC for use. Rather, offsets, similar to carbon credits, are transferred from out-of-province and international RNG suppliers. As active Interveners, staff are currently requesting more information from FortisBC regarding current and anticipated RNG agreements and the viability of using of other gases, such as hydrogen in their distribution network. Staff are also concerned that FortisBC's long term gas demand projections do not take into consideration the impact of energy efficiency and carbon reduction standards for cities participating in the BC Energy Step Code and those anticipating to adopt the newly released Zero Carbon Step Code;

- **BCUC Inquiry into Regulation of Municipal Energy Utilities:** The BCUC continues to inquire into issues related to ownership structures and operational arrangements of utilities affiliated with municipalities and regional districts in order to determine whether the BCUC has a mandate to regulate these entities. The City is seeking leave from the Court of Appeal to appeal and quash the BCUC's Stage 1 Inquiry report which concluded that wholly-owned municipal corporations fall under BCUC regulation;

- **BCUC Inquiry into Regulation of Municipal Energy Utilities:** The BCUC continues to inquire into issues related to ownership structures and operational arrangements of utilities affiliated with municipalities and regional districts in order to determine whether the BCUC has a mandate to regulate these entities. The City is seeking leave to appeal the BCUC's Stage 1 Inquiry report which concluded that wholly-owned municipal corporations fall under BCUC regulation;

- **BCUC Inquiry into Hydrogen Energy Services:** BCUC is inquiring into the appropriate regulation of hydrogen in different sectors. Staff note that the applicability of hydrogen is not defined in provincial policy and the findings in this inquiry could be used as *defacto* policy in the absence of policy direction from the Province. This inquiry is a good example of the BCUC effectively setting policy within a policy vacuum created by provincial government inaction; and,

- **City of Richmond v. the BCUC and FortisBC Energy Inc. (Court of Appeal)**: The City has been granted leave to appeal the decision of the BCUC in relation to FortisBC natural gas pipeline relocations in City highways in Burkeville that were necessary to accommodate City infrastructure projects. The BCUC imposed a term which the City

maintains it had no jurisdiction to impose that limits the City's ability to sue and recover damages from Fortis. Recognizing the importance of this issue, the Court of Appeal granted the City leave. The decision of the Court of Appeal is attached as Attachment 1 to this report.

The Case for Expedited Regulation of Gas Utilities in BC

The Province's *CleanBC Roadmap to 2030* highlights that *'local governments play a vital role in meeting provincial climate targets. Along with directly controlling emissions from their own facilities, operations and vehicle fleets, municipalities and regional districts have the capacity to influence about 50% of our GHG emissions through decisions on land use, transportation and infrastructure that affect where people live and work, how they get around, and how their communities grow and change with time. This puts local governments on the front lines of climate action, where all these policies converge.'*[3]

In support of the above, the Province has provided local governments with a number of important tools for achieving GHG emission reductions at the local level, including: the opt-in Energy Step Code for energy efficiency in 2017; increased funding through the Local Government Climate Action Plan in 2022; and most recently, the opt-in Zero Carbon Step Code, adopted into the BC Building Code in February 2023.[4]

Despite these advances, the Province has yet to implement key measures that will determine whether or not Richmond and the Province can fully achieve their respective 2030 and 2050 GHG emission reduction targets. Of particular concern is Province's delayed and piecemeal implementation of specific climate action measures related to the gas sector. The result is a policy vacuum that has enabled provincial agencies and industry to initiate projects that threaten, impede or prevent effective climate action by local governments.

The BCUC has become an agency of particular concern in this context. Staff have the following concerns regarding the wide scope and potential for *de facto* policy-making within current BCUC proceedings, specifically because of their potential to restrict the ability of provincial and local governments to achieve GHG reductions:

- **Feasible North American RNG Supplies**: Because of the finite sources of RNG, research indicates that feasible North American RNG supplies are limited to 5- 20% of existing North American natural gas consumption. The allocation of highly-subsidized 100% RNG in new residential construction as proposed by FortisBC, where electrification is most cost-effective, is not the highest and best use of this scarce resource. While FortisBC has been quick to recognize the value of RNG, and has secured significant supplies from around North America, it is anticipated that once these initial supply contracts expire, the amount of affordable RNG available to FortisBC will decline dramatically as other jurisdictions compete for this limited resource, ultimately leaving ratepayers at risk;

[3] https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc_roadmap_2030.pdf p.44
[4] Richmond Council and staff were vocal advocates for all of these advancements.

- **Cost Competitiveness of RNG**: At present, using unsubsidized RNG in boilers in new construction is not cost-competitive with electric heat pumps and/or with district energy services. Further, heat pumps and Richmond's district energy utilities also provide cooling services, providing resilience for new buildings in the face of climate change. FortisBC's proposed Revised Renewable Gas Program relies on existing natural gas ratepayers to subsidize RNG consumption in new construction to the tune of $750M from 2024 through 2032, enabling the utility to keep increasing overall demand for the fuels it provides. Under the new Zero Carbon Step Code, new construction is already required to reduce GHG emissions so this subsidy has the potential to divert new buildings away from heat pumps, leading to an inefficient use of scarce RNG resources;

- **Overreliance on Hydrogen Gases to Reduce GHGs:** Low-carbon hydrogen is currently not a viable or cost-effective approach for heating buildings. This is validated in over three dozen independent international studies of hydrogen for heating. Producing zero-carbon hydrogen from green electricity for heating could require up to six times as much electricity as using that same electricity directly in a heat pump. In addition, research indicates that existing natural gas infrastructure cannot safely convey a gaseous fuel blend containing more than a 20% hydrogen. At a 20% hydrogen mix, GHG emissions reductions would be less than 7% relative to natural gas. At higher concentrations of hydrogen, major upgrades would be required both to the existing gas distribution network and to end-use devices, including household equipment, to convey the fuel.

- **Health Considerations**: Leakage of methane and hydrogen from gas grids, and end use devices within homes and building is also a growing health and environmental concern, whether these are produced from green energy sources or not.

Best Regulatory Practices and Utility Responses

Research indicates that other jurisdictions have recognized that building heating must largely transition away from gas. There is an emerging consensus that while gas utilities will not disappear, these networks will likely be trimmed and reshaped over time to provide heat and process energy to those existing users that are the most challenging to electrify due to cost and/or location considerations. Given the above concerns, policymakers in the US and in Europe are taking steps to manage this transition to avoid further stranded investments and reduce the impacts on consumers, with policies such as (see Attachment 2 for examples):

a) Prioritizing "non-pipe alternatives" over sustaining, upgrading or expanding gas grids. This approach seeks to implement deep retrofit and fuel-switching programs within defined areas so as to enable the decommissioning of less cost-effective portions of the gas grid, reducing overall systems operations costs.

b) Limiting or banning gas connections for new construction, as has already been done in a number of US cities and parts of Europe;

c) Requiring accelerated depreciation rates for new methane-based fuel infrastructure, reflecting the risk that these assets will need to be retired early and signaling clearly to

gas utilities that they will bear risk for their investments, as is already being done in the UK and Australia;

d) Establishing local "heat planning" processes to coordinate and manage the optimal transition away from gas and towards alternative heating solutions including electrification and low carbon district energy. This could also include consideration of strategic investments to upgrade portions of the gas grid to hydrogen (i.e. to individual users or to supply peaking energy intense users). Staff completed such heat mapping to as part of the City Centre District Energy Utility due diligence work.

Policymakers are aware of the potential for RNG and hydrogen and have determined that these low-carbon gases can play a crucial, but necessarily limited role in decarbonizing BC's economy. When supply limitations, higher costs inherent with RNG and hydrogen fuels are considered, together with the risks of reverting to the use of natural gas in the wake of supply shortfalls, makes it imperative that demand for building heating be transitioned from methane-based fuels to near-zero GHG electricity wherever it is practical to do so. The City is a leader in this regard: building electrification policies in the BC Energy Step Code, district energy services and forthcoming building retrofit initiatives together will support a gas grid transition that will minimize costs and stranded investments compared to an uncoordinated and ad hoc approach.

Urgent Need for Provincial Policy and Review of BCUC's Related Mandate

BC is lagging in addressing the above noted issues. An ongoing policy vacuum at the provincial government level is resulting in continued demand for gas and expansion of gas grids, without any clear and cost-effective pathway to decarbonize existing demand and infrastructure. Natural gas utilities in BC continue to operate within BCUC's utility regulation regime that guarantees profits as a function of investments in infrastructure expansion. Natural gas utilities in BC have continued with a business-as-usual approach without any credible path to full decarbonization that is cost-competitive with significant electrification. For context, FortisBC will invest $666 million in new expansion infrastructure into service in 2023, equivalent to 9% of their total existing infrastructure.

Regarding the utility regulator, the BCUC allows gas utilities to subsidize service extensions, and approves infrastructure expansion plans on past rates of demand growth rather than the projected reductions in energy demand produced by high-performance buildings now being built to BC Energy Step Code requirements. Continuing expansion of gas infrastructure heightens the risk of stranded assets and imposes greater costs and risks for ratepayers, particularly low-income households with fewer options to avoid these costs in future.

As noted above, the long-term potential supply of RNG and alternative gases available for BC residents is limited to a fraction of current demand for natural gas. FortisBC has secured a number supply contracts before many other utilities had entered the market. These contracts are, however, limited in volume and will expire before 2050, placing homeowners and businesses at risk. Further, many of the supply contracts that FortisBC has secured were from sources outside of BC. Most of these fuels will not actually be consumed within BC, foregoing provincial economic and employment opportunities. Instead, FortisBC will transfer the "RNG" attributes

from the producer, similar to carbon credits. By contrast, current provincial energy policy stipulates that all additional electricity supply, virtually all of which is to come from low-carbon technologies, will have to be generated within BC. According to BC Hydro's 2021 assessment of new generation resources, most of this new supply will come from wind farms, solar arrays, small hydro facilities, and biomass plants, at locations throughout the province, powering local jobs and economic activity.

There are also risks for the Province. BC does not have a viable pathway to decarbonize existing demand using natural gas, let alone any increased demand resulting from new development, as would occur if the BCUC approves FortisBC's current application to provide new customers with RNG.

The BCUC is not well-suited to lead the transition of the heating sector, let alone reconfigure energy regulation in the context of the climate crisis. The BCUC was not designed to do so but in the context of a provincial policy vacuum in the regulation of GHGs from gas utilities, this is what is occurring. Regulatory commissions, such as the BCUC, are meant to take a passive approach by assessing proposals by utilities within a relatively narrow set of issues. The scale, complexity and rapidity of the energy transition requires proactive provincial regulation to address emerging issues and cultivate new solutions rather than manage incremental changes. The ongoing provincial policy vacuum on these matters has left the BCUC as the *defacto* lead entity, establishing the Province's energy policies despite its lack of a elected mandate to make these strategic policy determinations.

The BCUC as a *defacto* lead entity is even more concerning given that the BCUC is a captured regulator whose primary objective is advancing the commercial interests of FortisBC. Both the Deputy Chair of the BCUC and a sitting Commissioner are former senior executives of FortisBC. The legitimacy of the BCUC as a regulator depends upon its independence and a clear separation of the BCUC from those it regulates. Public confidence, therefore, demands that the appointments to the BCUC do not include former FortisBC executives. Filling the ranks of the BCUC at its highest levels with former long serving executives and senior employees of FortisBC, who are then tasked to regulate and investigate FortisBC's past and present activities that have resulted from the implementation of corporate policies and procedures which they played a role in establishing, is the opposite of regulatory independence and separation. Moreover, these corporate policies and procedures, combined with BCUC advancing the commercial interests of FortisBC under the guise of ratepayer protection, not only frustrate the GHG reduction goals, but have also resulted in a history of the BCUC saddling municipalities with onerous terms including bearing 100% of the costs of natural gas infrastructure relocations that are necessary to accommodate municipal infrastructure within municipal highways that FortisBC occupies without paying any compensation to municipalities. In effect, the BCUC has forced municipalities to subsidize the shareholders of FortisBC at the expense of the public purse and to the detriment of GHG reduction goals of municipalities and the Province.

A final point and concern is the consideration of local governments in BCUC proceedings. The City should be concerned when an agency of the province, as is the case for the BCUC, independently acts to limit the Provincially-granted jurisdiction of local governments as was the case for BCUC's Inquiry into Regulation of Municipal Energy Utilities. The BCUC does not

have a mandate to establish policy and its regulatory mandate is limited to certain considerations. Ultimately, many aspects of the energy transition will be carried out by local governments and the BCUC does not have the purview of a provincial regulator.

For the above reasons, Attachment 3 includes a set of requests to be sent to the Premier's Office and other Ministers, asking that the Province take urgent action consistent with the Province's commitment to achieve deep GHG emission reductions. More specifically, these requests call upon the Province to:

1) **Bring forward legislation implementing the 2030 GHG cap on the gas sector** without further delay as committed to in the Province's CleanBC plan and recently reaffirmed by the Premier on March 14, 2023 with the launch of a new energy action framework;
2) **Launch an independent gas utility planning exercise** that plots a course for addressing an expected decline in throughput of gas grids and the transition of gas grids towards transporting RNG and hydrogen to sectors and/or locations that are hard to decarbonize, leading to the increased role of electrification in building heating and transport;
3) **Reject the use of RNG and hydrogen in new construction** to meet GHG limits in the Step Code, so that the limited and costly supply of these alternative fuels can be put to highest and best uses;
4) **Develop policies to assess, certify and track the GHG intensity** of RNG, hydrogen and other alternative gases;
5) **Reform the BCUC in the context of a changing climate to** consider, quantify and minimize the potential costs of lock-in and stranded investments when evaluating capital plans, rate setting and extension policies for gas utilities. This direction should also include greater consideration of non-pipe alternatives to marginal investments in gas grids as well as consideration of strategic opportunities to prune gas grids in conjunction with targeted electrification strategies. Finally, proceedings should be guided by a framework or set of guidelines that do not impact or limit the jurisdiction and authority of local governments without provincial direction;
6) **Bring forward legislation and other regulatory changes specific to the heat transition** that, among other issues, establishes a distinct BCUC regulatory framework for public district energy systems more aligned with their small scale and localized nature; and,
7) **Require that a minimum percentage of low-carbon methane-based fuels** (i.e. up to 100%) be produced within BC.

Attachment 3 includes further information related to the above concerns based on information and recommendation in the Climate Solutions Council's (CSC) 2022 Report. The CSC is an advisory group with a legislated mandate under the Climate Change Accountability Act to advise the Minister of Environment and Climate Change Strategy regarding plans and actions to achieve climate targets and reduce emissions and related matters.

Financial Impact

None.

Conclusion

The report highlights and makes a case for the urgent need to implement Provincial legislation that regulates GHG emissions from gas utilities, as committed in the Province's CleanBC Plan and recently reaffirmed by the Premier on March 14, 2023. The report also details ways in which the BCUC can be reformed to better consider GHG reductions from gas utilities. In support of the recommendations, the report highlights a number of international best practices for how gas utilities are being regulated in the context of climate change. Given the importance of the issues highlighted in the report, a recommendation is also included asking Metro Vancouver, other Metro Vancouver local governments, the District of Saanich and the City of Victoria to support the recommendations in the report and send their own support to the Premier, Ministers and their local MLAs.

Peter Russell, MCIP, RPP
Director, Sustainability and District Energy
(604-276-4130)

Att. 1: Decision of the Court of Appeal Richmond (City) v. British Columbia (Utilities Commission)
2: Best Utility Regulatory Practices
3: City of Richmond Requests for the Government of British Columbia

7185313

Attachment 1

COURT OF APPEAL FOR BRITISH COLUMBIA

Citation: *Richmond (City) v. British Columbia (Utilities Commission)*, 2022 BCCA 348

Date: 20221013
Docket: CA48336

Between:

City of Richmond

Appellant
(Applicant)

And

British Columbia Utilities Commission

Respondent
(Administrative Tribunal)

And

FortisBC Energy Inc.

Respondent
(Respondent)

Before: The Honourable Madam Justice Saunders
(In Chambers)

On appeal from: A decision of the British Columbia Utilities Commission, dated May 9, 2022 (Order Number G-123-22).

Oral Reasons for Judgment

Counsel for the Appellant:	T. Kruger
Counsel for the Respondent, British Columbia Utilities Commission:	J.M. Coady, K.C. T. Shoranick
Counsel for the Respondent, FortisBC Energy Inc.:	D.G. Cowper, K.C. M.T. Ghikas T. Ahmed
Place and Date of Hearing:	Vancouver, British Columbia October 6, 2022
Place and Date of Judgment:	Vancouver, British Columbia October 13, 2022

Summary:

The application is for leave to appeal a decision of the British Columbia Utilities Commission taking jurisdiction to limit liability as between the parties. Held: The jurisdictional issue is sufficiently arguable as to meet the criteria of Queens Plate Dev. Ltd. v. Vancouver Assessor, Area 09 (1987), 16 B.C.L.R. (2d) 104. Leave to appeal is granted.

[1] **SAUNDERS J.A.**: The City of Richmond seeks leave to appeal a decision of the British Columbia Utilities Commission acting under the *Utilities Commission Act*, R.S.B.C. 1996, c. 473, on issues between the City and FortisBC Energy Inc.

[2] The issues of appeals to this court are governed by s. 101(1)(b) of the *Act*, which requires leave to appeal:

> 101 (1) An appeal lies from
>
> ...
>
> (b) any other decision or order of the commission to the Court of Appeal, with leave of a justice of that court.

[3] The application for leave to appeal, in turn, is guided by the factors listed in *Queens Plate Dev. Ltd. v. Vancouver Assessor, Area 09* (1987), 16 B.C.L.R. (2d) 104. For purposes of this application, the key factors are Mr. Justice Taggart's points: (a), (b)(i), and (d):

> (a) whether the proposed appeal raises a question of general importance as to the extent of jurisdiction of the tribunal appealed from (*Chevron Can. Ltd. v. Vancouver Assessor, Area 09*, [1986] B.C.W.L.D. 2210, No. CA005532, 17th April 1986 (not yet reported));
>
> (b) whether the appeal is limited to questions of law involving:
>
> (i) the application of statutory provisions (*Allard Contr. Ltd. v. Coquitlam Assessor, Area 12*, [1986] B.C.W.L.D. 2601, No. CA003122, 29th March 1985 (not yet reported));
>
> ...
>
> (d) whether there is some prospect of the appeal succeeding on its merits (*Clarke v. Supt. of Brokers* (1985), 67 B.C.L.R. 294, 23 D.L.R. (4th) 315 (C.A.), and *Re Wasmuth* (1984), 58 B.C.L.R. 17 (C.A.)); although there is no need for a justice before whom leave is argued to be convinced of the merits of the appeal, as long as there are substantial questions to be argued;

[4] In the impugned decision, the Commission declined to reconsider its earlier affirmation of jurisdiction under s. 32 of the *Act* to impose an order limiting the

liability of Fortis to the City, in tort, for loss resulting from Fortis' work directed by the Commission to be performed.

[5] The work concerned offsetting gas mains to enable completion by the City of drainage, sewer, water main and sanitary sewer upgrades in the Burkeville area. The question sought to be raised on appeal is whether ss. 32 and 36 of the *Act* give the jurisdiction propounded by the Commission. Relevant is also s. 92.

[6] Fortis resists the application. The question of liability, it says, is intimately tied to establishment of rates and the recent decision of this court in *Coquitlam (City) v. British Columbia (Utilities Commission)*, 2021 BCCA 336, applies, with the result that the Commission has jurisdiction to make the impugned order.

[7] While the proposed appeal raises a question of jurisdiction, and is limited to a question of law involving the application of the *Act*, Fortis says it cannot meet the merits threshold as the City cannot succeed on the authority of *Coquitlam*. In the vernacular, Fortis says the appeal is a dead duck. In support of that submission, Fortis also refers to *ATCO Gas & Pipelines Ltd. v. Alberta (Energy & Utilities Board)*, 2006 SCC 4.

[8] The City contests Fortis' view of *Coquitlam*. It says *Coquitlam* addressed the jurisdiction of the Commission to order decommissioning and abandonment of a line. That circumstance, says the City, is materially different from orders shielding Fortis from liability.

[9] It seems to me that the application of *Coquitlam* to the circumstances here is sufficiently questionable that the City should have the opportunity to advance its position on that question fully before a division of this court.

[10] Going further into matters that may engage this court, should a division conclude that *Coquitlam* does not answer the jurisdictional question, the questions of statutory interpretation will follow. Those questions, absent *Coquitlam*, have substance, are important, and have the degree of merit required for the granting of leave to appeal.

[11] The application of the City is allowed.

"The Honourable Madam Justice Saunders"

Attachment 2

Best Utility Regulatory Practices

a) *Prioritizing "non-pipe alternatives" over sustaining, upgrading or expanding gas grids. This approach seeks to implement deep retrofit and fuel-switching programs within defined areas so as to enable the decommissioning of less cost-effective portions of the gas grid, reducing overall systems operations costs.*

California: On December 1, 2022, the California Public Utilities Commission (CPUC) adopted a new framework to comprehensively review utility natural gas infrastructure investments in order to help the state transition away from natural gas-fueled technologies and avoid stranded assets in the gas system.[5] Key elements of the decision:

- Utilities must seek CPUC approval of natural gas infrastructure projects of $75 million or more or those with significant air quality impacts.
- Utility applications must demonstrate the need for the project and provide information on projected financial impacts on customers and a summary of engagement with local communities likely to be impacted. Applications would also trigger a California Environmental Quality Act (CEQA) review by the CPUC.
- Emergency projects, routine repair and maintenance projects, and projects expected to be in service by January 1, 2024 are exempt from the new review process.
- To advance transparency in long-term gas system planning, the decision directs utilities to file annual reports detailing planned long-term infrastructure projects exceeding $50 million over the next 10 years. The reports must include a detailed description of the project, projected capital expenditures, cost drivers, and environmental implications.
- For projects planned to start within five years, utilities must provide information on non-pipeline alternatives, projected operational costs, and reliability benefits from the project.

This new framework is modeled on the CPUC's existing framework for review of significant electric infrastructure projects. Previously, all natural gas infrastructure projects were considered in utility General Rate Cases, where individual natural gas projects can get buried in the extensive applications without meaningful environmental or strategic reviews. The framework focusses on avoiding potentially stranded large incremental investments in gas grid infrastructure. It is not yet clear if this framework will be sufficient on its own to minimize stranded investments as there are also questions about the obligation to serve and minimizing safety issues during any transition.

Separately, the state is also beginning to confront the concept of tactical decommissioning of portions of the state's gas infrastructure, as a means of reducing the cost of operating and maintaining the gas grid and managing the transition. This has not yet been tested at scale. Instead, the state is undertaking pilot projects to fill knowledge gaps. In 2021 the CEC awarded two EPIC grants for consortia to conduct pilot projects of strategic pathways and analytics for tactical decommissioning of portions of the natural gas infrastructure within the service areas of Southern California Gas Company (SoCalGas) and Pacific Gas & Electric Company (PG&E).

[5] The proposal voted on is available at docs.cpuc.ca.gov/PublishedDocs/Published/G000/M499/K396/499396103.PDF. Documents related to the proceeding are available at apps.cpuc.ca.gov/p/R2001007

These pilots are still in progress. The team for the pilot project in PG&E's service area includes East Bay Community Energy (EBCE), Energy and Environmental Economics (E3), and Gridworks. PG&E is assisting the team with technical insights into their gas and electric systems.[6] Elements of the pilot include:

- Develop a replicable framework to identify electrification opportunities that support the objective of gas system cost savings through tactical decommissioning.
- Engage local communities to share their perspectives and priorities related to building electrification and gas decommissioning in order to produce a community needs assessment.
- Identify up to three candidate pilot sites, including at least one within a disadvantaged community. Produce deployment plans for the recommended pilots, including a proposal for community stakeholder engagement.
- Conduct targeted education and outreach to stakeholders and policymakers within and beyond California to motivate action, including lessons learned at key milestones and final work products.

Northeastern US : National Grid, a natural gas distributor operating in New York, Massachusetts and Rhode Island, actively seeks non-pipeline alternatives (NPA) which would allow it to avoid or defer upgrades to the natural gas system. It has already completed several NPA projects and is seeking several new opportunities based on system needs[7]. Other gas utilities in New York state, including Con Edison and NYSEG, have established similar programs to defer major investments[8]. These initiatives seem to be largely driven by the companies themselves rather than by regulation. In general, the northeast US has an older natural gas network than B.C. with more need for major upgrades and replacements.

a. *Limiting or banning new gas connections, as has already been done in a number of US cities and parts of Europe;*

California: The updated state building code requires, as a baseline, the use of electric heat pumps for either space heating or DHW. Builders can forego installing a heat pump but face greater energy efficiency requirements as a result. This is expected to result in most homes constructed from 2023 onwards to have no gas grid connection[9]. Separately, several California communities have enacted bans on new gas grid connections for new construction within their boundaries.

Washington State: Updates to the state's building code mean that new multi-family residential and commercial construction will be required to have all-electric heating and DHW systems as of 2023[10]. Previously, individual municipalities in Washington had enacted similar policies.

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[6] https://gridworks.org/2022/06/tactical-gas-decommissioning-project-overview/
[7] https://www.nationalgridus.com/Business-Partners/Non-Pipeline-Alternatives/Third-Party-Opportunities
[8] https://info.aee.net/hubfs/Sarah%20S%20uploads/NPAs.pdf
[9] https://www.nrdc.org/media/2021/210811-0
[10] https://www.seattletimes.com/seattle-news/environment/wa-building-council-votes-to-require-heat-pumps-in-new-homes-and-apartments/

Quebec: As of 2023, oil-fired furnaces cannot be replaced with new fossil fuel-based heating systems in Quebec. This is expected to help shift existing oil-heated buildings to electrification[11].

b. Requiring accelerated depreciation rates for new methane-based fuel infrastructure, reflecting the risk that these assets will need to be retired early and signaling clearly to gas utilities that they will bear risk for their investments, for example in the UK and Australia;

California: As of early 2023, Pacific Gas & Electric has a rate application before the California Public Utilities Commission which includes accelerated depreciation for its gas distribution grid, driven in part by the possibility of the grid being rendered obsolete by California's Net Zero by 2045 commitment. The CPUC has yet to rule on this request[12].

UK: In 2011 the UK national regulator, Ofgem, established a new performance-based model to regulate network costs for gas and electricity, referred to as the RIIO model or Revenues = Incentives + Innovation + Output. One of the inputs to the model is an asset life and depreciation profile for gas and electricity utilities (both transmission and distribution segments). At the time, Ofgem established an asset life of 45 years for gas distribution but also uses a front-end loaded depreciation profile for these assets which is different from gas transmission and also electricity. This allocates a larger share of depreciation charges to the initial period of depreciation. The effect of this decision is that ~75% of new gas distribution assets are recovered in the first 22 years of use. For comparison, under straightline depreciation rates of 50 – 60 years typically seen for B.C., only 35 – 45% of the asset is recovered by Year 22. The increased depreciation means current ratepayers pay more of these assets affecting economic comparisons with alternatives and there is less chance of stranded assets being borne by a smaller and captive group of customers in future.

Australia: In 2021, the Australian Energy Regulator (AER) issued a decision allowing a gas distribution utility to include accelerated depreciation for rate setting purposes so as to reduce bill impacts on future customers due to future declines in gas demand[13]. Other Australian gas utilities have since proposed similar rate treatment.

d. Establishing local "heat planning" processes to coordinate and manage the optimal transition away from gas and towards alternative heating solutions including electrification and low carbon district energy. This could also include consideration of strategic investments to upgrade portions of the gas grid to hydrogen (i.e. to individual users or to supply peaking energy intense users). Staff completed such heat mapping to as part of the City Centre District Energy Utility due diligence work.

Denmark: Denmark pioneered the concept of top-down policies coupled with bottom-up power, which is often credited with the extensive and sustained growth of district energy in the country and rapid transition to renewables in heating. The 1979 *Danish Heat Supply Act* provided the

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[11] https://www.cbc.ca/news/canada/montreal/quebec-bans-oil-heating-1.6252420
[12] "Opening Brief on Depreciation of Pacific Gas and Electric Company (U39M)", CPUC Proceeding A2106021.
[13] "Final Decision – Evoenergy Access Arrangement 2021 to 2026, Overview April 2021". Australian Energy Regulator, pp. 37-39. https://www.aer.gov.au/system/files/AER%20-%20Final%20decision%20-%20Evoenergy%20access%20arrangement%202021-26%20-%20Overview%20-%20April%202021.pdf

legal framework for municipal heat plans and planning. Under the framework, municipalities are responsible for approving district energy projects, subject to national standards for feasibility which includes requirement for lifecycle costing, evaluation of both financial and non-financial considerations, common evaluation methodologies, and standardization of some common assumptions.

Others: While frameworks and requirements for local heat planning have existed for many years in Denmark, it is now showing up in other jurisdictions. Three examples where heating and cooling plans have recently become mandatory include: the State of Baden Württemberg in Germany (under its revised 2021 Heating Climate Protection Act); The Netherlands (under the 2019 Dutch National Climate Agreement); and Scotland (under the 2021 Heat Network Act and 2022 Local Heat and Energy Efficiency Strategies (LHEES) statutory order.[14] Some of these mandates allow municipalities to implement mandatory connection in district energy priority zones (for certain types of buildings and with conditions).

The European Commission has proposed updating its Energy Efficiency Directive to require Member States to make heating and cooling plans mandatory for municipalities above a threshold of 50,000 inhabitants. Building on the direction from the European Commission and also the experience of several states which already have mandatory heat planning (e.g. Baden Württemberg, above, and also Schleswig-Holstein), the federal government of Germany is planning to introduce a national mandate for municipal heat plans in cities over 10,000 to 20,000 inhabitants (thresholds will be determined by states). The obligation would be implemented by states (which regulate cities), but it would come with federal law to permit cities to request the necessary data from energy suppliers and others in preparing heat plans. These heat plans are to include an inventory analysis, an analysis of potential, target scenarios and an action strategy. It is expected heat plans will include, among other things, the creation of heat registers (including waste heat sources), the monitoring of heat network expansion, the decarbonization of existing heat networks, the securing of areas for energy generation and storage, and concepts refurbishing of public buildings.[15]

The UK (which is no longer subject to EU requirements after Brexit) has recently introduced national requirements for municipal heat zoning as part of its recent Energy Security Bill (see Appendix B). A pilot program for to test a heat zoning methodology is under way. A consultation is planned for later this year on the detail of regulations for heat network zoning. In early 2022, the UK government set up A Heat Network Zoning Pilot Program (HNZPP) to test a methodology for heat network zoning in ~28 English cities and towns of varying sizes. The results of the pilot program are expected in early 2023.[16]

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14 https://energy-cities.eu/wp-content/uploads/2022/06/Factsheet-1-Final-1.pdf

15 https://www.bayern-innovativ.de/en/page/draft-law-on-municipal-heat-planning-by-the-end-of-the-year

16 https://www.gov.uk/government/publications/heat-networks-zoning-pilot#:~:text=The%20zoning%20pilot%20aims%20to,mandating%20powers%20and%20market%20support

Attachment 3

City of Richmond Requests of the Government of British Columbia

Summary of issues to be included in the letters to Government of BC elected officials, as listed in the report:

1) **Bring forward legislation implementing the 2030 GHG cap on the gas sector** without further delay as committed to in the Province's CleanBC plan and recently reaffirmed by the Premier on March 14, 2023 with the launch of a new energy action framework;
2) **Launch an independent gas utility planning exercise that plots a course for addressing an expected decline in throughput of gas grids** and the transition of gas grids towards transporting RNG and hydrogen to sectors and/or locations that are hard to decarbonize, consistent with the Province's 2030, 2040 and 2050 GHG emission reduction targets, all leading to the increased role of electrification in building heating and transport.
3) **Reject the use of RNG and hydrogen in new construction to meet GHG limits in the Step Code**, so that the limited and costly supply of these alternative fuels can be put to highest and best uses.
4) **Develop policies to assess, certify and track the GHG intensity of RNG, hydrogen and other alternative gases.**
5) **Reform the BCUC in the context of a changing climate to consider,** quantify and minimize the potential costs of lock-in and stranded investments when evaluating capital plans, rate setting and extension policies for gas utilities. This direction should also include greater consideration of non-pipe alternatives to marginal investments in gas grids as well as consideration of strategic opportunities to prune gas grids in conjunction with targeted electrification strategies. Finally, proceedings should be guided by a framework or set of guidelines that do not impact or limit the jurisdiction and authority of local governments without provincial direction;
6) **Bring forward legislation and other regulatory changes specific to the heat transition** that, among other issues, establishes a distinct BCUC regulatory framework for public district energy systems more aligned with their small scale and localized nature;
7) **Require that a minimum percentage of low-carbon methane-based fuels (i.e. up to 100%) be produced within BC.**

More information to be included as an attachment in the letters:

1) **Bring forward legislation implementing the 2030 GHG cap on the gas sector without further delay** as committed to in the Province's CleanBC plan and recently reaffirmed by the Premier on March 14, 2023 with the launch of a new energy action framework;

2) **Launch an independent gas utility planning exercise that plots a course for addressing an expected decline in throughput of gas grids** and the transition of gas grids towards transporting RNG and hydrogen to sectors and/or locations that are hard to

decarbonize, consistent with the Province's 2030, 2040 and 2050 GHG emission reduction targets, all leading to the increased role of electrification in building heating and transport.

3) **Reject the use of RNG and hydrogen in new construction to meet GHG limits in the Step Code, so that the limited and costly supply of these alternative fuels can be put to highest and best uses.** RNG volumes are very limited and RNG may be the only option for decarbonizing heavy industry and some portions of the transportation sector. There are affordable low-carbon alternatives for heating new buildings. Heating new buildings is not the highest and best use of limited RNG resources. In addition, prioritizing electric heat pumps, including district energy heat pump applications, over generating hydrogen gas from electricity is a more efficient use of BC's electricity resources. The Climate Solutions Council identifies these issues as *Opportunity #7: Electrifying our Economy and Communities* in their 2022 Annual Report.

4) **Develop policies to assess, certify and track the GHG intensity of RNG, hydrogen and other alternative gases** B.C. needs a robust and credible system for assessing the GHG intensity of renewable gases and ensuring these fuels do not contribute further to GHG emissions. Key issues include avoiding double-counting GHG credits and minimizing fugitive methane emissions.

5) **Reform the BCUC in the context of a changing climate to consider to:**
   - consider and minimize lock-in and stranded investment risks when evaluating capital plans, rate setting and extension policies for gas utilities including:
   - ensuring extension policies of gas utilities take into account reduced consumption and stringent GHG limits for new construction;
   - using different depreciation rates and allowable returns on equity for new investments commensurate with the uncertainty over useful life and stranding risk;
   - ensuring non-pipe alternatives are adequately considered as alternatives to maintaining and/or upgrading gas infrastructure, including local decommissioning of gas infrastructure in favour of electrification or district energy; and
   - considering provincial policy and credible independent studies into the future role of hydrogen when considering hydrogen or hydrogen-ready infrastructure
   - proceedings should be guided by a framework or set of guidelines that do not impact or limit the jurisdiction and authority of local governments without provincial direction.

   The Climate Solutions Council identifies these issues as *Opportunity #7: Electrifying our Economy and Communities* in their 2022 Annual Report, asking the Province to identify an appropriate role for the BCUC in supporting BC's clean energy transition.

6) **Bring forward legislation and other regulatory changes specific to the heat transition similar to recent initiatives implemented or proposed in the UK, Netherlands, Germany, France and New York State, among others, which would among other things:**
   - recognize the unique role for district energy systems in the energy transition;

- establish a distinct BCUC regulatory framework for public district energy systems that is more aligned with their small scale and localized nature;
- provide incentives and resources to support the development of local heat plans to coordinate and optimize incremental investments in gas, electric and district energy infrastructure, as well as spatially targeted retrofit and fuel switching programs and incentives.
- provide incentives and fairer tax treatment for low-carbon district energy systems, including addressing the unequal burden from property taxes and PST on these systems

7) **Require that a minimum percentage of low-carbon methane-based fuels (i.e. up to 100%) be produced within BC.** Currently there is no requirement that low-carbon gases be produced and procured within B.C. and as a result, FortisBC has sought out low-cost supply in other provinces and in the US. This may help reduce renewable gas prices but it also limits the ability of B.C. workers to benefit from investments in new low-carbon gas production. Procuring out-of-Province gases is a risk because since they are limited resources and it is anticipated that net-zero state- or federal-level commitments in other jurisdictions are likely to affect long-term supply and prices for consumers in B.C. Mandating that a minimum share of gas utilities' low-carbon gases be produced within B.C. would also drive employment opportunities in B.C. and manage the impacts of the energy transition on B.C.'s workforce. The Climate Solutions Council identifies these issues as *Opportunity #8: Minimizing Reliance on Offsets* in their 2022 Annual Report.

Analysis of Richmond's Recommendations in Relation to the *Climate 2050 Energy Roadmap*

The following are the Richmond City Council's recommendations (**in bold**), as presented in their letter dated May 23, 2023 (Attachment 1 to the report). Below each of Richmond City Council's recommendation is Metro Vancouver's assessment in relation to the *Climate 2050 Energy Roadmap*:

1. **"Bring forward legislation implementing the 2030 GHG cap on the gas sector without further delay as committed to in the Province's CleanBC plan and recently affirmed by the Premier on March 14, 2023 with the launch of a new energy action framework."**

   This recommendation is strongly aligned with Action 1.1, "Align British Columbia's Energy Objectives with Strong Climate Action", which calls upon the BC Government to update BC's energy objectives within the *Clean Energy Act* to reflect strong action on climate change, such as implementing the natural gas utilities emissions cap announced in the *CleanBC Roadmap to 2030*.

2. **"Launch an independent gas utility planning exercise that plots a course for addressing an expected decline in throughput of gas grid and the transition of gas grids towards transporting RNG and hydrogen to sectors and/or locations that are hard to decarbonize, consistent with the Province's 2030, 2040 and 2050 GHG emission reduction targets, all leading to the increased role of electrification in building heating and transport."**

   The intent of this recommendation is strongly aligned with Action 1.4, "Long-term Planning Scenarios for the Transition to 100% Clean, Renewable Energy", which calls upon the BC Government, the BCUC, and the energy utilities to include coordinated long-term planning scenarios in their long term resource plans, including a scenario with accelerated electrification and declining gas demand. Long-term resource planning is the current legislated tool used for future gas planning, and should also be utilized as the method to plan for the utility's transition to a net-zero future. The overall intent of this recommendation is strongly aligned with the Energy Roadmap, namely, advocating for adequate planning to manage potential decline in gas throughput in order to protect affordability, and managing the transition to renewable gases.

3. **"Reject the use of RNG and hydrogen in new construction to meet GHG limits in the Step Code, so that the limited and costly supply of these alternative fuels can be put to highest and best uses."**

   This recommendation is strongly aligned with the Energy Roadmap, which notes that RNG and hydrogen should be prioritized in difficult-to-electrify sectors, and therefore, not new construction. This recommendation is also aligned with *Opportunity #7: Electrifying our economy and communities* in CSC's 2022 Annual Report, which notes that electrification should be prioritized in new homes, buildings, and vehicles.

4. **"Develop policies to assess, certify and track the GHG intensity of RNG, hydrogen and other alternative gases."**

   This recommendation is strongly aligned with Action 1.6, "Implement Tracking, Verification, and Reporting Requirements for Renewable Natural Gas Supply" and would address the considerable double-counting risks associated with out-of-province renewable gases that were cited in the Energy Roadmap. This recommendation is also strongly aligned with *Opportunity #1: Greenhouse Gas Reduction Standard (GHGRS)* in CSC's 2022 Annual Report, in which the CSC recommends to the Province that renewable gas credits from other provinces (i.e., notional RNG) should follow a rigorous carbon accounting system that clearly demonstrates a concomitant decrease in natural gas consumption in the exporting province. Furthermore, such credits "should not be accepted unless there is clarity that the credits will apply to Canada's reduction commitment under the Paris agreement, and that there will not be double counting".

5. **"Reform the BCUC in the context of changing climate to consider, quantify and minimize the potential costs of lock-in and stranded investments when evaluating capital plans, rate setting and extension policies for gas utilities. This direction should also include greater consideration for non-pipe alternatives to marginal investments in gas grids as well as consideration of strategic opportunities to prune gas grids in conjunction with targeted electrification strategies. Finally, proceedings should be guided by a framework or set of guidelines that do not impact or limit the jurisdiction and authority of local governments without provincial direction."**

   This recommendation is generally aligned with the Energy Roadmap, in that reform of the BCUC is needed in order to better plan for the energy transition. The BCUC is already required by current legislation to consider costs of lock-in and stranded investments within their decision-making, but the "policy vacuum" in energy policy, as cited by City of Richmond staff, has created considerable uncertainty about the future of the gas grid, specifically on the degree of utilization of the gas grid in a net-zero future. The Province needs to better outline what the future of the gas system will look like in light of CleanBC, in order to enable the gas utilities and the BCUC to more prudently plan for the future. Moreover, in a recent BCUC report related to the acquisition of RNG, it was stated on the public record by the BCUC Panel that "the BCUC is not able to consider matters such as an orderly transition to a net-zero carbon energy system in BC when interpreting the GGRR. It is a matter for the government to determine the policy actions that it considers to be in the public interest." There is clearly a policy gap that needs to be addressed by the Province, so as to provide the BCUC with a clear climate mandate.

   As per Action 1.1, "Align British Columbia's Energy Objectives with Strong Climate Action" and Acton 1.2, "Strong Climate Mandate for Energy Utilities", one potential avenue to reform the BCUC is to update BC's *Clean Energy Act* and *Utilities Commission Act* to reflect strong action on climate change and provide a strong climate mandate for energy utilities. This recommendation is also aligned with *Opportunity #7: Electrifying our economy and communities* in CSC's 2022 Annual Report, which encourages the Province to identify an appropriate role for the BCUC in supporting the clean energy transition.

6. **"Bring forward legislation and other regulatory changes specific to the heat transition that, among other issues, establishes a distinct BCUC regulatory framework for public district energy systems more aligned with their small scale and localized nature."**

   This recommendation is generally aligned with *Climate 2050* in acknowledging that public district energy systems can play a unique role in the energy transition, because they are capable of using a variety of different low carbon energy sources, including resources that have traditionally not been beneficially used, such as sewer heat or biomass. Staff are supportive of regulatory changes that support and encourage the development of district energy systems.

7. **"Require that a minimum percentage of low-carbon methane-based fuels (i.e. up to 100%) be produced within BC."**

   This recommendation is strongly aligned with addressing the considerable double-counting risks associated with out-of-province renewable gases outlined in the Energy Roadmap. This recommendation is also strongly aligned with *Opportunity #1: Greenhouse Gas Reduction Standard (GHGRS)* and *Opportunity #8: Minimize reliance on offsets* in CSC's 2022 Annual Report, in which the CSC recommends to the Province that renewable gas credits from other provinces (i.e., notional RNG) should be limited in time and amount.

References

1. Metro Vancouver Climate 2050 Energy Roadmap, dated April 2023
2. Climate Solutions Council's 2022 Annual Report re "Mind the Gaps: Accelerating the Implementation of the CleanBC Roadmap to 2030"
3. British Columbia Utilities Commission, Inquiry into the Acquisition of RNG by Public Utilities in British Columbia – Phase 2 Report

To: Climate Action Committee

From: Esther Berube, Division Manager, Air Quality and Climate Change
Laura Taylor, Senior Engagement Specialist, External Relations

Date: June 23, 2023 Meeting Date: July 6, 2023

Subject: **Phase 2 Engagement Summary and Next Steps for Managing Emissions from Cannabis Production and Processing**

RECOMMENDATION

That the MVRD Board:

a) send a letter to the Ministers of Agriculture and Food, Environment and Climate Change Strategy, and Public Safety and the Solicitor General requesting collaboration with Metro Vancouver on developing a concerted approach for managing emissions from cannabis production and processing in the Metro Vancouver region in a manner that protects public health and regional economic prosperity; and
b) direct staff to continue developing options to manage emissions from cannabis production and processing as described in the report dated June 23, 2023, titled "Phase 2 Engagement Summary and Next Steps for Managing Emissions from Cannabis Production and Processing".

EXECUTIVE SUMMARY

Volatile organic compound (VOC) emissions from cannabis production are air contaminants that can contribute to the formation of harmful ground-level ozone. These VOC are also odorous. Hotter, drier summers, due to climate change, are expected to increase concentrations of ground-level ozone in urban areas. In May 2019 and July 2021, the MVRD Board directed staff to undertake two phases of engagement on proposed approaches for managing emissions from cannabis production and processing. This report summarizes feedback from phase 2 engagement, as well as proposed next steps that are aligned with the Board-adopted *Clean Air Plan*. Feedback from residents and municipal staff indicated strong support for enhanced management of emissions from cannabis production and processing, while cannabis producers and the agricultural sector expressed significant concerns about the anticipated cost of compliance, emission estimates, and perceived risk of regulatory expansion into other agricultural operations.

Metro Vancouver engaged with staff from the Ministries of Agriculture and Food, Environment and Climate Change Strategy, and Public Safety and the Solicitor General. Different ministry mandates and priorities have led to challenges with moving this work forward, despite being aligned on our mutual interests in public health, environmental protection, regional economic prosperity, and public safety. Metro Vancouver and the Ministry of Agriculture and Food conducted separate emission estimates that led to different conclusions about projected VOC emission levels and impacts from cannabis production. Closer collaboration with the Province on refined emission projections could inform the development of a mutually agreeable, coordinated emission management approach, which is needed to ensure that our future actions advance our mutual interests.

PURPOSE

To seek MVRD Board support for enhanced collaboration with the Ministries of Agriculture and Food, Environment and Climate Change Strategy, and Public Safety and Solicitor General (Cannabis Secretariat) on developing a concerted approach for managing emissions from cannabis production and processing.

BACKGROUND

In May 2019, the MVRD Board directed staff to proceed with engagement on the proposed approach for managing emissions from cannabis production and processing. In July 2021, the Board authorized staff to proceed with the next phase of engagement on an updated regulatory discussion paper. In September 2021, the Board endorsed the *Clean Air Plan,* which includes a strategy (4.1.7) to develop an emission regulation for cannabis production and processing.

This report presents a summary of the feedback received during phase 2 engagement in 2021-2022 and Metro Vancouver staff's proposed next steps in response to the feedback.

IMPACT ON AIR QUALITY IN THE METRO VANCOUVER REGION

When the Government of Canada legalized recreational cannabis in October 2018, several greenhouses used for vegetable production were retrofitted for cannabis production, but these facilities were not designed or constructed to collect and treat air contaminants.

Ground-level Ozone Formation

The *Clean Air Plan* sets the goal to meet or be better than ambient air quality objectives and standards established at the regional, provincial, and federal levels for ground-level ozone and other air contaminants. VOC emissions from cannabis production and processing can contribute to the formation of ground-level ozone that is harmful to human health and vegetation and acts as a short-lived climate forcer. Metro Vancouver has taken steps to reduce VOC emissions that contribute to ground-level ozone formation per the *Regional Ground-Level Ozone Strategy* adopted by the Board in 2014 and developed in collaboration with provincial and federal agencies. Reducing VOC emissions from sources of concern has become even more important, since ground-level ozone concentrations in urban areas are expected to increase due to global warming. In June 2021, an air quality advisory for ground-level ozone was issued during the extreme heat event, when ozone levels approached high levels not observed since the 1980s. In May 2023, an exceptionally early air quality advisory for ground-level ozone was issued during an early heat wave.

Odour Impacts

VOC emissions from cannabis production and processing are also odorous. In addition to the many complaints received by member municipalities since 2018, Metro Vancouver has received 200 to 400 complaints per year about odour impacts associated with cannabis production and processing.

EVOLUTION OF PROPOSED MANAGEMENT APPROACH

Metro Vancouver staff engaged on initial proposals to manage emissions from this sector between 2019 and 2021. Staff received feedback from phase 1 engagement, and revised the proposals for phase 2 engagement in response to this feedback as described in References 1 and 2.

Initial Proposals for Phase 1 Engagement
The initial proposals focused on managing VOC emissions in smaller indoor and outdoor facilities below a surface area of 50,000 m^2 or processing capacity of 50,000 kg. VOC emissions were to be contained and captured using activated carbon filtration. Additional control measures were proposed during air quality advisories.

Revised Proposals for Phase 2 Engagement
The revised requirements proposed in phase 2 engagement included mandatory levels of VOC emission control efficiency using activated carbon filtration for indoor facilities. The requirements would apply to all sizes of facilities, excluding outdoor cultivation. This emission control would reduce, but not eliminate, the potential contribution to ground-level ozone and odour impacts. A higher level of emission control efficiency was proposed for cannabis trimming rooms and drying rooms, which rely on mechanical ventilation that helps capture and treat emissions generated in the rooms. Facilities would be required to achieve emission control efficiencies at all times, with no additional measures during air quality advisories. The proposed requirements also mandated the use of qualified professionals in the development of site-specific emission management plans for large facilities for approval by Metro Vancouver's District Director. A minimum distance of 200 metres was also proposed between new facilities and land zoned or designated for sensitive uses such as daycares, schools, hospitals, residences, and playgrounds.

SUMMARY OF PHASE 2 ENGAGEMENT
From August 2021 to February 2022, staff sought feedback on the revised proposals from the public and key audiences including cannabis producers, the broader agricultural sector, member jurisdictions, First Nations, and other orders of government. Activities included 20 meetings with industry representatives and government partners, three public webinars, and an online feedback form that received 111 responses (65% of which had not participated in the previous engagement). A majority of those who provided feedback via online forms support having an emission regulation to improve air quality. The engagement summary (Attachment 1) presents the engagement process and feedback.

First Nations Engagement
Correspondence was sent to the 10 in-region First Nations, 19 out-of-region First Nations, three Tribal Councils, and one treaty group to seek feedback on the proposed regulatory approach, and to receive perspectives on the potential challenges in adopting this approach. Metro Vancouver staff met with Kwantlen First Nation who expressed concern around equity and fairness for all crop producers, which is a key consideration in the regulation development process.

Engagement with the Province
Metro Vancouver staff met with staff from the Ministry of Public Safety and Solicitor General and the Agricultural Land Commission, as well as meeting on a monthly basis with staff from the Ministries of Agriculture and Food, and Environment and Climate Change Strategy. Metro Vancouver staff gained a better understanding of provincial priorities, the challenges and concerns of cannabis producers and the agricultural sector, different perspectives on emission projections and the rationale for pursuing a regional emission regulation, and the Ministry of Agriculture and

Food's Minister's Bylaw Standards that provide guidance to local governments developing bylaws affecting farming areas.

Key Feedback from Phase 2 Engagement

Feedback	Proposed next steps in response to feedback
Support from residents impacted by emissions from cannabis production and from staff in several member jurisdictions	Continue advancing options for Metro Vancouver to manage emissions from cannabis production in collaboration with the provincial and federal governments.
Strong opposition from larger producers and some agricultural advisory committees, including Metro Vancouver's Agricultural Advisory Committee	Refine proposed requirements in response to concerns as described below.
Concern about the risk of the regulation expanding to other farming activities	Continue collaborating with Ministry of Agriculture and Food on applying agriculture sector best management practices for emissions from farming activities of concern.
Concerns about negative impact on plant growth and financial burden	Instead of a high VOC emission control efficiency requirement for all existing greenhouses, which can be costly to comply with, use a site-specific maximum achievable level of VOC removal determined by a qualified professional, considering site-specific design factors and the level of VOC removal in similar facilities. Accept biofilters as an emission control technology for growing areas in existing greenhouses, if a qualified professional determines that a biofilter can achieve a similar level of control as an activated carbon filter, which is the standard technology used in this sector.
Concerns about stalling industry growth and incentivizing illegal production	Reduce the regulatory burden on smaller operations by having a lower registration fee for "micro-facilities" with a growing area of less than 200 m^2. Review an emission regulation within three years of adoption.
Concern about impinging on municipal authority over land use planning through minimum distance requirements	Convene municipal staff to share best practices for setting minimum distances between new facilities and nearby sensitive uses considering Minister's Bylaw Standards, instead of establishing regional regulatory requirements.
Disagreement with data and assumptions used in Metro Vancouver's initial emission estimate and rationale for the proposed requirements	Seek Board direction for staff to pursue a common understanding of emission estimates and projections, in collaboration with the Ministries of Agriculture and Food, Environment and Climate Change Strategy, and Public Safety and Solicitor General (Cannabis Secretariat).

DEVELOPING A CONCERTED APPROACH TO EMISSION MANAGEMENT

Emission projections and the rationale for pursuing an emission regulation for this sector continue to be points of contention. In 2019, Metro Vancouver forecasted the uncontrolled VOC emissions to range from 328 to 2083 tonnes per year, of which the midpoint would be 2% of the regional total (Reference 3). Metro Vancouver regulates various VOC-emitting equipment, activities, and operations through emission regulations and site-specific permits that complement federal requirements on VOC-emitting products like paints. The estimated level of VOC from cannabis production is comparable to other regulated sources of VOC, such as gasoline distribution (2.3%) or automotive refinishing facilities (0.5%), whose emissions Metro Vancouver improves through amendments to applicable permits and emission regulations (Reference 4).

The BC Ministry of Agriculture and Food retained Ramboll Canada Inc. (Ramboll) to estimate VOC emissions from cannabis cultivation in 2021 (Reference 5), which forecasted uncontrolled VOC emissions near the lower end of the range identified by Metro Vancouver (197 to 461 tonnes per year). The studies also included different assumptions about the level of emission controls used in the industry. To address concerns about the difference in estimated emissions, Metro Vancouver retained Ramboll in 2022 to update estimated VOC emissions, considering emissions from cannabis processing as well as from cultivation. Ramboll examined the estimates they prepared in 2021, and conducted a sensitivity analysis based on different assumptions and methodologies. Preliminary findings indicate that the assumptions and methodologies can have a significant impact on the resulting emission estimates.

Staff have requested collaboration with the Province to confirm assumptions, methodologies, and the resulting current and forecasted emission estimates. Reaching a common understanding of emissions will foster a better understanding of potential costs and benefits associated with reducing emissions and the value of pursuing various options for emission management. Through its delegated authority under the *Environmental Management Act*, Metro Vancouver has various regulatory options for emission management, whereas the Province uses non-regulatory guidance and incentives to enhance emission management from agricultural operations. Staff recommend inviting the Province to collaborate on the development of a concerted emission management approach informed by a common understanding of emissions and impacts, which also considers the broader implications for the public health and economic prosperity of the region and the province.

Our changing climate and the increased likelihood of hotter, drier summers may also be increasing the impact of VOC emissions on air quality. Metro Vancouver is working with federal, provincial, and regional partners and health agencies to study the impact of VOC emissions on ground-level ozone formation and air quality in a changing climate. In the meantime, given the recent exceedances in ground-level ozone during heat events, staff recommend to continue developing an emission regulation for cannabis production and processing while authorizing controlled emissions through site-specific air emission permits where appropriate as well as encouraging the Ministry of Agriculture and Food to develop non-regulatory guidance for emission management.

ALTERNATIVES

1. That the MVRD Board:

a) send a letter to the Ministers of Agriculture and Food, Environment and Climate Change Strategy, and Public Safety and the Solicitor General requesting collaboration with Metro Vancouver on developing a concerted approach for managing emissions from cannabis production and processing in the Metro Vancouver region in a manner that protects public health and regional economic prosperity; and
b) direct staff to continue developing options to manage emissions from cannabis production and processing as described in the report dated June 21, 2023, titled "Phase 2 Engagement Summary and Next Steps for Managing Emissions from Cannabis Production and Processing".

2. That the MVRD Board receive for information the report titled "Phase 2 Engagement Summary and Next Steps for Managing Emissions from Cannabis Production and Processing", dated June 23, 2023, and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

Under Alternative 1, the cost of additional consulting services would be accommodated within the approved budget for 2023.

CONCLUSION

At its July 2021 meeting, the Board directed staff to conduct phase 2 of engagement on regulatory proposals for managing emissions from cannabis production and processing. The two phases of engagement have revealed contrasting perspectives with respect to the proposed requirements and the need for an emission regulation. Emission estimates and the rationale for pursuing an emission regulation continue to be points of contention with the cannabis sector. Staff are considering potential revisions to the regulatory proposal in response to feedback, which could be incorporated into an emission regulation for Board consideration that would establish requirements that protect air quality and mitigate hardship for the cannabis sector. Staff recommend Alternative 1, that the MVRD Board send a letter to the Ministers of Agriculture and Food, Environment and Climate Change Strategy, and Public Safety and the Solicitor General requesting collaboration with Metro Vancouver on developing a concerted approach for managing emissions from cannabis production and processing in the Metro Vancouver region that considers the options for emission management available at the provincial and regional levels.

Attachments

1. "Proposed Measures to Manage Emissions from Cannabis Production and Processing: Phase 2 Engagement Summary" report, dated December 2022.
2. Presentation re Phase 2 Engagement Summary and Next Steps for Managing Emissions from Cannabis Production and Processing

References

1. Climate Action Committee Revised Agenda October 16, 2020 (metrovancouver.org) – Item 5.5
2. MVRD Board Meeting Agenda Package - July 30, 2021 (metrovancouver.org) – Section E 4.3
3. Cannabis Cultivation Emission Estimate Methodology and Sensitivity Analysis, Metro Vancouver, November 13, 2019

4. Discussion Paper: Potential Amendments to the Metro Vancouver Automotive Refinishing Emission Regulation Bylaw, Metro Vancouver, August 29, 2017
5. Relative Impact of Volatile Organic Compound Emissions from Agriculture on Air Quality of Urban Centres, BC Ministry of Agriculture, Food and Fisheries, September 2021

Proposed Measures to Manage Emissions from Cannabis Production and Processing

*Phase 2 Engagement Summary (*August 2021 to February 1, 2022*)*

About Metro Vancouver

Metro Vancouver is a federation of 21 municipalities, one electoral area, and one treaty First Nation that collaboratively plans for and delivers regional-scale services. Its core services are drinking water, wastewater treatment, and solid waste management. Metro Vancouver also regulates air quality, plans for urban growth, manages a regional parks system, and provides affordable housing. The regional district is governed by a Board of Directors of elected officials from each local authority.

Metro Vancouver embraces collaboration which contributes to a livable and resilient region, and a healthy natural environment for current and future generations. The responses, feedback, and perspectives received through this process will be carefully considered in potentially developing a regulation.

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May 2023

1. Background

Metro Vancouver is responsible for managing and regulating air quality in the region under authority delegated from the provincial government in the BC *Environmental Management Act*. Metro Vancouver protects public health and the environment through a tiered approach to managing the discharge of air contaminants, through site-specific permits, sectoral emission regulations, and provisions in the *Greater Vancouver Regional District (GVRD) Air Quality Management Bylaw No. 1082, 2008* (Bylaw 1082).

Facilities must seek authorization to emit air contaminants under an emission regulation, if the Metro Vancouver Regional District Board has adopted an applicable emission regulation and the facilities meet all the requirements, or under a site-specific permit. Bylaw 1082 prohibits any person from discharging air contaminants that cause pollution.

When the Government of Canada legalized recreational cannabis use in October 2018, indoor commercial cannabis production expanded rapidly in the Metro Vancouver region. As a result, some members of the public and other stakeholders expressed concerns about the potential impacts to the environment and to public health. In the Metro Vancouver region, several greenhouses formerly used for vegetable production have been retrofitted for cannabis production. These facilities were not designed or constructed to collect and treat air contaminants.

Complaints about odorous emissions associated with cannabis production and processing that Metro Vancouver has received through its environmental regulation enforcement program's online complaint form and phone line correspond with similar feedback we received from some residents during engagement.

Research and information from other cannabis-producing jurisdictions suggests that cannabis production has the potential to cause negative air quality impacts if the following emissions are not adequately controlled:

- Air contaminants emitted during cannabis production, processing, and extraction include volatile organic compounds (VOC). These contaminants may contribute to the formation of harmful ground-level ozone and fine particulate matter through reactions with other substances and sunlight in the lower atmosphere. Emissions most notably occur during the flowering, harvesting, drying, and trimming phases, during which high levels of a group of VOC called terpenes can be produced. Terpenes are known for their strong odour and involvement in the production of ground-level ozone and fine particulate matter.

- The equipment needed to meet the requirements for heating, lighting, and creating a suitable indoor growing environment for cannabis emits nitrogen oxides. They also may emit particulate matter, depending on the fuel source.

The purpose of an emission regulation for cannabis production and processing operations is to set efficient and effective requirements that will protect the public and the environment. Facility operators can choose to seek authorization of their emissions under an emission regulation if they meet all the requirements, or under a permit.

The proposed regulation seeks to authorize controlled emissions from cannabis cultivation and processing operations. Metro Vancouver's priority is controlling VOC emissions from cannabis production and processing, which occur during plant flowering, harvesting, drying, and trimming, and potentially during packaging, handling, or extraction of products.

2. Executive Summary

This report summarizes the feedback Metro Vancouver received during the second phase of engagement on the proposed cannabis production and processing emission regulation. Between August 2021 and February 1, 2022, Metro Vancouver sought feedback from cannabis producers, the broader agricultural sector, member jurisdictions, other orders of government, First Nations, and the public. The focus of this engagement was to seek comments and feedback on revised proposed requirements, which were revised based on feedback received during the first phase of engagement. Feedback on the revised proposed requirements was gathered through an online feedback form completed by 111 people, three public webinars, and over 20 meetings with key industry stakeholders and other orders of government.

The following bullets are key findings from the feedback received in Phase 2:

- The majority of the public who participated in the engagement are in favour of the proposed regulations; they would like to see Metro Vancouver implement the regulation as soon as possible
- Members of the public are also in favour of Metro Vancouver increasing the distance of cannabis production facilities from land zoned for residential use, hospitals, schools, playgrounds, daycares, and other community care facilities above the proposed 200-metre distance
- Cannabis producers would like to see more research and analysis done to better understand the health impacts caused by volatile organic compounds (VOCs) from cannabis production, as well as a separate study to understand the economic impacts of the proposed regulation
- There is concern amongst cannabis producers that the proposed regulation will have significant financial impacts due to costly retrofits
- There is concern amongst cannabis producers that the proposed regulations dictate filtration measures that will impact air flow in greenhouse environments and negatively impact plant health and crop revenues
- Many within the industry felt that the proposed regulation unfairly targeted cannabis producers
- There are concerns that there is an unfair level of over-regulation of cannabis producers that could spill over to other farming activities
- Member jurisdictions are interested in the effective alignment of regional and municipal authorization processes to ensure ease of implementation and protection of air quality
- Member jurisdictions with the authority to establish minimum separation distances in industrial and agricultural areas are concerned about loss of autonomy in land use planning
- Feedback from the public, industry, and all orders of government suggest that the proposed regulation needs to align with the federal Cannabis Act Regulations and that producers should be held accountable to those standards
- Ministry of Agriculture and Food staff and cannabis producers feel strongly that requiring a high control efficiency in growing areas within naturally ventilated greenhouses will have adverse impact on the sector and stifle future growth potential.

3. About the Engagement Program

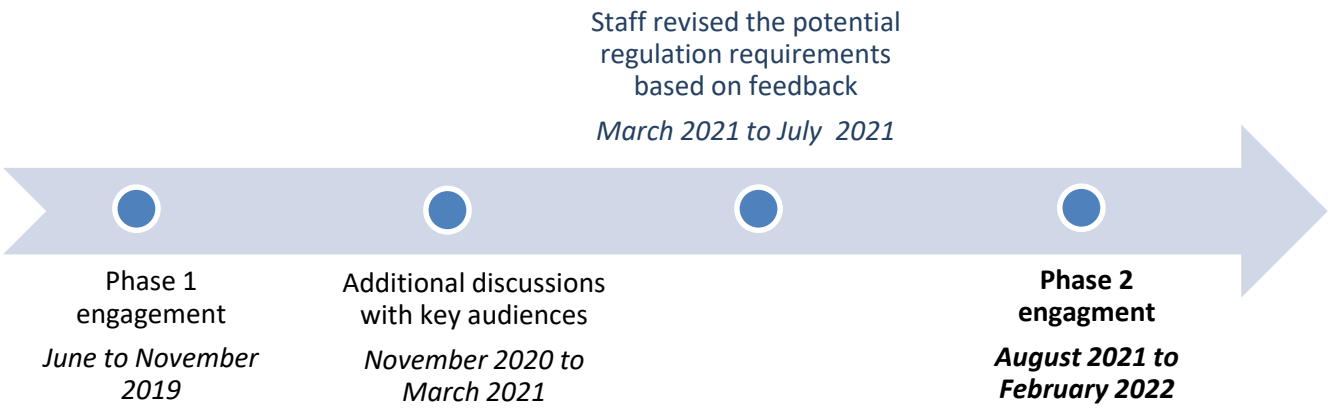
Metro Vancouver conducted a first exploratory phase of engagement from June to November 2019. Additional engagement, to gain deeper insight into the perspective of key audiences, occurred between November 2020 and March 2021 (summary of what was heard). Staff revised the regulatory proposals and conducted engagement on these revisions between August 2021 and February 2022, which is the subject of this summary.

The engagement program included:

- Notification to impacted sectors through relevant newsletters
- Presentations and feedback at meetings with agricultural advisory committees and representatives of industry stakeholder groups
- Staff-to-staff meetings with cannabis producers and relevant orders of government
- Three webinars with question-and-answer periods that included the public and stakeholder groups
- A webpage including a discussion paper, and an online feedback form

The feedback was received and recorded through various forms: minutes from in-person meetings, email correspondence, letters, and responses in the feedback form. The following is a summary of feedback received during Phase 2 engagement.

Engagement Timeline



Engagement Activities

The table below provides a summary of engagement activities during Phase 2 of engagement including intended audience(s).

Activity	Audience	Timing	Medium
Staff-to-staff meetings	Staff from member jurisdictions and regulatory agencies • Ministry of Agriculture • Ministry of Environment • Health Canada • Agricultural Land Commission	September 2021 to June 2023	Virtual

Invitation to complete feedback form	Public, members of the development community, industry and business associations	September 2021 to January 2022	Project webpage on Metro Vancouver website, Industry newsletters, email to subscribed lists
Invitation to First Nations to review and comment	• 10 in-region First Nations • 19 out-of-region First Nations • 3 Tribal Councils • 1 Treaty Group	August 2021 to February 2022	Email and hard-copy (where requested)
Three public webinars	Public, industry stakeholders, agriculture representatives, cannabis production and processing associations	September 2021 to February 2022	Virtual
Over 20 focused discussions and one-on-one meetings	Key government and industry stakeholders • BC Cannabis Secretariat • BC Craft Farmers Co-op • Cannabis Cultivators of BC	August 2021 to February 2022	Virtual
Presentations to Metro Vancouver Advisory Committees	Regional Engineers Advisory Committee (REAC) Air Quality Health Collaboration Committee Metro Vancouver Agricultural Advisory Committee	September 2021 to February 2022	Virtual
Invitation to review and comment	Industry stakeholders Cannabis producers and processors Members of the public subscribed to receive project information	September 2021 – February 2022	Email (multiple)
Advertisement to promote engagement	Agricultural communities • Country Life Magazine	December 2021	Print and online
Presentations to Agricultural Committees	Regional Agricultural Committees • Maple Ridge AAC • Township of Langley AAEEC • Surrey AEIAC • Pitt Meadows AAC • Delta AAC	September to November 2021	Virtual

4. Engagement Promotion

The engagement for a potential cannabis production and processing regulation was promoted on various online platforms, including the Metro Vancouver website, through email to our list of subscribed audiences and industry representatives, and via social media. In addition to Metro Vancouver promotion, industry associations and broader agricultural associations were asked to distribute engagement information in their virtual newsletters.

Website
A dedicated project webpage was set up to highlight the information about the proposed requirements for a potential cannabis production and processing regulation and to invite feedback during the engagement process. In addition, engagement opportunities were also promoted on Metro Vancouver's engagement webpage as well as the calendar of events webpage, featuring the feedback form and webinar series. There were over 1,350 project webpage views.

Feedback Form
The feedback form consisted of 10 questions gauging experience of impacts and opinions specific to proposed requirements, with spaces for additional comments and suggestions. The form was promoted on the Metro Vancouver project webpage, social media, e-newsletters, and at all meetings and webinars.

5. Engagement Participation

Virtual Meetings
Over 50 participants joined the staff to staff meetings and virtual webinars and provided feedback during the engagement. The project team also hosted over 20 focused discussions dedicated to listening to considerations and input from key government and industry stakeholders. At each meeting, staff shared background on the project, discussed the scope of the issue, and presented proposed regulation requirements, followed by guided discussions and question and answer periods. Participants were encouraged to ask questions and provide feedback.

Feedback Form Responses
The online feedback form garnered 111 responses. The questions were designed to generate feedback on how residents experience air quality impacts from cannabis production and processing, specific requirements being proposed, followed by opportunities to provide additional comments and concerns. Questions from the feedback form, along with quantitative and qualitative response data, can be found here.

Highlights from the feedback form are below:

- The majority of respondents (54%) have experienced personal impacts from emissions from commercial cannabis production and processing operations in Metro Vancouver.
    - 24% of respondents shared that the odour from living close to cannabis production facilities was so strong that they are unable to leave their windows open or take advantage of their outdoor space
    - Of these responses, a majority (58%) reported they have not experienced a change to these impacts since December 2019, the previous phase of engagement.

        - Those that answered they have noticed a change had mixed experiences: many respondents shared that the odour of emissions from cannabis production is unbearable, and some noted that it's gotten worse over the last few years, while some respondents noted that the odour of emissions from cannabis production has gotten better over the last few years due to better air filtration systems or because production facilities have closed down.
- The majority of respondents agree that
    - Cannabis facilities should be required to submit a comprehensive emissions management plan to Metro Vancouver for odorous air contaminants and other emissions, and this plan should be prepared by a qualified professional in the case of facilities with an indoor growing area greater than 200 m^2.
    - Facilities should use and maintain activated carbon filters for cannabis emission control in structures used for cultivation, processing, and extraction, unless the facility has a valid site-specific permit that authorizes the use of another type of emission control technology.
    - Cannabis waste management activities, including composting, that take place on the property where the cannabis is being produced or processed should be enclosed in a structure equipped with operating emission controls.
    - New cannabis facilities must be located more than 200 metres away from land zoned for residential use, hospitals, schools, playgrounds and daycares, and other community care facilities.
    - Registration fees and annual fees based on the amount of emission discharged should be introduced.
- Many respondents (38%) disagreed that facilities that cultivate cannabis in naturally ventilated greenhouses should have until July 2031 to achieve a similar level of cannabis emission control to the facilities that use mechanical ventilation instead of natural ventilation.

6. What We Heard

Below is a high-level summary of feedback separated by audience:

Feedback from member jurisdictions

- Metro Vancouver should consider developing resources, such as guidelines for qualified professionals, to encourage the consistent preparation of Emission Management Plans, should the regulation be approved
- Consideration of new regulations requires adequate community notification and cannabis operation transparency with respect to adhering to the cannabis regulation
- There are questions around how Metro Vancouver will verify distance requirements within each municipality and the process for applicants to apply for permits
- Further discussions needed to align municipal and regional permitting processes and to ensure effective implementation of the proposed emissions regulation
- Concerns that the proposed 200-metre minimum distance, on top of control requirements, will be challenging, especially for existing facilities and limit local government autonomy

- Metro Vancouver should explore imposing limits on the odorous emissions that cannabis production facilities generate
- Metro Vancouver should be the primary point of contact for receiving complaints

Feedback from other orders of government

- Metro Vancouver should consider making the proposed regulation less prescriptive about the type of emission control technology, to allow producers to decide the best way to manage their emissions
- Proposed minimum distance requirements should consider the size of the operation, and whether it's an indoor or outdoor operation
- Aspects of the proposed minimum distance requirements are overly restrictive and should be reduced to align with the Minister's Bylaw Standards of the provincial Ministry of Agriculture and Food
- Metro Vancouver should consider eliminating all fees because margins are tight for cannabis producers and they don't have the same access to capital, compared to other farming industries
- Metro Vancouver should align with the federal Cannabis Act Regulations and ensure that producers be held accountable to those standards

Feedback from the broader agricultural industry

- Metro Vancouver shouldn't be regulating cannabis sector emissions because it's an agricultural activity
- Concerns around the validity of the emissions estimates and the science used by Metro Vancouver to develop the proposed regulation
- The 200-metre minimum distance, on top of control requirements, will be problematic, especially for existing facilities
- There is an unfair level of over-regulation of cannabis producers that could spill over to other farming activities
- Concerns about generating additional emissions as a result of heating and cooling indoor structures
- Agricultural activities can be very odorous and it can be very difficult to manage
- Capturing and treating emissions in an open area can be challenging

7. First Nations Engagement

Letters, either hardcopy or emails, were sent to the 10 in-region First Nations, 19 out-of-region First Nations, three Tribal Councils, and one treaty group to seek feedback on the proposed regulatory approach, and to receive perspectives on the potential challenges in adopting this approach. The letters included a discussion paper and the revised proposals. Metro Vancouver expressed availability for meetings to provide further information on the initiative and to discuss how each Nation's history and interests could be acknowledged in the proposed emission regulation, and to explore other opportunities to work together on reducing regional air emissions.

Upon receiving requests for additional information, staff met with Kwantlen First Nation to provide a presentation on the proposals, answer questions, and gather feedback for consideration in the regulation development process. A noted comment from Kwantlen First Nation related to equity and fairness for all crop producers, which was a key consideration in the regulation development process.

8. How Feedback Will Be Used

Feedback gathered through this engagement process will be reviewed and considered along with ongoing technical work and will help staff to finalize the proposed regulation for Committee and Board consideration in 2023. The Committee and Board will be presented with the feedback in order to make an informed decision on how to proceed with the proposed regulation.

ATTACHMENT 2

Managing Emissions from Cannabis Production and Processing

PHASE 2 ENGAGEMENT SUMMARY AND NEXT STEPS

Esther Bérubé, P.Eng.

Division Manager, Air Quality Bylaw and Regulation Development

Laura Taylor

Senior Engagement Specialist

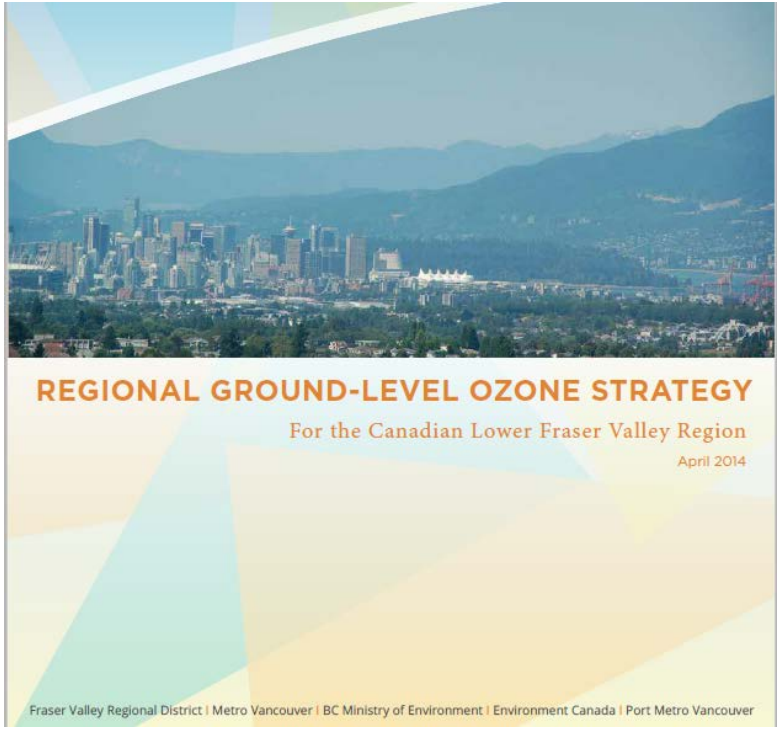
Date: July 6, 2023 Climate Action Committee Meeting

#52797760

metrovancouver

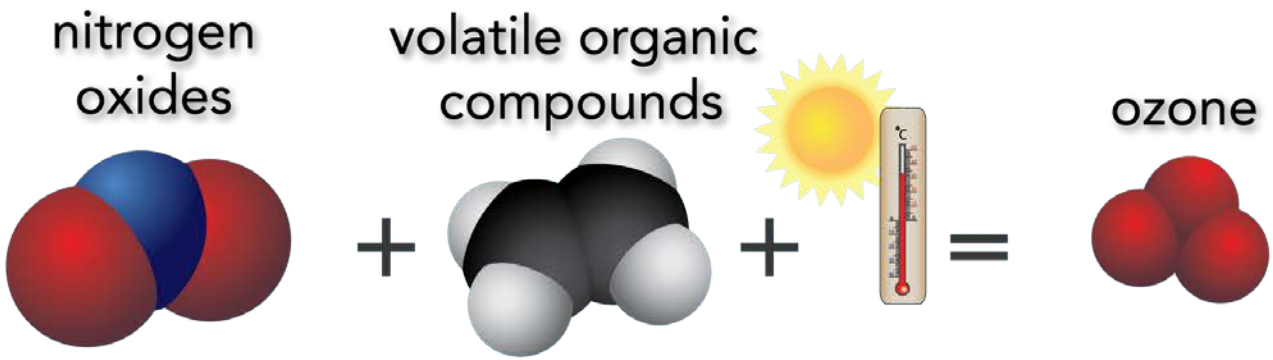
HEALTH AND ENVIRONMENTAL IMPACTS

- Ground-level ozone
  - Harmful to health and environment
- Cannabis production releases ozone precursors
  - Volatile organic compounds (VOC)
- Odorous emissions are a major source of complaints



Regional Ground-Level Ozone Strategy – Report Cover

ROLE OF VOC IN GROUND-LEVEL OZONE FORMATION

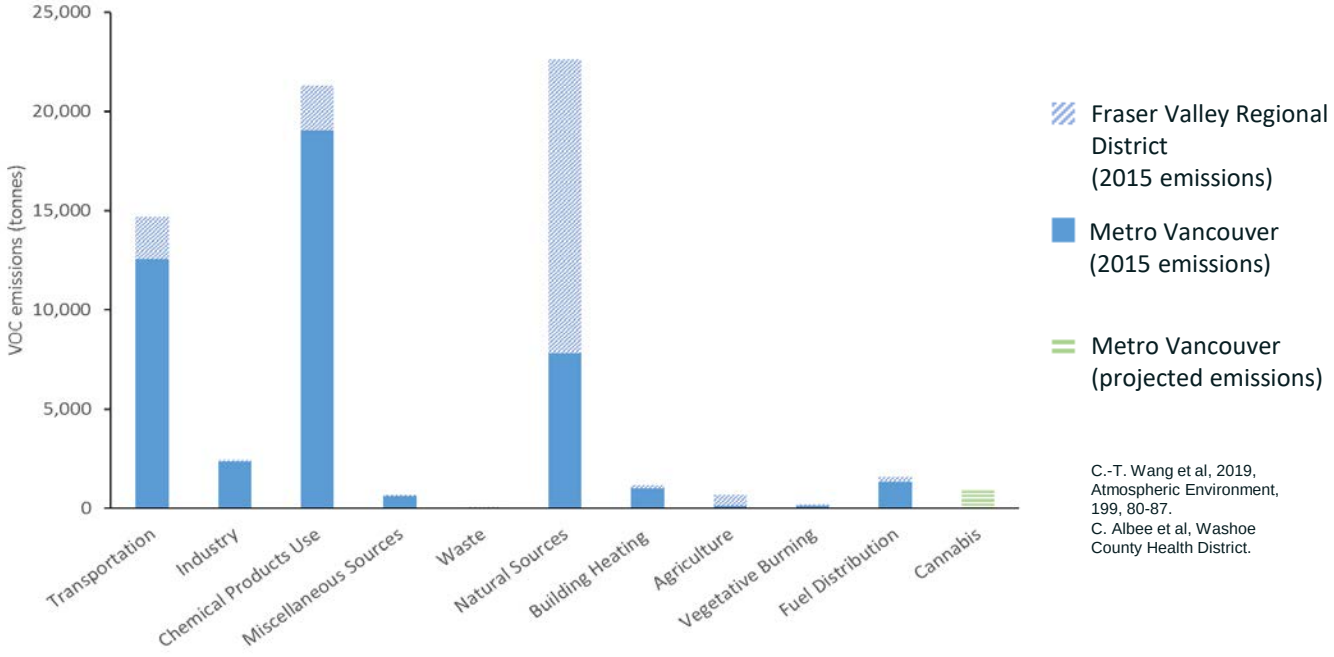


EXAMPLE EMISSIONS FROM REGIONAL CROPS

D. HELMIG ET AL., 2013, CHEMOSPHERE, 93(1), 35-46. J. ORTEGA ET AL., 2008, CHEMOSPHERE, 72(3), 365-380.
C.-T. WANG, ET AL., 2019, ATMOSPHERIC ENVIRONMENT, 199, 80-87

VOC EMISSIONS COMPARISON

Emissions of volatile organic compounds in the Canadian Lower Fraser Valley by sector compared to projected potential range of emissions from cannabis production in Metro Vancouver



C.-T. Wang et al, 2019, Atmospheric Environment, 199, 80-87.
C. Albee et al, Washoe County Health District.

2015 Lower Fraser Valley Air Emissions Inventory and Forecast, March 2018

POLICY DRIVERS

Hierarchy of Air Emission Management in Metro Vancouver

- Clean Air Plan (2021)
- Regional Ground-Level Ozone Strategy (2014)

PHASE 2 PROPOSALS FOR MANAGING EMISSIONS FROM ALL INDOOR CULTIVATION

1. Emission Management Plan
2. Emission Control Requirements
3. Complaints and Officer Observation Response Plan
4. Records and Reporting
5. Minimum Distance Requirements
6. Cost recovery

OVERVIEW OF FEEDBACK

Two engagement periods: June 2019 – February 2022

Wide range of perspectives:

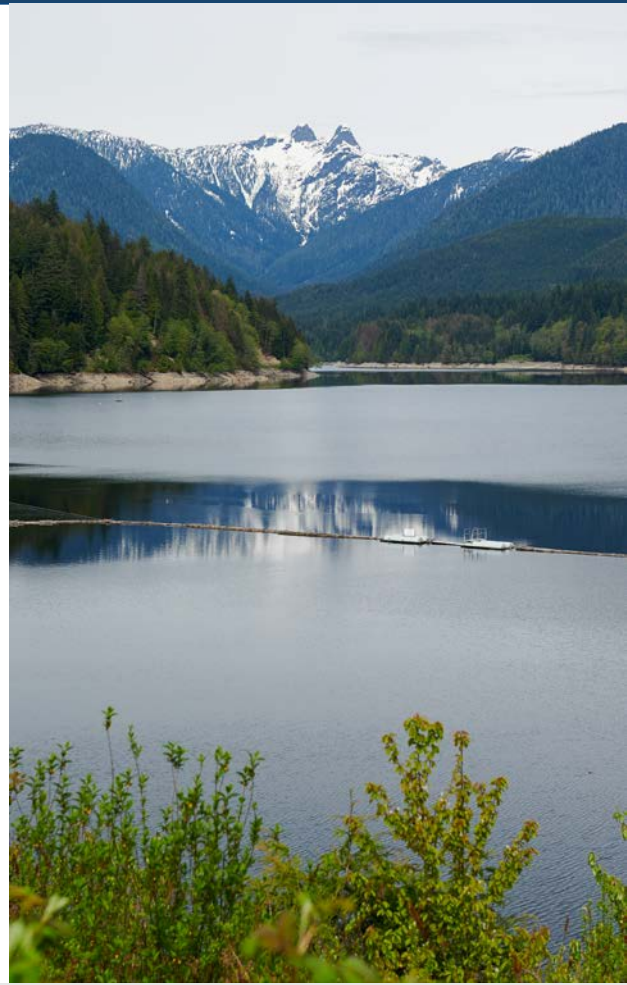
- Members of the public that participated expressed support
- Member jurisdiction staff expressed support
- Producers expressed opposition to a regulation
- Agricultural sector generally expressed opposition
- Provincial staff and producers are concerned that the proposed requirements would increase production costs and inhibit legalization

POTENTIAL REVISIONS

- Highest emission control in trimming and drying rooms
- More flexibility for emission control technology in existing greenhouses
- Review within three years of adoption
- Encourage municipalities to set minimum distances between new facilities and neighbouring land uses

NEXT STEPS

- Update emission estimates through collaboration
- Continue pursuing regulatory options to manage emissions from cannabis production and processing



Capilano Dam

Thanks

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To: Climate Action Committee

From: Linda Parkinson, Director, Water Services Department

Date: June 23, 2023 Meeting Date: July 6, 2023

Subject: **2023 Update on Water Sustainability Innovation Fund Projects**

RECOMMENDATION

That the Climate Action Committee receive for information the report dated June 23, 2023, titled "2023 Update on Water Sustainability Innovation Fund Projects."

EXECUTIVE SUMMARY

This report provides an update on 16 projects approved for funding between 2018 and 2022 under the Water Sustainability Innovation Fund. Descriptions of the 16 projects are included in the Attachment to this report. The project topics range from assessing contaminants of emerging concern, microplastics and disinfection by-products, to water supply monitoring and information management, greywater reuse, earthquake early warning systems, digitizing and updating existing hydrological, and hydraulic analytical processes.

PURPOSE

This report provides an annual update on projects funded under the Water Sustainability Innovation Fund from 2018 to 2022.

BACKGROUND

The Board created the Water Sustainability Innovation Fund (the Fund) in 2004 to provide financial support to water utility projects that contribute to the region's sustainability. The GVWD Board adopted the *Water Sustainability Innovation Fund Policy* (the Policy) on June 27, 2014, with further amendments in 2016 and 2021 to guide the use and management of the Fund. This report provides an annual update to the Climate Action Committee (CAC) as stated in the policy. It presents an update on projects that have not yet been reported as complete to the CAC, including status, the amount spent, and project outcomes.

STATUS OF SUSTAINABILITY INNOVATION FUND PROJECTS (APPROVAL YEARS: 2018 – 2022)

The Water Services Department has a total of 16 projects approved, valued at $6.8M. Two projects have been completed with successful outcomes, 12 projects are in various stages of progress, one project is on hold, and one is discontinued.

Table 1 below provides information on the status of each project. Additional details are provided in the Attachment.

Table 1. Information on Status of Sustainability Innovation Fund (SIF) Projects

Project	Approval Year	Amount Approved	Status
Greywater Reuse and Rainwater Harvesting Demonstration	2018	$350,000	In progress
Treating Emerging Contaminants at the Seymour Capilano Filtration Plant	2019	$300,000	In progress
UV Transmittance Analyzers for Continuous Monitoring of Disinfection By-Products	2020	$500,000	In progress
Earthquake Early Warning and Strategic Response System Pilot	2020	$270,000	**Completed**
Enhancing the Data Processing of the Water Flow Metering Network	2020	$180,000	In progress
Building Information Modeling (BIM): Transforming Utilities Information Management	2021	$800,000	In progress
Microplastics Study in Source Waters and Water Treatment	2021	$150,000	In progress
Next Generation Snowpack Monitoring – Phase 2	2021	$400,000	**Completed**
Visual Documentation of Key Water Services Infrastructure	2021	$700,000	In progress
ICI Sector Migration – Impact on Water Services	2021	$150,000	Discontinued
10-year Salmon Enhancement Action Plan	2022	$180,000	In progress
Hydrological Models for the Capilano and Seymour Watersheds	2022	$750,000	In progress
Digital Transformation of Water Transmission System Planning & Analysis	2022	$950,000	In progress
Feasibility Study to Optimize Transmission System Energy Use	2022	$350,000	On hold
Regional Equity and Affordability of Drinking Water	2022	$550,000	In progress
New Technology for the Determination of Enterococci in Recreational Water to Enhance Public Safety	2022	$200,000	In progress

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The projects summarized in this report had funding approved by the Board between 2018 and 2022. The disbursals of funds were made in accordance with the *Water Sustainability Innovation Fund Policy* that governs the use and management of the Fund.

Table 2 below outlines the funding approved and the amount spent to date for each project. Any unspent funds for completed or discontinued projects remain in the Fund reserve. At the time of this report, almost 23% of the approved funding for these 16 projects has been spent. The balance in the Fund on December 31, 2022, was $14.6 million.

Table 2. Approved Funding and Amount Spent for WSIF Projects

Project	Total Amount of Funding Approved	Amount Spent (as of June 1, 2023)
2018 Approval Year		
Greywater Reuse and Rainwater Harvesting Demonstration	$350,000	$288,684
2019 Approval Year		
Treating Emerging Contaminants at the Seymour Capilano Filtration Plant	$300,000	$174,364
2020 Approval Year		
UV Transmittance Analyzers for Continuous Monitoring of Disinfection By-Products	$500,000	$75,883
Earthquake Early Warning and Strategic Response System Pilot	$270,000	$199,389
Enhancing the Data Processing of the Water Flow Metering Network	$180,000	$172,800
2021 Approval Year		
Building Information Modeling (BIM): Transforming Utilities Information Management	$800,000	$302,075
Microplastics Study in Source Waters and Water Treatment	$150,000	$0
Next Generation Snowpack Monitoring – Phase 2	$400,000	$300,978
Visual Documentation of Key Water Services Infrastructure	$700,000	$0
ICI Sector Migration – Impact on Water Services	$150,000	$0
2022 Approval Year		
10-year Salmon Enhancement Action Plan	$180,000	$0
Hydrological Models for the Capilano and Seymour Watersheds	$750,000	$0
Digital Transformation of Water Transmission System Planning & Analysis	$950,000	$28,921
Feasibility Study to Optimize Transmission System Energy Use	$350,000	$0
Regional Equity and Affordability of Drinking Water	$550,000	$0

Project	Total Amount of Funding Approved	Amount Spent (as of June 1, 2023)
New Technology for the Determination of Enterococci in Recreational Water to Enhance Public Safety	$200,000	$0

CONCLUSION

This report presents an update on 16 projects funded under the Water Sustainability Innovation Fund. The Fund was created by the Board in 2004 to provide financial support to Water Utility projects that contribute to the region's sustainability.

Attachments

1. 2023 Update on Water Sustainability Innovation Fund Projects, dated June 01, 2023
2. Presentation re: 2023 Update on Water Sustainability Innovation Fund Projects

2023 UPDATE ON WATER SUSTAINABILITY INNOVATION FUND PROJECTS

Greywater Reuse and Rainwater Harvesting Demonstration: In Progress

Metro Vancouver has undertaken an initiative to support the uptake of these non-potable water systems at individual buildings in the region. The project aims to advance non-potable water use through research, education, capacity building, and by convening relevant stakeholders into a process to identify and address barriers to the broader adoption of these systems. Due to pandemic restrictions, the demonstration activity was removed from the project scope. This project is also referred to as the *Non-Potable Water Project* in reports to the Water Committee.

Outcomes to date:

- A non-potable water systems guidebook is complete and is tailored as a resource for non-technical stakeholders. The guidebook includes case studies, lessons learned, the non-potable water regulatory environment, and recommendations for the planning, design, implementation, and operation and maintenance of non-potable building-scale water systems.
- The companion document caters to technical groups and covers the technical aspects of planning, design, and implementation of non-potable water systems, and guidance on performance monitoring.
- The key-findings document (formerly the roadmap) identifies the barriers to broader adoption of non-potable water systems in the region and makes 10 recommendations in six main categories: regulation and its application; management and oversight post-occupancy; public policy and business casing; institutional and industry capacity; monitoring and evaluation; and ongoing coordination.

The key deliverables of the project are complete and were provided to the Water Committee at its June 14, 2023 meeting. The remaining budget originally intended for the cancelled demonstration activity will now be used for ongoing engagement work resulting from the recommendations. The project is scheduled to be completed by the end of 2023.

Treating Emerging Contaminants at the Seymour Capilano Filtration Plant: In Progress

This project is using consulting engineering services to assess and study current and future emerging contaminants at the Seymour Capilano Filtration Plant (SCFP) in two phases. The Phase 1 literature survey includes a desktop study to develop a detailed understanding of future contaminants in source water, assess existing treatment processes, and evaluate best practices to manage emerging contaminants of concern. Phase 2 was proposed to undertake pilot testing on a selection of the highest-risk contaminants.

Outcomes to date:

- Phase 1 is substantially complete with two successful workshops and final technical memorandums on Literature Survey and Treatability Assessment. These reports define the treatment objectives and operating conditions at the SCFP to effectively treat emerging contaminants.

- Following the review of Phase 1 results, naturally-occurring contaminants resulting from natural watershed disturbances were identified as posing the highest risk to source water quality with impacts to treatment operations and drinking water quality at the SCFP.
- The recommendations from Phase 1 include potential facility improvements, operational enhancements, and capital improvements to manage these risks with three to four treatment strategies.
- The scope of Phase 2 has been revised to carry out further definition, process evaluation, and conceptual design development and to evaluate the constructability, staging, integration, operability, and maintainability of the proposed treatment strategies. The revised scope is intended to provide recommendations to optimize the existing residual instrumentation.

Phase 2 is scheduled to commence in October 2023 and is expected to be completed by mid-2024 with the approved budget.

UV Transmittance Analyzers for Continuous Monitoring of Disinfection By-Products: In Progress

This project is evaluating the use of multi-spectrum UV visible analyzers for continuous monitoring of disinfection by-products (DBPs) at the Coquitlam Water Treatment Plant (CWTP) and at various locations in the transmission system. Consultant engineering services are required for this project. Data collected using the UV visible analyzers may enable the implementation of DBP prediction models to optimize sodium hypochlorite and ozone dosages at CWTP and thereby minimize the formation of DBPs in the water transmission system. Phase 1 includes a literature survey and desktop analysis that requires the collection of data over one year.

Outcomes to date:

- The consultant has completed the evaluation of the multi-spectrum UV visible analyzers, and instrument selection has been completed.
- Procurement of the recommended UV visible spectrometer instrument is underway.

The project has been delayed due to staff turnover at Water Services. The new project team is reviewing the original scope and deliverables, and will update the implementation plan before resuming Phase 1 in Fall 2023. At the completion of Phase 1, a decision will be made on whether to proceed with Phase 2, a pilot project to design and install in-line instrumentation at selected locations to monitor DBPs. The project is expected to be completed by the end of 2024.

Earthquake Early Warning and Strategic Response System Pilot: Complete

This project utilizes specialized consulting engineering services to plan, design, install, test, and commission an earthquake early warning system at critical Metro Vancouver sites. The project commenced in January 2021 with a consultant, and the system installation was completed by September 2022. The project team is currently developing a close-out report to Water Committee.

Outcomes to date:

- An earthquake early warning pilot system has been installed at three sites (Seymour Capilano Filtration Plant, Coquitlam Water Treatment Plant, and Lake City Operations Centre).

- The system is designed to sound alarms, giving seconds to tens of seconds of warning to staff and operators. Staff can then seek to duck, cover, and hold or exit vulnerable spaces.
- The system has been functioning well over the test period and is now considered to be operational. Earthquakes are routinely being detected, even though they are below the trigger threshold of the early warning alarms.
- It is recommended that the pilot system be extended across the region for greater spatial coverage, improved warning times, increased redundancy and reliability, and post-earthquake damage assessments at critical sites.

The project team will now examine and test the utilization of the warnings for any automated actions using operational resources. These actions could help secure vulnerable aspects of the water supply system while increasing safety and resiliency across the region. A new SIF application is being considered for Phase 2 to work on the recommendations from the pilot project.

Enhancing the Data Processing of the Water Flow Metering Network: In Progress

This project is evaluating and developing artificial intelligence software solutions that use artificial neural networks to enhance the data processing of the water flow metering network. This project involves setting up a software system, analyzing historical data from the flow metering network, generating forecasts and comparing them with live data, and reporting unexpected trends to staff for further investigation.

Outcomes to date:

- The vendor demonstrated the product at an off-site installation in March 2022, and Metro Vancouver was able to complete the initial testing.
- The vendor-led factory acceptance test sessions of the selected software application were completed satisfactorily.
- On-site installation in the test environment was completed in April 2022.
- The application is now on the Metro Vancouver server and final validation testing and integration are underway.
- The application is expected to go-live in September, 2023.

The project scope is 96% complete and experienced some delay in the completion of the on-site production environment and integration with the Metro Vancouver database. The final integration and validation tests are underway and the project is expected to be completed by the end of September 2023.

Building Information Modeling (BIM): Transforming Utilities Information Management: In Progress

This project is exploring and advancing the potential of Building Information Modeling (BIM) for Metro Vancouver utilities using consulting engineering services. An earlier review of BIM and its benefits for utilities showed tangible efficiencies and cost reductions over the long term. The project will be completed in three phases and each stage gated for review and approval.

Outcomes to Date:

- Consulting engineering services were procured in 2021.
- Standards and processes development is 70% complete.
- Training of Metro Vancouver staff on the use of BIM tools is underway.

The consultant's contract is expected to be complete by the end of 2023 with the completion of policies, standards, templates and procedures, successful piloting of BIM 3D tools, staff training, and organizational process improvements. The project team will review the proposed scope for Phases 2 and 3 and identify activities that could be included in Phase 1 since 45% of the budget will be available after the current consultant's contract.

Phase 2 is proposed to support construction management, commissioning, operations, and maintenance activities. The final Phase 3 will pilot the integration of BIM with Enterprise Asset Management, GIS, and other corporate systems, including the Digital Twin Hydraulic model.

Microplastics Study in Source Waters and Water Treatment: In Progress

This study is evaluating the presence and concentration of microplastics in Metro Vancouver's source waters (Capilano, Seymour, and Coquitlam), treatment residuals from the Seymour Capilano Filtration Plant, and within the water treatment process at both drinking water treatment plants. The long-term objective of this project is to develop a foundation for identifying potential microplastics studies within the drinking water treatment and transmission systems as well as within other departments such as Liquid Waste Services.

The project scope has been revised several times with new research and regulatory information. Since 2021, sampling and testing methodologies and polymer characterization technologies have reached an acceptable standard across this developing field of research. Procurement for a research consultant with relevant expertise will begin in the summer of 2023, with expected completion in Fall 2025.

Next Generation Snowpack Monitoring – Phase 2: Complete

This project involves reviewing and applying new technologies to measure snow in the watersheds and quantify the amount of stored water in the seasonal snowpack. Phase 1 began in 2019 and was completed by 2021 when Phase 2 was approved.

Outcomes to date:

- The project team completed five fixed-wing aerial LiDAR snow depth surveys, two remotely piloted aerial systems (RPAS or drones) surveys in 2021, and two additional aerial LiDAR surveys in 2022.
- Extensive field validation work has been completed to determine the accuracy of remotely sensed geospatial snow products and to determine potential sources of error. Aerial LiDAR and RPAS photogrammetry have shown promising results.

- Optical and Synthetic Aperture Radar (SAR) satellites are now being used operationally to determine the snow-covered extent over the water supply areas. This imagery is currently being processed and analyzed by Metro Vancouver staff.

Phase 2 is complete and the Metro Vancouver team is beginning to work with a consultant to use satellite imagery and machine learning/artificial intelligence algorithms to produce weekly snow depth, snow water equivalent, wet snow extent, and soil moisture maps of the water supply areas. The accuracy and efficiency of snowpack monitoring and water supply reporting have improved dramatically since 2021. Phase 3 of the project was approved in March 2023 and will continue operationalizing the tools developed during Phases 1 and 2 into the MV snowpack monitoring program.

Visual Documentation of Key Water Services Infrastructure: In Progress

This project aims to create a visual database of critical components of Metro Vancouver's drinking water infrastructure, including dams and water treatment plants. The visual database would result in a potential number of new and innovative services, including:

- 360° site walk-throughs that allow for remote management and visualization;
- Measurable 2D and 3D images that document existing conditions; and
- Accurate and representative floorplans.

Having an accurate inventory of Metro Vancouver's infrastructure is crucial to effectively managing assets and making informed decisions about future development.

With the Building Information Modeling (BIM) project Phase 1 nearing completion, this project's scope is being revisited to incorporate any relevant findings, and the project is expected to resume in late Fall 2023 with procurement of consulting services.

Industrial, Commercial, and Institutional (ICI) Sector Migration – Impact on Water Services: Discontinued

Changes in land use patterns and rising land value have driven industry and other businesses to move to more cost-effective areas within and outside the region. In 2019, the Industrial, Commercial, and Institutional (ICI) sector was estimated to account for 26% of total regional water demand. The relocation of the ICI sector can potentially shift water demand in the region. This project was established to estimate future ICI water demand and how this may impact water system servicing infrastructure.

To inform the scope of work for this project, a screening-level analysis of regional water demand was conducted for the years 2005 to 2021. Results indicated that the anticipated movement of the ICI sector out of the region did not occur to the extent that was originally speculated to have any noticeable impact on water demand. In addition, many of the project objectives are being addressed through existing or upcoming work within Metro Vancouver’s annual operations, therefore, this project has been discontinued.

10-year Salmon Enhancement Action Plan: In Progress

This project will hire a consultant to develop a Metro Vancouver 10-year Salmon Enhancement Action Plan to coordinate and integrate corporate salmon enhancement activities to maximize salmon populations and increase salmon viability despite the impacts of development, climate change, and Metro Vancouver operations. This project will seek First Nations' participation from the start to shape the scope and direction of the 10-year action plan. Metro Vancouver member jurisdictions and salmon-focused agencies and organizations will also be engaged.

The introduction of the project to local First Nations has been completed and further conversations are ongoing. A scope is being developed, and a consultant will be engaged after procurement in Fall 2023. The project is expected to be completed in late 2024.

Hydrological Models for the Capilano and Seymour Watersheds: In Progress

This project requires specialized consulting engineering services to develop, build and calibrate integrated in-house hydrological models for the Capilano and Seymour watersheds. These models are expected to predict reservoir inflows and ensure a reliable regional water source by making forecasts with real-time data. The models will help with source water supply planning, effectively monitor long-term climate change scenarios, and inform major decisions about the two watersheds.

The project embraces the latest in data science and model development to advance the management of our valuable water resource. These models will increase the productivity and efficiency of watershed management and hydrological analysis functions. The in-house models enable the integration of various water source-side functionalities, operations, forecasting, and reporting requirements.

After a lengthy procurement process, a consultant has been shortlisted for the award. The project team is setting up the project plan, contract award, and kick-off meetings. The project is expected to be completed in Fall 2025.

Digital Transformation of Water Transmission System Planning & Analysis: In Progress

This project aims to develop an up-to-date water transmission model using the newly-adopted software, InfoWater Pro, to address existing models' deficiencies and ensure that the new hydraulic model meets and exceeds current industry standards for infrastructure planning, operations and maintenance. This project will deliver two critical components needed to establish the Smart Water Network:

- A comprehensive and calibrated hydraulic model; and
- A Data Analysis Platform (DAP).

The DAP will ideally be integrated with the model to analyze data, predict system performance, and develop patterns, KPIs and dashboards, improving accuracy and decision-making on a daily, mid-term, and long-term basis.

A consultant has been engaged since October 2022 with 10% of the scope currently completed. The project is expected to be completed in December 2024.

Feasibility Study to Optimize Transmission System Energy Use: On Hold

Consultant engineering services are required for this two-phased project requiring consulting engineering services. Phase 1 will investigate options to reduce MV's purchase of electricity from BC Hydro and overall energy consumption by optimizing the operational processes of the water transmission system. Phase 2 will investigate alternative lower-carbon energy sources to power high-energy-demand operations and develop the business case for the development of these innovative solutions.

The project is on hold and will resume when the Digital Transformation project has progressed and the water transmission system's hydraulics model is close to completion in Q2 2024. The scope of work will be reassessed when the project resumes to ensure the most up-to-date and relevant information is being considered to achieve the project outcomes.

Regional Equity and Affordability of Drinking Water: In Progress

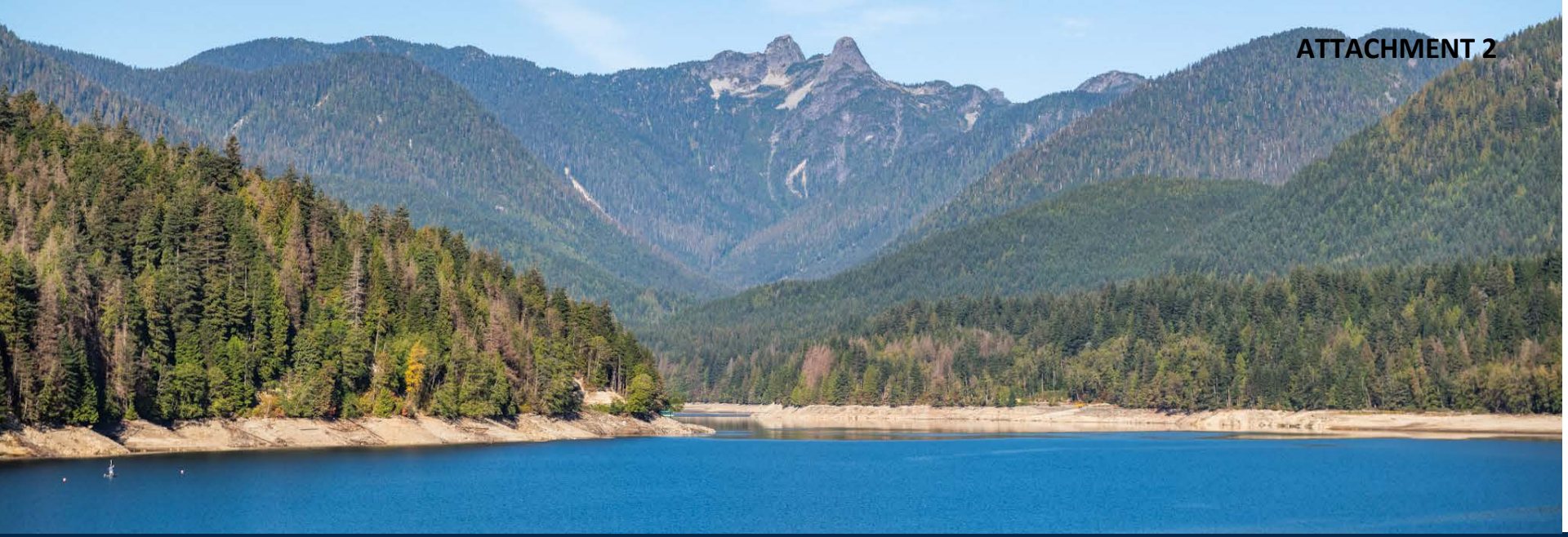
This project supports the goal of ensuring that the regional drinking water supply remains sustainable, equitable, and affordable amid the challenges of rising utility and household costs, a post-pandemic recovery, and climate and demographical changes.

The project aims to identify opportunities related to regional equity and affordability of water services. This will include consideration for both Metro Vancouver and member jurisdiction perspectives. The project team continues developing the scope to best achieve the project objectives.

New Technology for the Determination of Enterococci in Recreational Water to Enhance Public Safety: In Progress

The project was initially titled *New Technology for the Determination of E. coli in Recreational Water to Enhance Public Safety* and was approved in February 2022. The 2022 Health Canada draft guidelines for Recreational Water Quality now include the qPCR method for Enterococci. The project will now focus on method development for *Enterococci* rather than *Escherichia coli* (*E. coli*). The project title has been amended to *New Technology for the Determination of Enterococci in Recreational Water to Enhance Public Safety*.

Following staff changes and an extended procurement phase, the British Columbia Centre for Disease Control (BCCDC) has been sole-sourced to evaluate, test, verify and optimize the new molecular testing methods. The project will be staged over two years and is expected to be completed by late Fall 2024.



Capilano Reservoir during the warm, dry fall 2022

2023 Update on Sustainability Innovation Fund Projects

WATER SERVICES

Linda Parkinson

Director, Policy, Planning and Analysis, Water Services

Climate Action Committee: July 6th, 2023

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WATER SERVICES PROJECT UPDATES

2018-2022 Approval Years

	Projects in Progress (Year Approved)	% Spent
1.	Greywater Reuse and Rainwater Harvesting Demonstration (2018)	82%
2.	Treating Emerging Contaminants at the Seymour Capilano Filtration Plant (2019)	58%
3.	UV Transmittance Analyzers for Continuous Monitoring of Disinfection By-Products (2020)	15%
4.	Earthquake Early Warning and Strategic Response System Pilot (2020)	74%

WATER SERVICES PROJECT UPDATES CONT'D

2018-2022 Approval Years

	Projects in Progress (Year Approved)	% Spent
5.	Enhancing the Data Processing of the Water Flow Metering Network (2020)	96%
6.	Building Information Modeling (BIM): Transforming Utilities Information Management (2021)	38%
7.	Next Generation Snowpack Monitoring – Phase 2 (2021)	75%
8.	Digital Transformation of Water Transmission System Planning and Analysis (2022)	3%

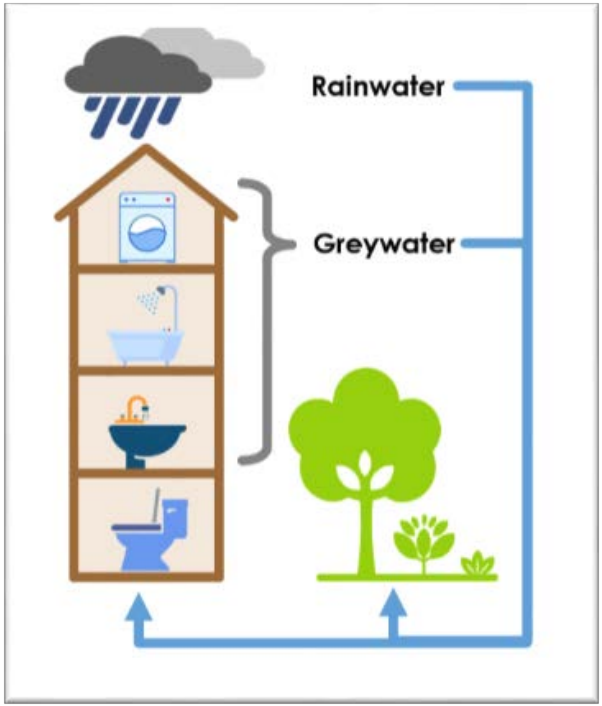
1. GREYWATER REUSE AND RAINWATER HARVESTING DEMONSTRATION

Purpose: to support the uptake of non-potable water systems across the region.

Outcomes:

- Non-potable water systems guidebook and companion document
- Roadmap to broader adoption and opportunities

Status: In Progress



Typical greywater and rainwater collection and application

4. EARTHQUAKE EARLY WARNING AND STRATEGIC RESPONSE SYSTEM PILOT

Purpose: to plan, design, install, test, and commission an early warning system at critical water facilities.

Outcomes:

- Pilot system successfully installed at three sites
- System is functioning, reliable, and operational

Status: Complete

4.9 Magnitude Earthquake detected November 25, 2022

5. ENHANCING THE DATA PROCESSING OF THE WATER FLOW METERING NETWORK

Purpose: to evaluate, and develop an artificial neural network application to enhance data processing of the water flow metering network.

Outcomes:

- Application is on MV server
- Final testing and set up underway
- Go-live expected by June 30, 2023

Status: In Progress

New magnetic meter installation M194 on Annacis Main#2

7. NEXT GENERATION SNOWPACK MONITORING – PHASE 2

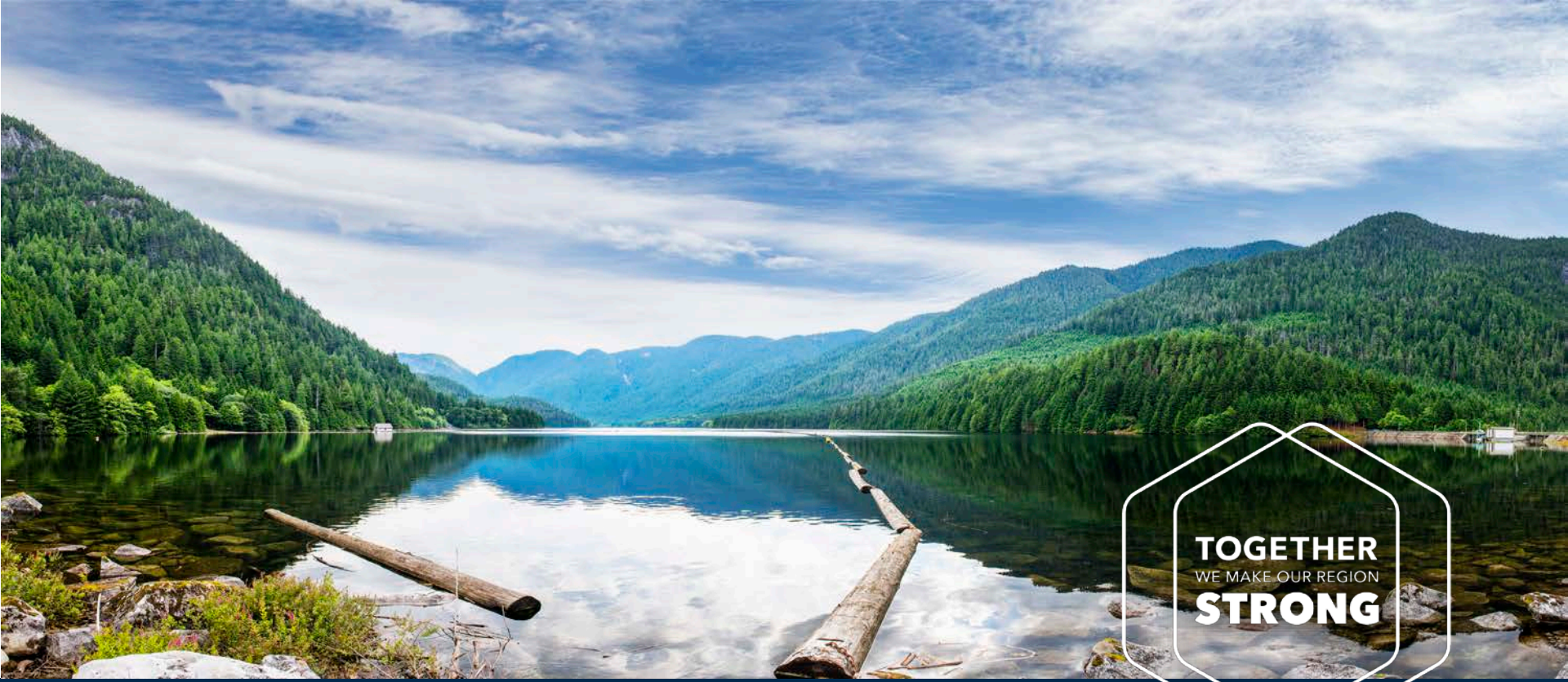
Purpose: to evaluate and apply new technologies to measure snowpack and determine stored water potential.

Outcomes:

- LiDAR and drone surveys completed
- Field validation completed
- Satellite data now in use

Status: Complete

Manual snow surveys



Seymour Falls Dam

Questions. Thanks.

metrovancouver

To: Climate Action Committee

From: Conor Reynolds, Director, Air Quality and Climate Change

Date: June 29, 2023 Meeting Date: July 6, 2023

Subject: **Manager's Report**

RECOMMENDATION
That the Climate Action Committee receive for information the report dated June 29, 2023 titled "Manager's Report".

Climate Action Committee 2023 Work Plan
The attachment sets out the Committee's Work Plan for 2023. 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.

Clean Power to Electrify B.C.'s Future
In June 2023, BC Hydro announced that they will be moving forward with a call for new sources of clean, renewable electricity (Reference 1). This will be BC Hydro's first call for power in 15 years and reflects the need to source new clean, renewable electricity, in order to meet the Province's CleanBC greenhouse gas reduction targets. Under BC Hydro's most recent demand forecast filed with the BC Utilities Commission, electricity demand is expected to increase by 15% between now and 2030 as more homes, businesses, and industries switch from fossil fuels to clean electricity. In this call for power, BC Hydro will only acquire 100% clean, renewable electricity (e.g., wind and solar), and the call for power process will be designed by BC Hydro and the Province, following engagement with First Nations, industry, and stakeholders.

The Province will also be providing $140 million dollars to the BC Indigenous Clean Energy Initiative (BCICEI) to support Indigenous-led power projects. The Province's contribution to the BCICEI will support smaller Indigenous-led power projects that may otherwise not have been competitive due to their smaller size. Staff are strongly supportive of the actions that BC Hydro is taking to ensure there is sufficient, clean renewable electricity to support electrification initiatives within *Climate 2050*, and to advance reconciliation with First Nations.

Border Carbon Adjustments
At its meeting on May 11, 2023, Climate Action Committee members asked questions about border carbon adjustments in the context of the *Climate 2050 Industry and Business Roadmap*. This item provides some more information about this topic.

As jurisdictions ramp up regulations and policies to combat climate change, the region's business community has expressed concerns about how added costs associated with lowering GHG emissions might impact their competitiveness, especially within those industries that are export-oriented and compete against other jurisdictions that have different policies and associated costs.

There will be variations between markets around the world where Metro Vancouver industries are competing for business.

One mechanism to help businesses compete on the global market would be the establishment of border carbon adjustments (BCAs). BCAs account for differing carbon costs incurred in producing goods across jurisdictions that are subsequently traded internationally. A BCA could generally be considered as a special import tariff where charges applied to goods from countries that either do not have carbon pricing or apply a lower carbon price to ensure that they face similar carbon costs to those that apply to domestic producers. Additionally, export rebates can be provided to Canadian exporters so that domestically produced goods compete on equal footing in foreign markets, alongside goods from countries with limited or no carbon pricing.

BCAs have four main goals (and benefits) which are:

- Reducing the risk of "carbon leakage", where companies may choose to move to a different jurisdiction instead of reducing emissions.
- Maintaining the competitiveness of domestic industries, which allows domestic companies incurring carbon costs to compete with foreign imports and compete in overseas markets.
- Supporting greater domestic GHG reductions, by leveling the playing field between imported and domestic goods.
- Driving international climate action: BCAs can nudge other countries to implement stronger domestic climate policies to avoid subjecting their exported goods to the cost of a BCA and to maintain market access.

In the fall of 2020, the Government of Canada announced its intention to explore the potential of Border Carbon Adjustments (BCAs) as part of Canada's transition to a low-carbon economy. Budget 2021 also announced the Government's intention to engage in consultations on BCAs. Furthermore, in February 2021, Canada and the US agreed to a Roadmap for a Renewed Canada-U.S. Partnership in which both countries work together to address impacts on trade from global disparities in climate policies. While no national jurisdiction has implemented BCAs to date, they have been the subject of analysis for many years and it is generally accepted that they should be implemented through international agreements in a coordinated fashion. Most notably, the European Union has recently taken an important step forward on BCAs by releasing a legislative proposal for BCA implementation.

Consultation on Minister's Bylaw Standards for Cannabis Production Facilities in the Agricultural Land Reserve

The Ministry of Agriculture and Food ("the Ministry") offers Minister's Bylaw Standards (MBS) for local governments who are developing and amending bylaws affecting farming areas, particularly zoning bylaws and other bylaws related to land use planning.

The Ministry invited feedback from local governments until June 14, 2023 on a discussion paper to update the MBS created in 2015 for medical marihuana production facilities (Reference 2) in the Agricultural Land Reserve (ALR). The update is intended to support local government bylaw development regarding non-medical, federally licensed cannabis production facilities in the ALR. The MBS include guidance on setbacks (distances between cannabis production facilities and their

property limit as well as between facilities and other land uses), minimum lot sizes, and lot coverage for cannabis production facilities.

Only minor amendments to the MBS for cannabis production in the ALR are being proposed. The Ministry proposes to remove from the MBS the requirement for cannabis producers to obtain a local business license. The other existing MBS for medical marihuana production facilities are proposed to be retained for non-medical, federally licensed cannabis production facilities in the ALR. These MBS include a 30 metre maximum setback from cannabis production facilities to non-ALR residential uses with a buffer (such as a fence), or 60 metre maximum setback if a buffer is not employed.

Metro Vancouver had proposed to require larger distances between cannabis production facilities and neighbouring land uses compared to the setbacks in the MBS during the second phase of engagement on Metro Vancouver's proposed management of emissions from cannabis production and processing that took place between August 2021 and February 2022. In combination with increased emission controls at the source, larger distances between facilities and neighbouring land uses would encourage dispersion of emissions and provide populations vulnerable to the impacts of degraded air quality with greater protection from the potential impacts of emissions from cannabis production and processing facilities. Metro Vancouver received feedback from municipal staff that indicated a preference for municipalities to maintain oversight of land use planning measures such as distances between land uses.

Metro Vancouver staff informed member municipalities of the Ministry's consultation on the updates to the MBS. Several municipalities provided input to the Ministry during the consultation.

New Resources for Dealing with Extreme Weather Events and Wildfire Smoke
Vancouver Coastal Health (VCH) has published new resources related to wildfire smoke and extreme weather events. The intent for creating and sharing the resources is to inform the public on ways to prepare for, adapt to, and build resiliency towards extreme weather events. Recognizing that extreme weather events are becoming more frequent and severe because of climate change, VCH aims to share knowledge with different stakeholders and empower them to take action to protect health by applying the information in these resources. The materials also provide links to other relevant programs, such as Metro Vancouver's air quality advisory program. VCH developed the materials with partners such as Fraser Health, BC Housing, and others.

The new materials include guidance in the following areas:

- Wildfire smoke (Reference 3)
- Wildfire smoke guidance for schools, childcare facilities, and community care facilities (References 4-6)
- Extreme heat, including guidance for cooling centres and clean air spaces, recommended actions for owners and managers of rental and/or strata housing, landlords and stratas, and heat planning resources for housing providers (References 7-11)

References

1. Clean power to electrify B.C.'s future
2. Medical Marihuana Production Facilities in the Agricultural Land Reserve
3. Wildfire smoke | Vancouver Coastal Health (vch.ca)
4. Schools and Wildfire Smoke | Vancouver Coastal Health (vch.ca)
5. Childcare Facilities and Wildfire Smoke | Vancouver Coastal Health (vch.ca)
6. Community Care Facilities and Wildfire Smoke | Vancouver Coastal Health (vch.ca)
7. Extreme heat | Vancouver Coastal Health (vch.ca)
8. Cooling Centers and Clean Air Spaces | Vancouver Coastal Health (vch.ca)
9. Recommended Actions for Owners and Managers of Rental and/or Strata Housing | Vancouver Coastal Health (vch.ca)
10. Extreme Heat and Wildfire Smoke | BC Housing
11. Heat Planning Resources for Housing Providers: Extreme Heat and Wildfire Smoke | BC Housing

Climate Action Committee 2023 Work Plan
Report Date: June 29, 2023

Priorities

1st Quarter	**Status**
Climate Action Committee orientation	Complete
Climate Action Committee meeting schedule and work plan	Complete
Amendments to air quality ticketing bylaws	Complete
Sustainability Innovation Fund (SIF) – 2023 proposals	Complete
2nd Quarter	**Status**
Climate 2050 nature and ecosystems roadmap	Complete
Climate 2050 industry and business roadmap	Complete
Climate 2050 energy roadmap	Complete
SIF - status report on previously approved liquid waste projects	Complete
SIF - status report on previously approved regional district projects	In progress
Overview of air quality advisory program and preparedness for 2023 season	In progress
3rd Quarter	**Status**
Emission regulation for cannabis production and processing	In progress
SIF - status report on previously approved water projects	In progress
Climate 2050 annual progress report	In progress
Draft Climate 2050 roadmap for land use and urban form	In progress
Climate 2050 agriculture roadmap	In progress
Draft Climate 2050 roadmap for human health and well-being	In progress
Annual air quality report	In progress
Update to internal carbon price policy	In progress
Amendments to boilers and process heaters emission regulation	In progress
Next phase of engagement on large buildings GHG emission regulation	Pending
4th Quarter	**Status**
Climate 2050 human health and well-being roadmap	Pending
Climate 2050 land use and urban form roadmap	Pending
Draft Climate 2050 roadmap for water and wastewater infrastructure	Pending
Corporate status report on carbon neutrality and energy management	In progress
Initiate engagement on emission regulation for lawn and garden equipment	Pending
Update to regional ground level ozone strategy	In progress
Report on 2023 air quality advisory season	Pending
Annual budget and five-year financial plan	Pending